TW3008AR-4
Active Receiver

Eight Channels for UTP Transmission

C1668M (8/06)

Important Safety Instructions

1. Read these instructions.

2. Keep these instructions.

3. Heed all warnings.

4. Follow all instructions.

5. Do not use this apparatus near water.

6. Clean only with dry cloth.

7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.

8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.

9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet consult an electrician for replacement of the obsolete outlet.

10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the points where they exit from the apparatus.

11. Only use attachments/accessories specified by the manufacturer.

12. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

13. Apparatus shall not be exposed to dripping or splashing and that no objects filled with liquids, such as vases shall be placed on the apparatus.

14. **WARNING:** To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.

15. Installation should be done only by qualified personnel and conform to all local codes.

16. Unless the unit is specifically marked as a NEMA Type 3, 3R, 3S, 4, 4X, 6, or 6P enclosure, it is designed for indoor use only and it must not be installed where exposed to rain and moisture.

17. Use only installation methods and materials capable of supporting four times the maximum specified load.

18. A CCC-approved power cord must be used to power this equipment when used in China.

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.

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.

Description

The TW3008AR-4 is an eight-channel active receiver that can receive live video over unshielded twisted pair (UTP) cable.

The adaptive technology in the TW3008AR-4 automatically adjusts the low, medium and high frequency components of the video signal allowing for the best possible video transmission. The adaptive technology eliminates the need for manual adjustment by automatically adjusting to provide the most favorable video transmission depending on cable length needed. The unit has been optimized for use with Cat5e and Cat6 cable, although Cat3 and Cat5 cable can be used for shorter distances.

The front of the receiver has dials and LEDs for each of the eight channels. The dials are used for selecting the cable distance. You can leave the dial on auto (default adaptive technology) or manually select 1,000 feet (305 meters), 2,000 feet (610 meters), 3,000 feet (914 meters), or 4,000 feet (1,219 meters). The LEDs light green when UTP video is being received and red when no UTP video is being received. A flashing amber LED means that there are Coaxitron® pan/tilt/zoom (PTZ) control commands being transmitted.

The back of the receiver has four BNC connectors for each channel and one UTP connector for each channel. Only BNC A of each channel can be used for Coaxitron control. The other BNC connectors are for connecting to other equipment, such as monitors and DVRs. The back of the unit also has a 5 mm barrel power connector and a 6-pin Molex® power connector. The barrel connector is for desktop use and the 6-pin Molex connector can be used in a multi-unit installation with the optional EPS5000-120TW rack-mountable external power supply.

Customers in the United States, United Kingdom, Europe, and Australia will receive one of the following power cords: US-320-C13, UK-320-C13, EU-320-C13, and AU-320-C13.

The following features are found on the TW3008AR-4:

- Full motion color/black-white video up to 4,000 feet (1,219 meters) with Cat5e or Cat6

- Supports Coaxitