



Endura™ NET5300B Video Encoder Base Module



**For Use With NET5308T-EXP Eight-Input
Multichannel Dual-Stream Video Encoder**

C2614M (12/06)

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Regulatory Notices

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

RADIO AND TELEVISION INTERFERENCE

This equipment has been tested and found to comply with the limits of 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 the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Changes and modifications not expressly approved by the manufacturer or registrant of this equipment can void your authority to operate this equipment under Federal Communications Commission's rules.

In order to maintain compliance with FCC regulations shielded cables must be used with this equipment. Operation with non-approved equipment or unshielded cables is likely to result in interference to radio and television reception.

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.

Important Notice

VIDEO QUALITY—CAUTION REGARDING USER SELECTED OPTIONS

Pelco systems are capable of providing high quality video for both live viewing and playback. However, the systems can be used in lower quality modes, which can degrade picture quality, to allow for a slower rate of data transfer and to reduce the amount of video data stored. The picture quality can be degraded by either lowering the resolution, reducing the picture rate, or both. A picture degraded by having a reduced resolution may result in an image that is less clear or even indiscernible. A picture degraded by reducing the picture rate has fewer frames per second, which can result in images that appear to jump or move more quickly than normal during playback. Lower frame rates may result in a key event not being recorded by the system.

Judgment as to the suitability of the products for users' purposes is solely the users' responsibility. Users shall determine the suitability of the products for their own intended application, picture rate and picture quality. In the event users intend to use the video for evidentiary purposes in a judicial proceeding or otherwise, users should consult with their attorney regarding any particular requirements for such use.

Description

The NET5308T is a high-performance, dual-stream, eight- or 16-input video encoding set of units. Each set includes one NET5300B unit and either one or two NET5308T-EXP units.

This product's main function is to convert live analog video signals into dual MPEG-4 streams. It can process up to 30 high quality images per second per stream. In addition, the NET5308T uses motion adaptive deinterlacing technology to reduce jitter in 4CIF images.

The NET5308T incorporates EnduraView™ video optimization technology to select the best image quality and frame rate for the target Endura™ product (decoder, workstation, console), all without affecting the system recording rate. For example, the unit selects a high rate and quality setting for recording and alarm conditions; it selects a lower rate for simple monitoring.

The NET5308T offers both unsecured and secured modes. The secure mode uses a proprietary key system to prevent unauthorized devices from communicating with a NET5308T over the Endura network.

The NET5308T is also designed for maximum system integration and flexibility. Each NET5308T-EXP supports 8 video inputs for easy expansion to 16 video inputs on the same network port. With its USB 2.0 technology, you can expand the NET5308T from 8 to 16 video inputs without redesigning your network.

Use the NET5308T to extend audio to the system from the encoder site. The unit transmits live audio across the network, letting you listen to activity in an area.

From any control device on the network, such as a VCD5000 Series video console display or a WS5050 Endura workstation, you can operate any dome, PTZ camera, or relay that is connected to the NET5308T.

The NET5308T supports control of pan/tilt/zoom (PTZ) cameras, using Pelco D, Pelco P, and Coaxitron® protocols. With Coaxitron, the NET5300B base module receives commands from a Pelco controller and transmits those commands to the PTZ device through the NET5308T-EXP. With the Pelco D and Pelco P protocols, the NET5300B transmits those commands directly to the PTZ device over a serial connection.

The NET5308T integrates seamlessly with Pelco's integrated security products to create a robust, secure, and expandable security platform.

FEATURES

- Up to 8 or 16 Video Inputs
- Two Simultaneous MPEG-4 Video Streams Per Input
- Up to 30 High Quality (4CIF) Images Per Second Per Stream
- Video, Audio, and Data Over IP Network
- Simultaneously View Video on a Computer User Interface, Console User Interface, and Video Decoder
- Adaptive Deinterlacing Technology
- Eight or 16 Programmable Alarm Inputs (Supervised or Unsupervised), Four or Eight Relay Outputs
- Two Security Modes
- Video Loss Indicator
- PTZ Support Using Pelco P or Pelco D (RS-422) and Coaxitron (up-the-coax) Protocols
- Plug-and-Play Configuration
- Fully Compatible with Pelco's Integrated System Architecture
- System Diagnostics and Error Logging
- Full Over-the-Network Remote Control and Administration

OPTIONAL ACCESSORIES

NET5308T-EXP	Multichannel video encoder, adds eight inputs to NET5308T set
WM5300	Vertical wall mount kit for one NET5300B and up to two NET5308T-EXP units

Before You Begin

Endura is a network system that requires a continuous amount of bandwidth to transmit true, live video. Therefore, always include your network administrator when planning and installing Endura components.

You will also need the following:

- Pelco-approved Endura certification
- Power source (110/220 VAC)
- Phillips screwdriver (if mounting the unit into a rack)
- Access to an Endura network
 - that is an active, gigabit Ethernet network that supports the full Internet Protocol suite,
 - that is configured with at least one NVR5100 Series network video recorder or other Endura video recorder,
 - that is configured with at least one NET5308T-EXP multichannel video encoder and at least one camera, and
 - that is configured with at least one WS5050 Endura workstation.

NOTE: These network requirements represent the minimum standard for a small Endura-capable security network. Please consult the Endura Network Design Guide to make sure your network is properly configured. Your system may be different and may require additional hardware, software, and network resources.

PARTS LIST

Qty	Description
1	NET5300B base module for use with NET5308T-EXP multichannel video encoder
1	Accessory pack: <ul style="list-style-type: none">4 Rubber feet with 8-32 x 0.25-inch, Phillips pan head screws (for desktop mounting)3 Power cords (1 USA standard, 1 European standard, and 1 UK standard)2 Front bezel keys2 USB 2.0 cables (1 red, 1 yellow)1 Sheet, NET5308T-EXP identification labels (USB)1 Straight cable for serial PTZ1 Reverse cable for serial PTZ1 Breakout box for serial PTZ
1	Rack mount kit (included with accessory pack): <ul style="list-style-type: none">2 Chassis mounting brackets with thumbscrews6 Screws, 6-32 x 0.25-inch, Phillips flat head (three for each bracket)2 Adjustable support rail sets (each set includes one front-mounting rail and one rear-mounting rail)6 Screws, 8-32 x 0.375-inch, Phillips truss head (three for each support rail)4 Screws, 10-32 x 0.5-inch, Phillips flat head (two for each front rail)4 Screws, 10-32 x 0.5-inch, Phillips pan head (two for each rear rail)10 Cage nuts, 10-32
3	Product serial number labels (attached to unit)
1	NET5300B Installation manual
1	Safety instructions

PACKAGE CONTENTS

The following diagrams show the contents of the three boxes. When installing the NET5300B, refer to these diagrams.

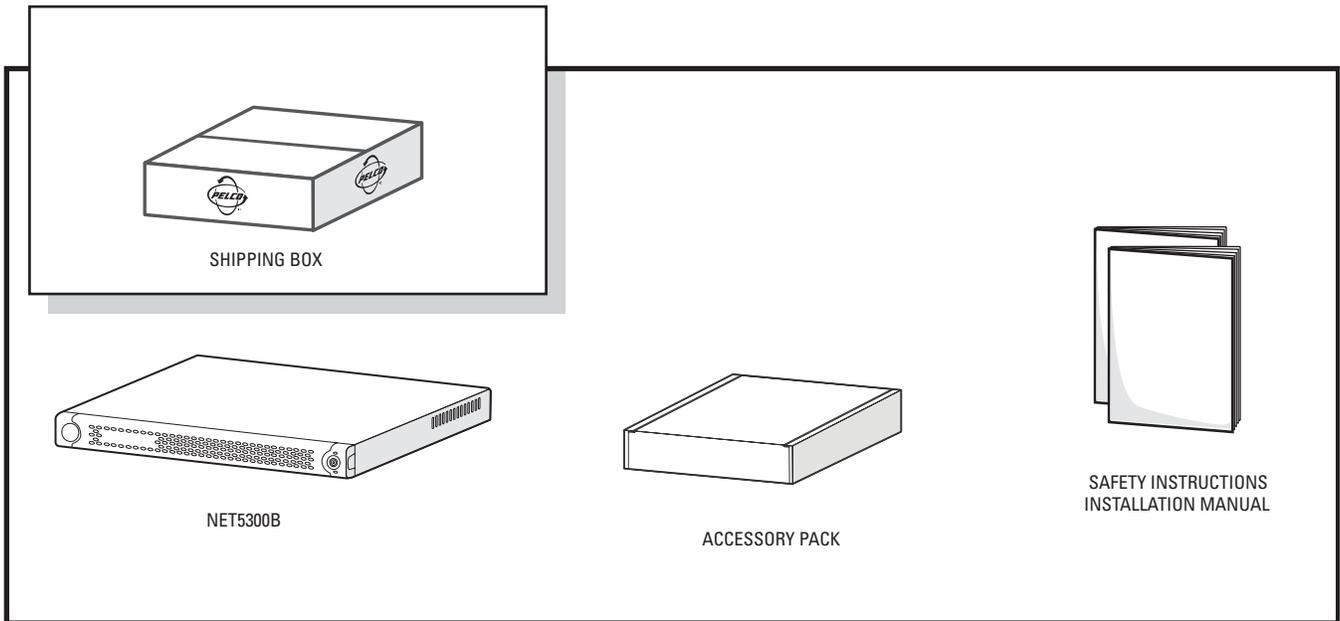


Figure 1. Major Package Components

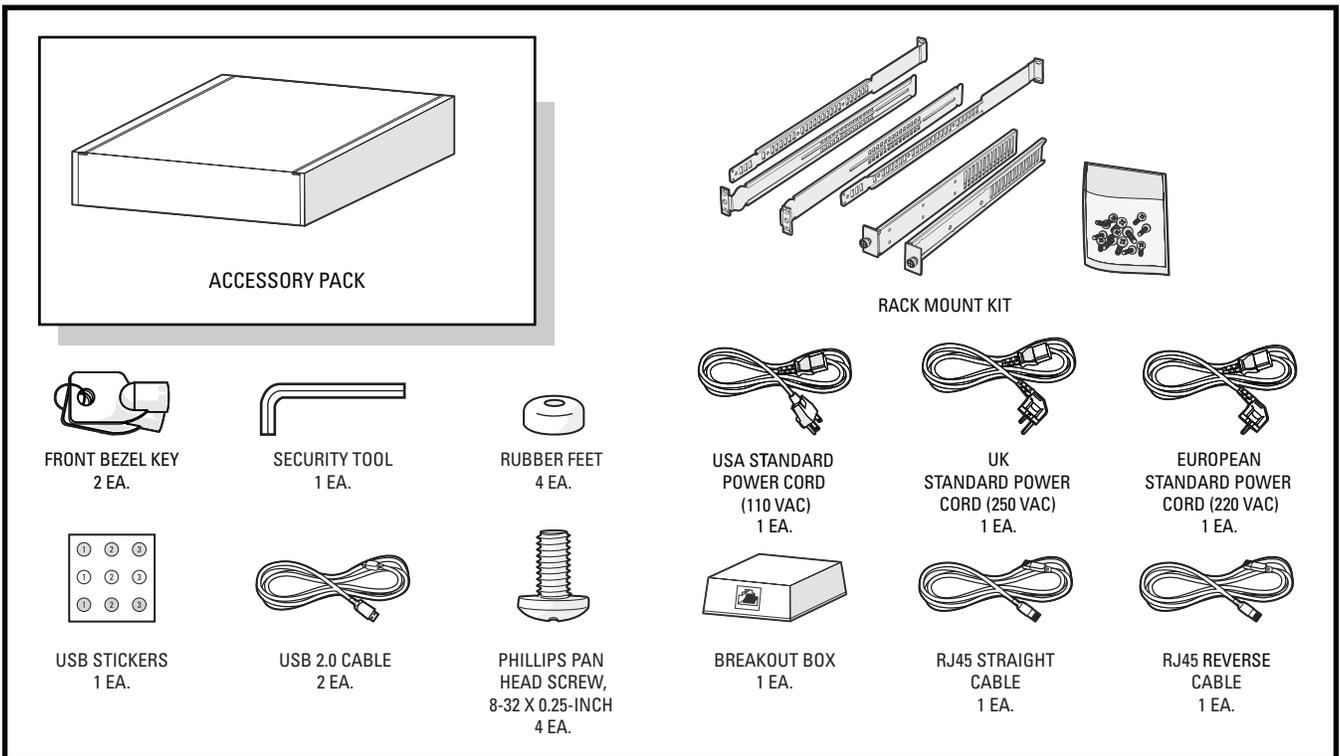


Figure 2. Accessory Pack

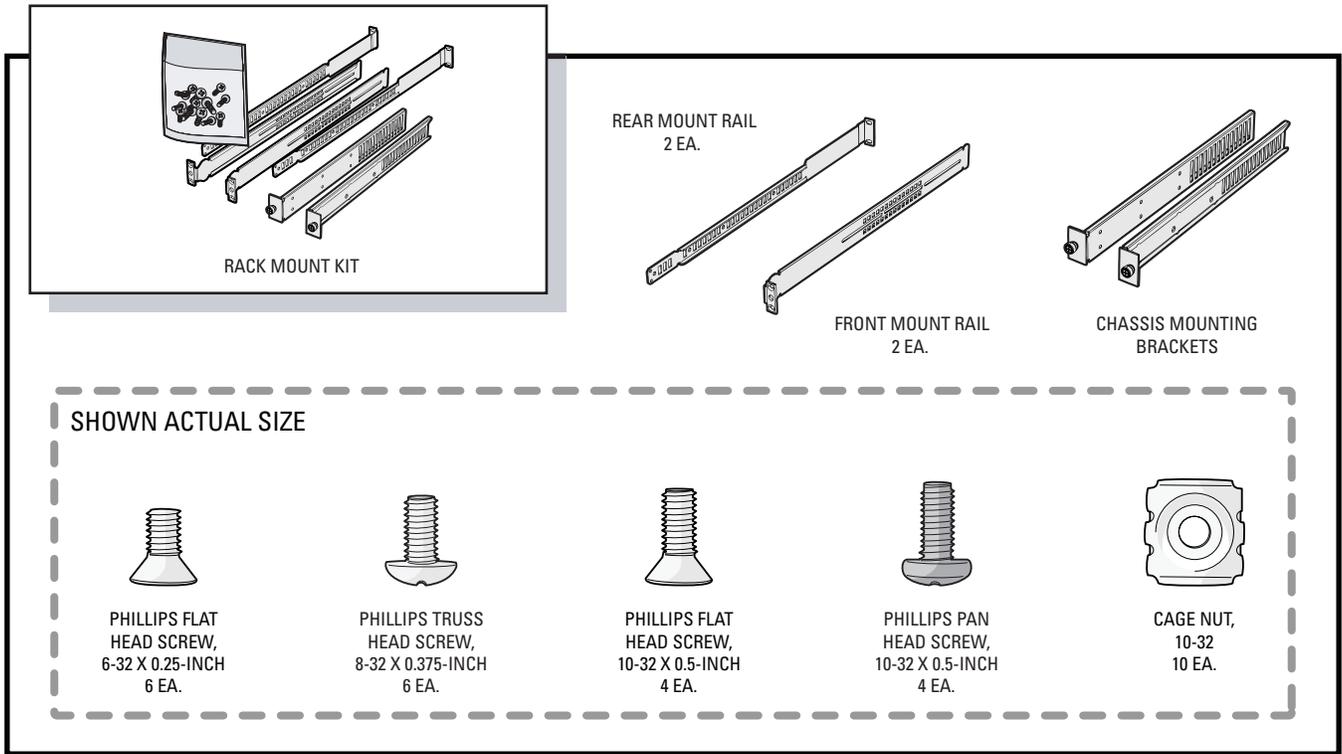


Figure 3. Rack Mount Kit

APPLICATION SCENARIO

This section illustrates one possible application scenario featuring the NET5308T multichannel video encoder. Figure 4 shows a NET5300B with two NET5308T-EXP USB multichannel video encoders. This configuration uses a single Ethernet switch.

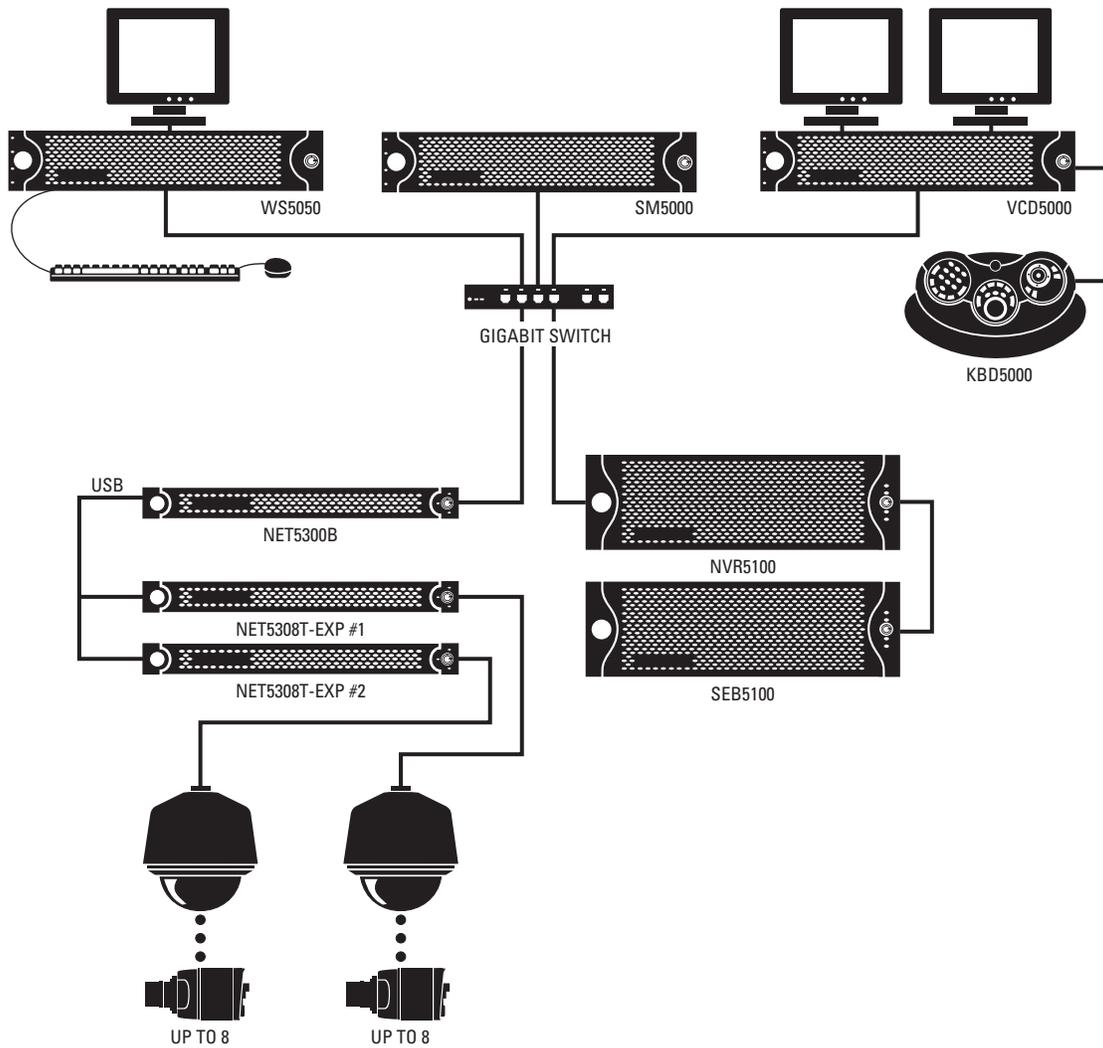


Figure 4. Security Network with One NET5300B and Two NET5308T-EXPs

IMPORTANT NOTE. PLEASE READ. The network implementations in this document are shown as general representations only and are not intended to show detailed network topologies. Your actual network will differ, requiring changes or perhaps additional network equipment to accommodate the systems as illustrated. Please contact your local Pelco representative to discuss your specific requirements.

Equipment Placement and Rack Mounting

The NET5300B can be placed on a flat surface, such as a desktop, or mounted in an equipment rack.

PRODUCT SERIAL NUMBER LABEL PLACEMENT

Product serial number labels help identify your system and its factory configuration in the event that your NET5300B or its components require service.

Two labels citing your product's serial number are attached to your NET5300B. One large label is attached to the NET5300B's rear panel. A smaller label is attached to the front panel of the unit, behind the bezel.

Because rack mounting and other installation options may obscure the factory-applied labels, a third label is provided for you to attach to your product documentation or other product location that will not be obscured by installation.

To use this label:

1. Locate the small label on the top panel of your NET5300B, attached with a yellow sticker that reads, "Extra serial number labels: remove prior to installation."
2. Remove the yellow sticker.
3. Peel away the backing of the small label and attach it to this installation manual, other product documentation, or an unobscured product location.

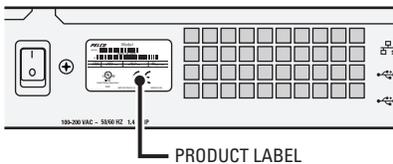


Figure 5. Product Serial Number Label

DESKTOP MOUNTING

When placing the NET5300B on a desktop, you can also place up to two NET5308T-EXP units on top of the NET5300B. (NET5308T-EXP units do not include rubber feet.)

To mount the NET5300B on a desktop:

1. Make sure the rubber feet are installed on the unit to prevent surface damage. If not, secure each rubber foot to the indicated locations on the bottom panel of the unit. Use the four 8-32 x 0.25-inch Phillips pan head screws (supplied).
2. Remove the two chassis brackets from the sides of the unit, if they are attached. Remove the 6-32 x 0.25-inch Phillips flat head screws (three per bracket). Save the brackets and screws for possible future use.
3. Position the unit to allow for cable and power cord clearance at the rear of the unit.

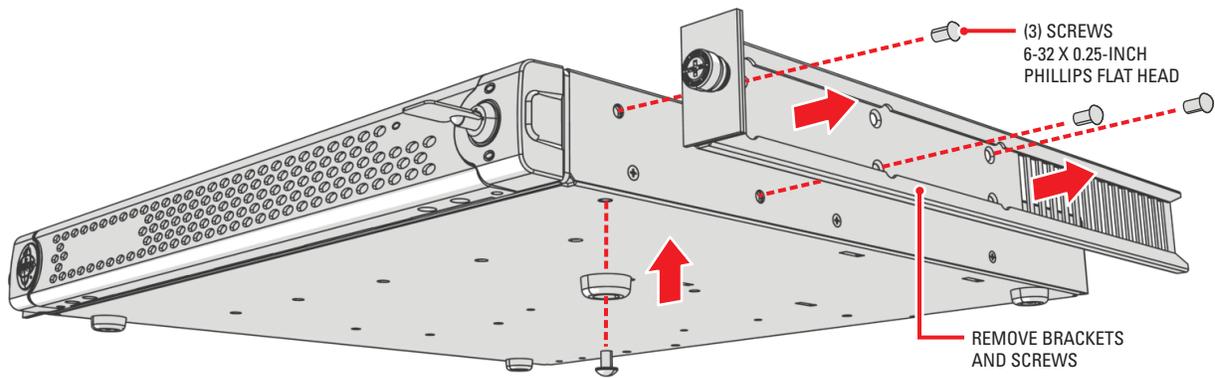


Figure 6. Installing Rubber Feet and Removing Brackets

RACK MOUNTING

The NET5300B mounts into an industry-standard 19-inch (48 cm) equipment rack. The NET5300B occupies one rack unit (1.75 in. or 4.5 cm) of vertical rack space. The hardware necessary to mount the NET5300B into a rack is supplied with the unit.

NOTE: You can also mount the NET5300B and its NET5308T-EXP units to a wall using the WM5300 wall mount. Refer to the WM5300 Wall Mount Kit Installation manual (C2663M) for more information.

The rack must meet the following requirements:

- 19-inch (48 cm) EIA-310-D compliant (rear column required).
- Rack column depth: 24 to 30 inches (61 to 76 cm).
- Column-mounting hole provisions: 10-32 UNF-2B threaded holes or square window holes on front and rear columns.
- Door systems are acceptable. Front doors must have at least 2 inches (5.1 cm) between the NET5300B front bezel and the inside of the door. Rear doors may only be used on rack columns that are more than 26 inches (66 cm) deep.

WARNINGS:

- Secure the front and rear screws to the support rails.
- Make sure the NET5300B is level.
- Slots and openings in the cabinet provide ventilation to prevent the unit from overheating. Do not block these openings. Never place the unit near or over a radiator or heat register. When placing the unit in a rack, be sure to provide proper ventilation. Allow at least one rack unit (1.75 inches or 4.44 cm) of spacing between units.

To install the NET5300B in a rack:

NOTE: Figure 3 identifies each piece of hardware for this procedure.

1. *If chassis mounting brackets are not attached:* Attach one chassis mounting bracket to each side of the NET5300B. Use three 6-32 x 0.25-inch Phillips flat head screws for each bracket.

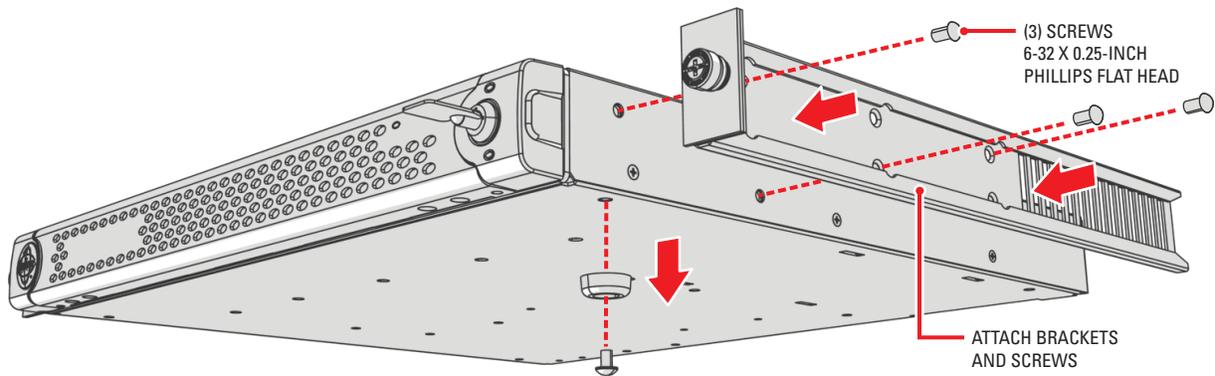


Figure 7. Attaching Chassis Mounting Brackets

2. Remove the rubber feet from the underside of the unit if they are attached.

3. Attach one front-mount rail to one rear-mount rail. Make sure the rails are mounted back to back, as shown in Figure 8. Use three 8-32 x 0.375-inch Phillips truss head screws for each rail set. Leave the screws loose until step 9.

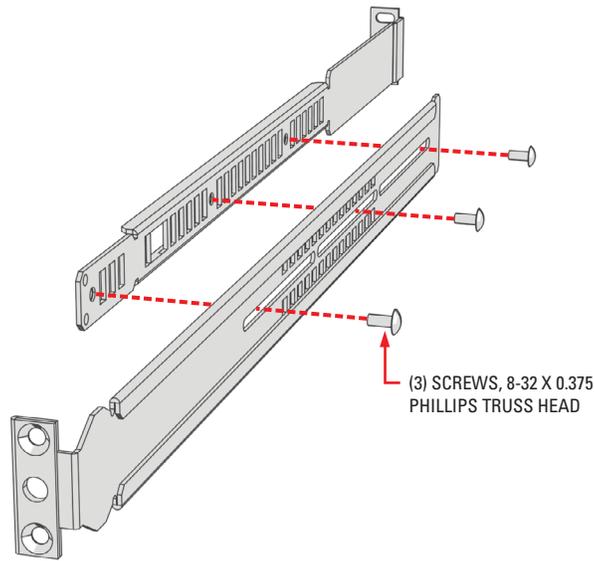


Figure 8. Assembling a Support Rail

4. Repeat step 2 for the other rail set.
5. *If you are installing the unit into a square-hole rack:* Insert 10 cage nuts into the square-hole rack as shown in Figure 9. Align the top and bottom cage nuts on the front racks with the top and bottom cage nuts on the rear racks.

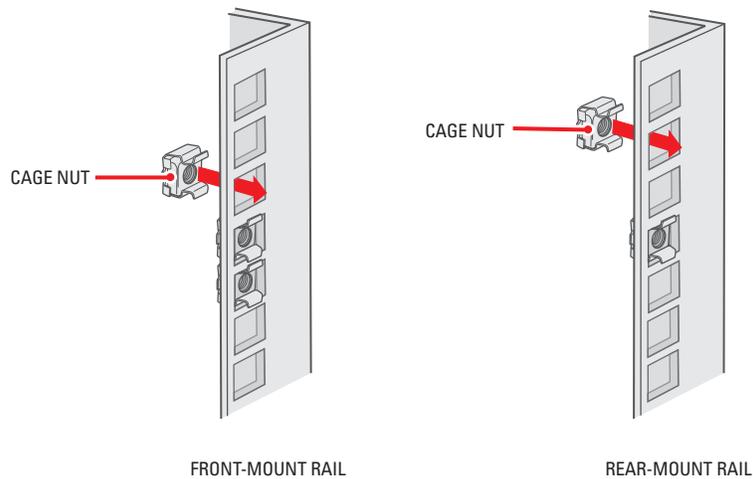


Figure 9. Inserting Cage Nuts

6. Attach one support rail assembly to the equipment rack in the desired location (refer to Figure 10):

NOTE: The support rail assemblies are identical and may be used on either the right or left side of the rack.

- a. Position the ear of the front-mount rail against the front of the equipment rack. Align the top and bottom holes in the ear of the rail with the threaded holes (or cage nuts) in the rack.
- b. Using two 10-32 x 0.5-inch Phillips flat head screws, attach the ear of the rail to the front of the rack. Insert the screws from the outside of the rack, pointing toward the back of the rack.
- c. Adjust the rails to the correct depth of the equipment rack by sliding the rear-mount rail to the back of the equipment rack.
- d. Position the ear of the rear-mount rail against the rear exterior of the equipment rack. Align the top and bottom holes in the ear of the rail section with the threaded holes (or cage nuts) in the equipment rack.
- e. Using two 10-32 x 0.5-inch Phillips pan head screws, attach the ear of the rail to the rear of the rack. Insert the screws from the outside of the rack, pointing toward the front of the rack.

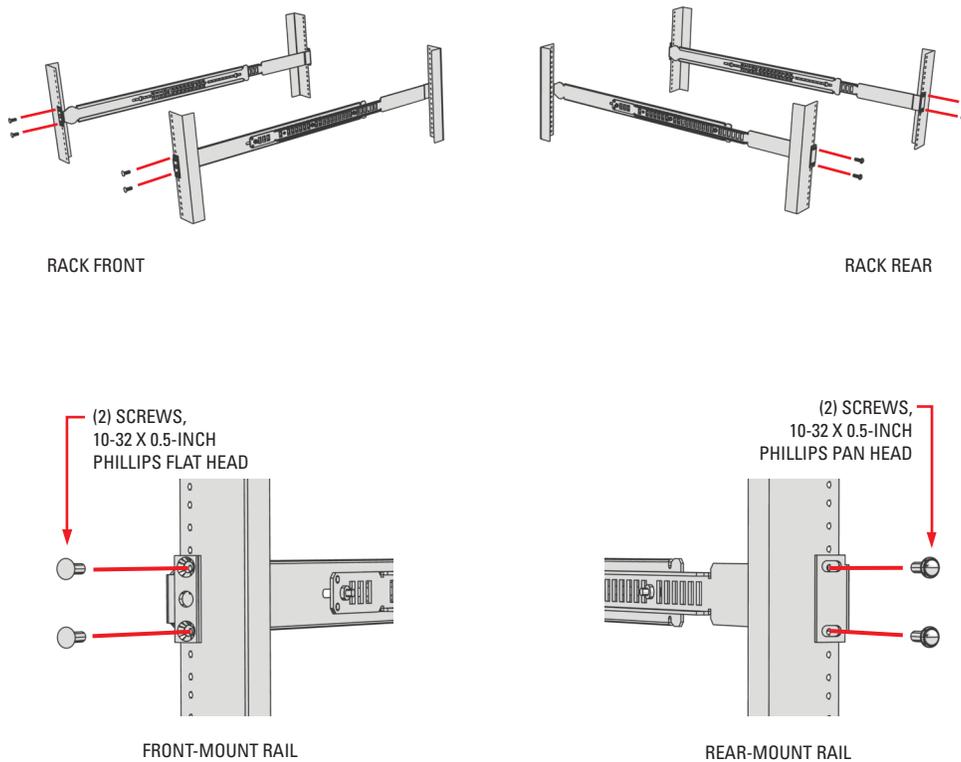


Figure 10. Attaching Support Rails

7. Repeat step 5 for the second support rail assembly.
8. Tighten the 8-32 x 0.375-inch Phillips truss head screws that were attached to the front- and rear-mount rails in steps 2 and 3.

9. Place the unit onto the mount rails by sliding the chassis brackets onto the rails. The unit should slide in and out of the rack easily.

⚠ WARNING: When sliding out the NET5300B, be careful not to let the unit fall out of the rack.

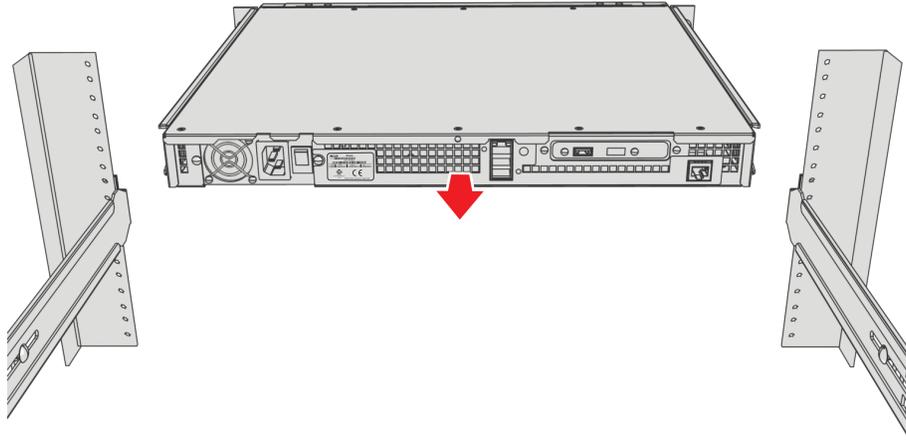


Figure 11. Mounting the NET5300B into the Rack

10. After the unit is in place, tighten the two thumbscrews to secure the unit to the rack.

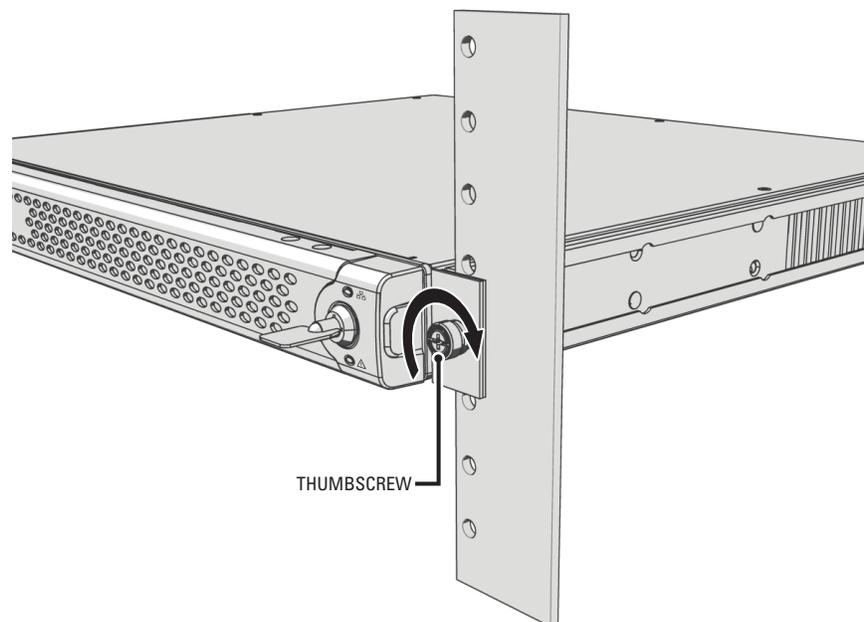


Figure 12. Tightening the Thumbscrews

Connections

Familiarize yourself with the NET5300B rear panel before connecting any equipment to the unit.

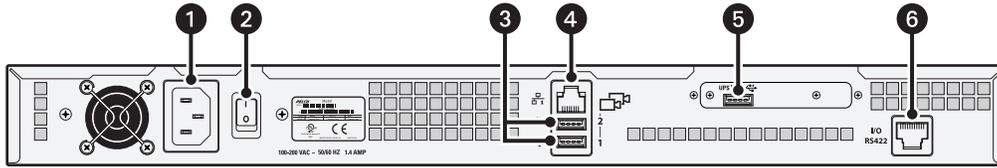


Figure 13. Rear Panel Layout

- ❶ Power Connector
 - ❷ Power Switch
 - ❸ NET5308T-EXP USB Ports
- ❹ Network Connector
 - ❺ USB 2.0 Port (for UPS)
 - ❻ Serial Camera Control Connector (RJ-45)

CONNECTING POWER

The NET5300B uses an autoranging power supply that automatically adapts to voltages between 100 VAC and 240 VAC (50/60 Hz).

You should also install an uninterruptible power supply (UPS) (not supplied). UPS devices maintain a limited amount of backup battery power in case the main power fails. Refer to *Appendix A: Installing an Uninterruptible Power Supply (UPS)* on page 25 for more information.

Connect one of the supplied US, European, or UK standard power cords to rear of the unit, and then connect each cord to the appropriate power source:

1. Connect one power cord to the back of the NET5300B.
2. Connect the other end of this power cord to the appropriate power source.

NOTE: Do not power up any NET5300B system component (NET5308T-EXP, network, camera control) until you have connected all components.

CONNECTING NET5308T-EXP VIDEO ENCODERS

You can connect up to two NET5308T-EXP video encoders to the NET5300B base module. This gives the NET5308T a maximum capacity of 16 inputs.

NOTES:

- Before connecting a NET5308T-EXP to the NET5300B, make sure power is off to the NET5308T-EXP.
- Do not power up any NET5300B system component (NET5308T-EXP, network, camera control) until you have connected all components.

Two of the three USB ports on the NET5300B rear panel correspond to a specific set of video inputs (refer to Table A on this page and Figure 14 on page 18). Each NET5300B includes two different colored USB cables and a matching set of colored stickers. Use them on the NET5308T-EXP to match each NET5308T-EXP to its specific video inputs.

Table A. NET5300B/NET5308T-EXP USB Connectors and Colors

NET5300B USB Port	Video Inputs	NET5308T-EXP	USB Cable Color
1	1-8	#1	Red
2	9-16	#2	Yellow

NOTES:

- The USB ports on the NET5300B rear panel are numbered from bottom to top. Port 1 is at the bottom; port 2 is at the top.
- Connecting a NET5308T-EXP to USB port 1 assigns camera numbers 1 through 8 to the video inputs on that NET5308T-EXP.

To connect an NET5308T-EXP to the NET5300B base module:

1. Select the USB cable (red or yellow) that corresponds to the video inputs. Two different colored USB cables are included with each NET5300B.
2. Connect the narrow "B" connector of the USB cable to the USB connector on the NET5308T-EXP rear panel.
3. Apply a matching colored sticker (red or yellow) next to the USB connector on the NET5308T-EXP rear panel. This identifies the USB cable (red or yellow) that should be connected to this NET5308T-EXP.
4. Connect the wide "A" connector of the USB cable to the corresponding USB connector on the NET5300B rear panel.
5. Apply a matching colored sticker (red or yellow) next to the USB connector on the NET5300B rear panel. This identifies the USB cable (red or yellow) that should be connected to this NET5308T-EXP.

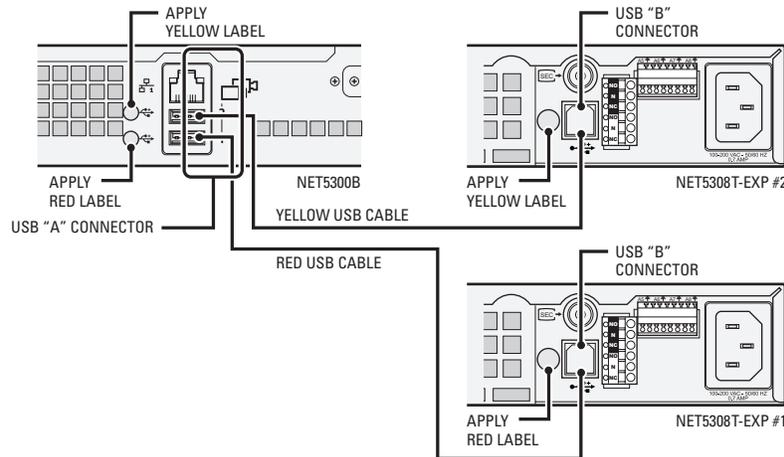


Figure 14. Connecting NET5308T-EXPs to a NET5300B

6. Repeat steps 1 through 5 for the other NET5308T-EXP (if necessary).

When the NET5308T-EXPs are first powered up, their unit status lights blink green until the NET5300B recognizes them and puts them into service.

CONNECTING TO THE NETWORK

The NET5300B base module supports remote administration from a WS5050 Endura workstation. The NET5300B is compatible with the entire family of Endura-ready devices using TCP/IP and UPnP protocols. Consult your network administrator before installing the NET5300B to avoid possible network conflicts.

The NET5300B offers a single network connector on the rear panel. Use this gigabit Ethernet adapter port to connect the NET5300B to the Endura network. This is required for Endura operation.

NOTE: For best results, you should only implement an Endura system on a 1000BaseT network. Unless the Endura installation is very small with a dedicated Endura network, a 100BaseT network will not support the necessary data throughput requirements.

Refer to the Endura Network Design Guide (C1640M) for details on designing and implementing an Endura network.

To connect the NET5300B to the Endura network using a switched gigabit Ethernet network:

1. Connect one end of a UTP cable to the network connector on the NET5300B rear panel. Use standard Cat5e or better unshielded twisted pair (UTP) cable with RJ-45 connectors.

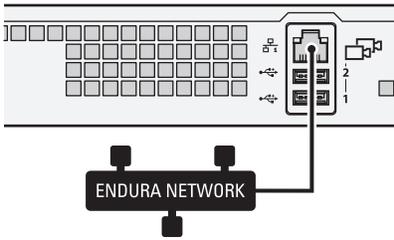


Figure 15. Network Cable Connection

2. Connect the other end of the UTP cable to an available port on a Pelco-approved gigabit Ethernet switch. Contact Pelco's Product Support for a list of approved gigabit Ethernet switches.

There are two indicators on the network connector on the rear panel. The right indicator glows orange when there is a good connection between the NET5300B and a gigabit Ethernet switch that is powered up. If the indicator does not glow, check the cable and the switch. Disregard the left indicator, which shows network activity.

NOTE: Do not power up any NET5300B system component (NET5308T-EXP, network, camera control) until you have connected all components.

CONNECTING SERIAL PTZ DEVICES

NOTE: Pelco recommends using the Coaxitron up-the-coax camera control protocol, which simplifies installation and does not require any additional equipment. For information on implementing Coaxitron on the NET5308T, refer to the NET5308T-EXP Installation manual (C2655M).

The NET5300B supports Pelco D (four-wire) and Pelco P (two-wire) protocols. These protocols use a serial interface to transmit commands to the PTZ device over separate control wires. When the NET5300B receives a camera control command, it transmits that command to the PTZ device. The system continues receiving video over the coaxial cable through the NET5308T-EXP.

You can install multiple camera control lines using either of the following:

- Star configuration: In this configuration, run all control lines from each device to a CM9760-CDU-T code distribution unit in a central location. Then connect the CDU to the NET5300B. The maximum length for each pair of control lines is 4,000 ft (1,219 m). The CDU only supports two-wire (unidirectional) operation for Pelco D and Pelco P.
- Daisy-chain (direct): In this configuration, run control lines from the NET5300B to the first device, then from the first to the second device, and so on until the end of the line. The maximum distance from the NET5300B to the last device is 4,000 ft (1,219 m). This configuration does not require a separate piece of equipment, but it may be more susceptible to interference, individual PTZ device failures, or other problems.

⚠ WARNING: Pelco recommends using the star configuration for serial PTZ operation. Using the daisy-chain configuration may cause unexpected results, especially if you install up to 16 devices or use the full 4,000 ft (1,219 m) distance.

NOTES:

- When using serial PTZ devices, do not mix protocols on the same control chain.
- All serial PTZ devices require at least two wires (RX+ and RX-). If a device is bidirectional, you have to run two additional wires to the device (TX+ and TX-).

To connect serial PTZ devices to a NET5300B using a star configuration (refer to Figure 16):

1. Connect twisted pair wiring from the RX+ and RX- on each PTZ device to the TX+ and TX- leads on a specific channel on the CM9760-CDU-T (refer to the CM9760-CDU-T Installation/Operation manual [C1940M]). The maximum length is 4,000 ft (1,219 m).

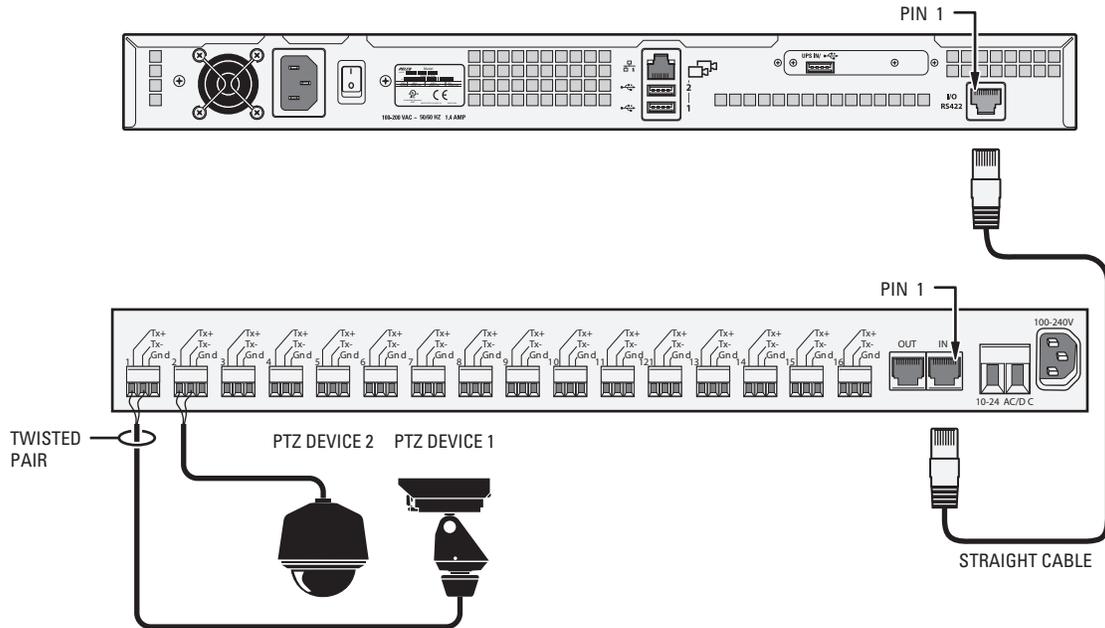


Figure 16. Star (CM9760-CDU-T) Connections

2. Connect either end of the enclosed STRAIGHT cable to the connector labeled I/O RS422 on the NET5300B rear panel. The STRAIGHT cable is 6 ft (1.8 m) long and has a black STRAIGHT label.

NOTES:

- Do NOT use the enclosed REVERSE cable to connect the NET5300B to the CM9760-CDU-T. Also, do NOT use the REVERSE cable that is included with the CM9760-CDU-T.
- To create your own cable, refer to Table B and Figure 17 for the RJ-45 pin assignments for both the NET5300B and the CM9760-CDU-T. The maximum cable length from the NET5300B to the CDU is 4,000 ft (1,219 m).

Table B. RJ-45 Pin Assignments to CM9760-CDU-T

NET5300B		...connects to...	CM9760-CDU-T	
Pin	Lead		Pin	Lead
1	RX+		1	TX+
2	RX-		2	TX-
3-6	Reserved		3-6	Reserved
7	TX-		7	RX-
8	TX+		8	RX+

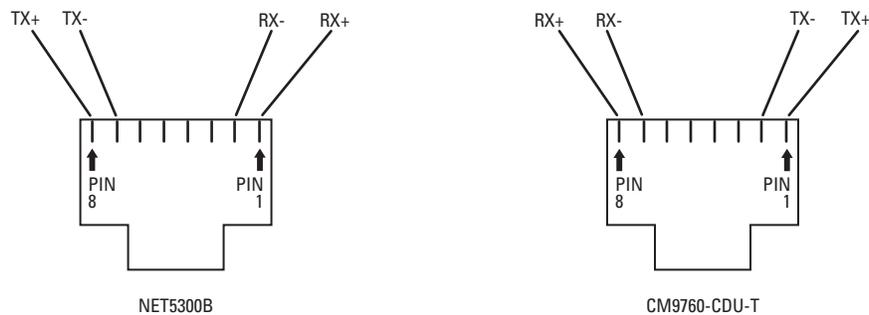


Figure 17. RJ-45 Pin Assignments to CM9760-CDU-T

3. Connect the other end of the straight cable to the IN connector on the CM9760-CDU-T.
4. Use the WS5050 Endura workstation to enable each PTZ device on its specific video input.

To connect serial PTZ devices to a NET5300B using a daisy-chain configuration (refer to Figure 18):

NOTE: Do not exceed the 4,000 ft (1,219 m) maximum distance from the NET5300B to the last device on the daisy chain, including the 10 ft (3 m) for the REVERSE cable.

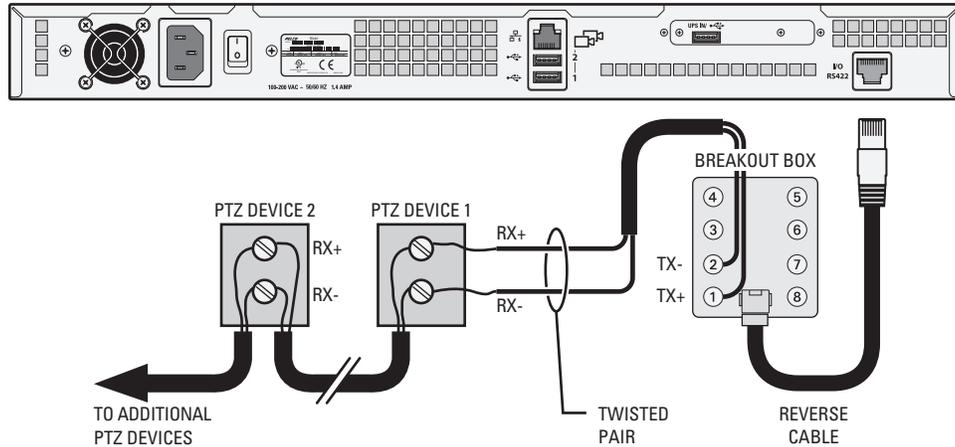


Figure 18. Daisy-Chain (Direct) Connections

1. Use twisted pair wiring to connect the serial control for all PTZ devices together in a string. That is, connect the RX+ and RX- on the first device the RX+ and RX-, respectively, on the second device, and so on.
2. Enable serial termination on the last device in the daisy chain. Disable serial termination on all other devices in the chain. (For more information, refer to the documentation for each serial PTZ device.)
3. Connect the two wires from the daisy chain to the breakout box:
 - Connect RX+ from the daisy chain to terminal 1 (TX+).
 - Connect RX- from the daisy chain to terminal 2 (TX-).
4. Connect either end of the enclosed REVERSE cable to the connector labeled I/O RS422 on the NET5300B rear panel. The REVERSE cable is 10 ft (3 m) long and has a red REVERSE label.

NOTE: Do NOT use the enclosed STRAIGHT cable to connect the NET5300B to the breakout box.

5. Connect the other end of the REVERSE cable to the connector on the breakout box.
6. Use the WS5050 Endura workstation to enable each PTZ device on its specific video input.

POWERING UP THE NET5300B SYSTEM

After you have connected all NET5300B system components, power up the NET5300B system:

1. Power up the NET5308T-EXPs (refer to the NET5308T-EXP Installation manual [C2655M] for more information).
2. Power up the CM9760-CDU-T if necessary (refer to the CM9760-CDU-T Installation/Operation manual [C1940M] for more information).
3. Turn on the rear panel power switch (if necessary).
4. Power up the NET5300B (refer to *Unit Startup* on page 24).

Operation

Refer to the WS5000 operation manual (C1624M) for details on how to access and configure the NET5300B.

NOTE: To make sure that all diagnostic messages will appear to a system operator, leave at least one WS5050 Endura workstation or VCD5000 video console display running at all times.

During operation, monitor the unit status and power supply indicator lights to make sure that all drives are operating properly. In case of failure, system alarms and error messages will also display on WS5050 Endura workstations and VCD5000 video console displays (refer to *Appendix C: Troubleshooting* on page 27).

FRONT PANEL CONTROLS AND INDICATORS

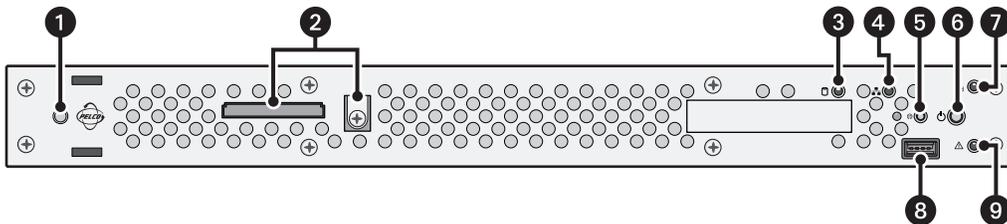


Figure 19. Front Panel Layout (Without Bezel)

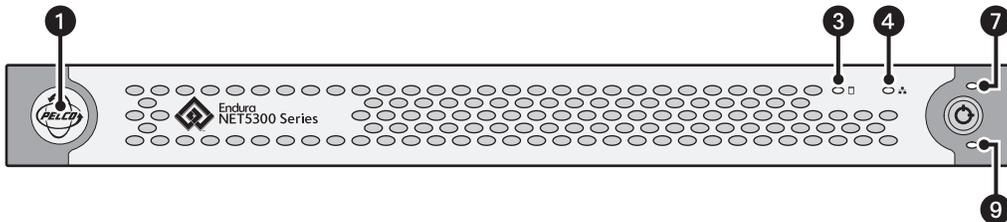


Figure 20. Front Bezel Indicators

- | | |
|----------------------------------------------|------------------------------|
| 1 Pelco Badge (power) | 5 Configuration/Reset Button |
| 2 Operating System Drive with Security Screw | 6 Power Button |
| 3 CPU Activity | 7 Network Activity |
| 4 Network Status | 8 USB 2.0 Port (Reserved) |
| | 9 Unit Status |

Pelco badge (power)

The Pelco badge glows blue when the unit has power. If the front bezel is open, this indicator glows white.

CPU activity

The CPU activity indicator flashes yellow anytime there is processing activity on the NET5300B. It is dark anytime there is no processing activity.

Network status

Network status (connection and speed) is indicated by one of the following conditions:

- | | |
|--------------------|--------------------------------------------------------------------|
| Off | The unit is not connected to the network. |
| Solid Green | The unit is connected to the network using the 1000BaseT standard. |
| Solid Amber | The unit is connected to the network using the 100BaseT standard. |
| Solid Red | The unit is connected to the network using the 10BaseT standard. |

NOTE: For proper operation, you must use the 1000BaseT standard.

Network activity

The network activity indicator flashes green whenever the unit is sending or receiving data over the network. The indicator is dark when there is no network activity present or when a link has been terminated.

Unit status

Unit status is indicated by one of the following three colors:

- Green** The unit is functioning normally.
- Amber** The unit is in configuration mode.
- Red** The unit is in an error condition (refer to *Appendix C: Troubleshooting* on page 27).

If the unit status indicator is flashing, the unit is in one of three modes (refer to Table C).

Power button

Use the power button to turn the unit on and off (refer to *Unit Startup* and *Unit Shutdown* on page 24).

Configuration/Reset button

Use the recessed configuration/reset button on the right edge of the front panel to access the following modes:

Table C. Configuration/Reset Button Functions and Indicators

Mode	Function	Unit Status Indicator Light
Configuration	(Not implemented.)	<ul style="list-style-type: none">• Flashing amber when entering this mode
Reboot	Restarts the unit.	<ul style="list-style-type: none">• Flashing green when entering this mode• Solid green when selected
Reset	Resets the unit to factory default settings and schedule. Then restarts the unit. Does not erase any video data.	<ul style="list-style-type: none">• Flashing red when entering this mode• Solid red when selected
Cancel	Cancels any configuration or reset action.	<ul style="list-style-type: none">• No light

To access one of these modes:

1. Unlock and open the bezel cover.
2. Press and hold the configuration/reset button. The unit starts cycling through the four modes (configuration, reboot, reset, and cancel), holding each mode for five seconds. The unit status indicator flashes the color for the current mode.
3. When the color of the desired mode appears, release the button.

UNIT STARTUP

To start the unit:

1. Unlock and open the bezel cover. Be careful not to drop the bezel cover; it is not attached directly to the unit.
2. Turn on the rear panel power switch (if necessary).
3. Press the power button. The power indicator glows.
4. Close and lock the bezel cover.

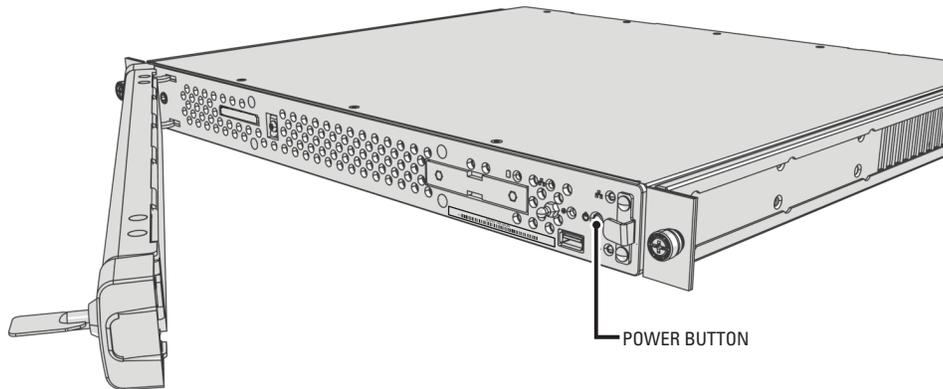


Figure 21. Opening the Front Bezel Cover

UNIT SHUTDOWN

You can shut down the NET5300B in either of two ways.

An orderly shutdown lets the unit close its files and power down without affecting the data files. Use the orderly shutdown in most cases.

An immediate shutdown is the same as disconnecting power. This option is not recommended; only use it in an emergency or when there is not enough time for an orderly shutdown.

To shut down the unit:

1. Unlock and open the bezel cover. Be careful not to drop the bezel cover; it is not attached directly to the unit.
2. Select one of the following:
 - For an orderly shutdown, quickly press and release the power button.
 - For an immediate shutdown, press and hold the power button until the unit shuts down.
3. Close and lock the bezel cover.

Appendix A: Installing an Uninterruptible Power Supply (UPS)

You should connect each NET5300B base module to an uninterruptible power supply (UPS) (not supplied). UPS devices maintain a limited amount of backup battery power in case the main power fails. The UPS should have a minimum rating of 200 VA for one NET5300B and two NET5308T-EXP units.

Nearly any UPS device can be used to supply backup battery power. However, the NET5300B is designed for use with intelligent UPS devices.

An intelligent UPS device can communicate with the NET5300B. If a power failure occurs, the UPS signals the NET5300B to execute its shutdown procedure within a certain time frame. When the NET5300B shuts down in an orderly manner, data integrity is maintained.

Currently, the NET5300B only supports the following intelligent UPS devices:

- APC® Smart-UPS® with USB connection

Contact Pelco's Product Support for more information.

Each intelligent UPS device should be configured to shut down its corresponding NET5300B safely during an extended period on battery power.

NOTE: These instructions give general guidelines for connecting an intelligent UPS device to the NET5300B. Refer to the instructions that came with your UPS to make sure you install the device properly.

These instructions give general guidelines for connecting a UPS device to the NET5300B. Refer to the instructions that came with your UPS to make sure you install the device properly.

To connect communication and power from the UPS to the NET5300B (refer to Figure 22):

1. Shut down the NET5300B (refer to *Unit Shutdown* on page 24).
2. *If you are installing an intelligent UPS:* Connect a standard USB cable to an open USB port on the UPS device.
3. *If you are installing an intelligent UPS:* Connect the other end of the USB cable to the indicated USB port on the rear panel of the NET5300B.
4. Connect a power cord from the UPS to a standard wall socket or other power source.
5. Connect a power cord from the UPS to the power connector on the rear panel of the NET5300B.
6. Power up the UPS device.
7. Power up the NET5300B (refer to *Unit Startup* on page 24).

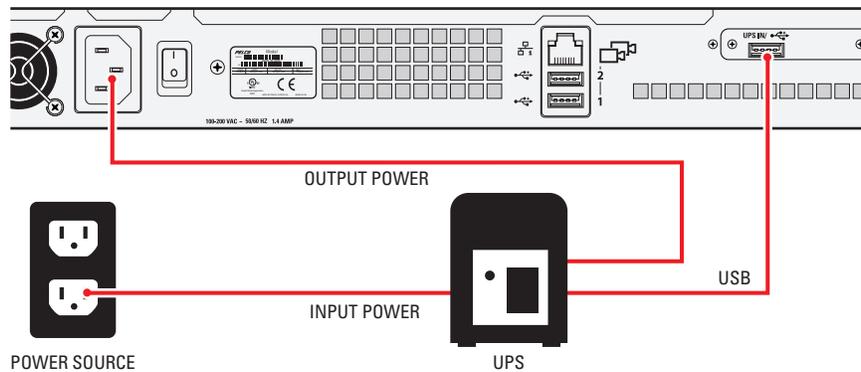


Figure 22. Connecting a UPS to a NET5300B

Appendix B: Replacing the Operating System Drive

The NET5300B uses a compact flash drive for the unit operating system. In addition to greater reliability, this drive can be easily replaced if a failure occurs.

NOTES:

- You must shut down the unit to replace the operating system drive.
- The unit uses a hex button socket security screw to prevent tampering. This procedure requires the enclosed operating system drive security tool.

Contact Pelco for the new operating system drive.

To replace the operating system drive (refer to Figure 23):

1. Shut down the NET5300B (refer to *Unit Shutdown* on page 24).
2. Use the security tool to disengage the drive latch on the front panel. The latch is spring loaded and pops out about 0.25 inches (6 mm). The security screw is attached to the latch and cannot be removed.
3. Gently pull the latch away from the front panel. The drive disengages from its slot.
4. Remove the drive from the unit.
5. Orient the new drive and insert it into the slot.
6. Use the security tool to engage and tighten the latch on the front panel.
7. Power up the NET5300B (refer to *Unit Startup* on page 24).

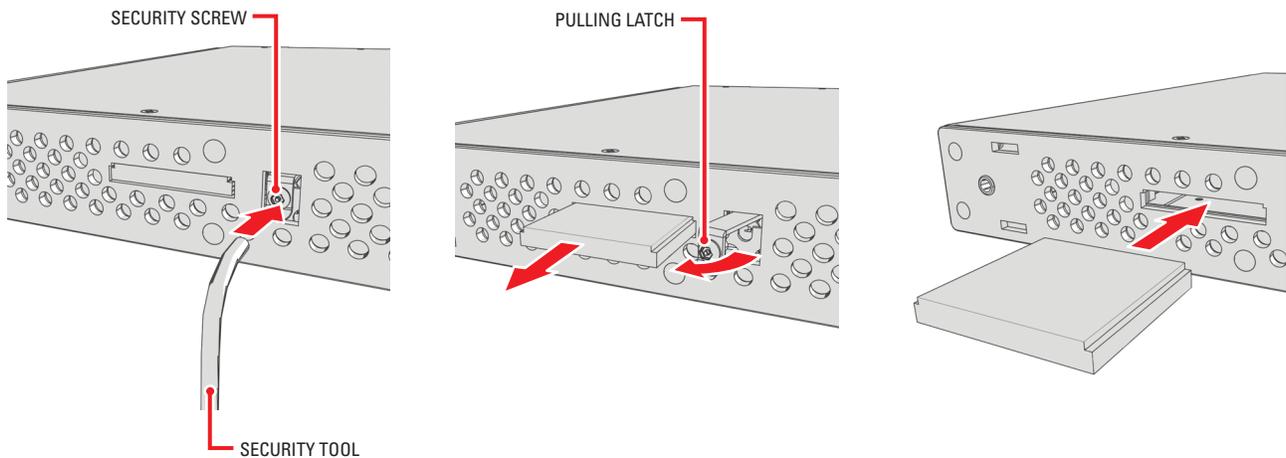


Figure 23. Replacing the Operating System Drive

Appendix C: Troubleshooting

If the following instructions fail to solve your problem, contact Pelco's Product Support at 1-800-289-9100 or 1-559-292-1981 for assistance.

Access the properties dialog boxes for the NET5300B base module on the WS5050 Endura workstation (refer to the WS5000 operation manual [C2624M]). Then note the following before calling Pelco:

- Unit serial number: located in the Properties window, or on the product label
- Software version: located in the Advanced Properties window

 **WARNING:** Do not try to repair the unit yourself. Opening it immediately voids any warranty. Leave maintenance and repairs to qualified technical personnel. Exchange the defective unit and return it for repair.

Table D. Troubleshooting the NET5300B

Problem	Possible Causes	Suggested Remedy
Unit not ready	Power turned off	Check that the power indicator is lit.
	Faulty cable connections	Check all leads, plugs, contacts, and connections.
	Defective encoder	Check camera on a different encoder.
	Network connectivity issues	Contact your network administrator.
The unit is not ready for operation after firmware upload	Voltage failure during programming of update file	Replace the NET5300B and have it checked by Pelco.
Unit status indicator is red	Unit fan failure	Replace the NET5300B and have it checked by Pelco.
	Power supply output voltage fluctuates more than 8%	Check power supply and line voltage.

The system status indicator continues to glow red after you correct the problem. It can be cleared from WS5050 Endura workstations and VCD5000 video console displays.

Specifications

VIDEO/AUDIO

Video Standards	NTSC/PAL/EIA/CCIR composite	
Video Compression	MPEG-4	
Video Streams	2, simultaneous per input	
Video Resolutions	<u>NTSC</u>	<u>PAL</u>
4CIF	704 x 480	704 x 576
2CIF	704 x 240	704 x 288
CIF	352 x 240	352 x 288

NETWORK

Interface	1 gigabit Ethernet RJ-45 ports (1000BaseT)
Security	2 modes: secure mode (device authentication) and unsecure mode

AUXILIARY INTERFACES

USB 2.0	3 high-speed USB 2.0 ports on rear of unit
Camera Control	1 RJ-45 connector; connects NET5300B to CM9760-CDU-T; Pelco D/Pelco P

FRONT PANEL INDICATORS/FUNCTIONS

Power	Blue
CPU Activity	Yellow
Network Activity	Green
Network Status	Green, amber, red
Unit Status	Green, amber, red
Power Button	On, off (soft), off (hard)
Configuration/Reset Button	Configuration, reboot, reset, cancel

POWER

Power Input	100-240 VAC, 50/60 Hz, 0.7 A, autoranging
Cable Type	1 USA (117 VAC), 1 European (220 VAC), 1 UK (250 VAC) All, 3 prongs, molded connector, 6 ft (1.8 m) cord
Power Consumption (maximum)	40 W, 137 BTU/H
Uninterruptible Power Supply (UPS)	Compatible with APC Smart-UPS; managed through the Endura product architecture

ENVIRONMENTAL

Ambient Temperature	70° to 74°F (21° to 23°C)
Operating Temperature	50° to 113°F (10° to 45°C) (at unit air intake)
Storage Temperature	-40° to 149°F (-40° to 65°C)
Operating Humidity	20% to 80%, noncondensing
Maximum Humidity Gradient	10% per hour
Operating Altitude	-50 ft to 10,000 ft (-16 m to 3,048 m)
Operating Vibration	0.25 G at 3 Hz to 200 Hz at a sweep rate of 0.5 octave/minute

PHYSICAL

Construction	Steel cabinet
Finish	Bezel: gray metallic with black end caps Chassis: black matte finish
Dimensions	16.7" (D) x 17.0" (W) x 1.7" (H) (42.4 x 43.2 x 4.3 cm)
Unit Weight	13.35 lb (6.1 kg)
Mounting	Desktop (feet) Rack, 1 RU per unit (Rack ears and screws provided)

STANDARDS/ORGANIZATIONS

- Pelco is a member of the MPEG-4 Industry Forum
- Pelco is a member of the Universal Plug and Play (UPnP) Forum
- Pelco is a member of the Universal Serial Bus (USB) Implementers Forum
- Pelco is a contributor to the International Standards for Organization/Electrotechnical Commission (ISO/IEC) Joint Technical Committee 1 (JTC1), "Information Technology," Subcommittee 29, Working Group 11
- Compliance, ISO/IEC 14496 standard (also known as MPEG-4)
- Compliant with International Telecommunication Union (ITU) Recommendation G.711, "Pulse Code Modulation (PCM) of Voice Frequencies"

(Design and product specifications subject to change without notice.)

PRODUCT WARRANTY AND RETURN INFORMATION

WARRANTY

Pelco will repair or replace, without charge, any merchandise proved defective in material or workmanship **for a period of one year** after the date of shipment.

Exceptions to this warranty are as noted below:

- Five years on FR/FT/FS Series fiber optic products and TW3000 Series unshielded twisted pair transmission products.
- Three years on Spectra® IV products.
- Three years on Genex® Series products (multiplexers, server, and keyboard).
- Three years on Camclosure® and fixed camera models, except the CC3701H-2, CC3701H-2X, CC3751H-2, CC3651H-2X, MC3651H-2, and MC3651H-2X camera models, which have a five-year warranty.
- Three years on PMCL200/300/400 Series LCD monitors.
- Two years on standard motorized or fixed focal length lenses.
- Two years on Legacy®, CM6700/CM6800/CM9700 Series matrix, and DF5/DF8 Series fixed dome products.
- Two years on Spectra III™, Esprit®, ExSite™, and PS20 scanners, including when used in continuous motion applications.
- Two years on Esprit and WW5700 Series window wiper (excluding wiper blades).
- Two years (except lamp and color wheel) on Digital Light Processing (DLP®) displays. The lamp and color wheel will be covered for a period of 90 days. The air filter is not covered under warranty.
- Eighteen months on DX Series digital video recorders, NVR300 Series network video recorders, and Endura™ Series distributed network-based video products.
- One year (except video heads) on video cassette recorders (VCRs). Video heads will be covered for a period of six months.
- Six months on all pan and tilts, scanners or preset lenses used in continuous motion applications (that is, preset scan, tour and auto scan modes).

Pelco will warrant all replacement parts and repairs for 90 days from the date of Pelco shipment. All goods requiring warranty repair shall be sent freight prepaid to Pelco, Clovis, California. Repairs made necessary by reason of misuse, alteration, normal wear, or accident are not covered under this warranty.

Pelco assumes no risk and shall be subject to no liability for damages or loss resulting from the specific use or application made of the Products. Pelco's liability for any claim, whether based on breach of contract, negligence, infringement of any rights of any party or product liability, relating to the Products shall not exceed the price paid by the Dealer to Pelco for such Products. In no event will Pelco be liable for any special, incidental or consequential damages (including loss of use, loss of profit and claims of third parties) however caused, whether by the negligence of Pelco or otherwise.

The above warranty provides the Dealer with specific legal rights. The Dealer may also have additional rights, which are subject to variation from state to state.

If a warranty repair is required, the Dealer must contact Pelco at (800) 289-9100 or (559) 292-1981 to obtain a Repair Authorization number (RA), and provide the following information:

1. Model and serial number
2. Date of shipment, P.O. number, Sales Order number, or Pelco invoice number
3. Details of the defect or problem

If there is a dispute regarding the warranty of a product which does not fall under the warranty conditions stated above, please include a written explanation with the product when returned.

Method of return shipment shall be the same or equal to the method by which the item was received by Pelco.

RETURNS

In order to expedite parts returned to the factory for repair or credit, please call the factory at (800) 289-9100 or (559) 292-1981 to obtain an authorization number (CA number if returned for credit, and RA number if returned for repair).

All merchandise returned for credit may be subject to a 20% restocking and refurbishing charge.

Goods returned for repair or credit should be clearly identified with the assigned CA or RA number and freight should be prepaid. Ship to the appropriate address below.

If you are located within the continental U.S., Alaska, Hawaii or Puerto Rico, send goods to:

Service Department
Pelco
3500 Pelco Way
Clovis, CA 93612-5699

If you are located outside the continental U.S., Alaska, Hawaii or Puerto Rico and are instructed to return goods to the USA, you may do one of the following:

If the goods are to be sent by a COURIER SERVICE, send the goods to:

Pelco
3500 Pelco Way
Clovis, CA 93612-5699 USA

If the goods are to be sent by a FREIGHT FORWARDER, send the goods to:

Pelco c/o Expeditors
473 Eccles Avenue
South San Francisco, CA 94080 USA
Phone: 650-737-1700
Fax: 650-737-0933

 **Green** The materials used in the manufacture of this document and its components are compliant to the requirements of Directive 2002/95/EC.



This equipment contains electrical or electronic components that must be recycled properly to comply with Directive 2002/96/EC of the European Union regarding the disposal of waste electrical and electronic equipment (WEEE). Contact your local dealer for procedures for recycling this equipment.

REVISION HISTORY

Manual #	Date	Comments
C2614M	12/06	Original version.

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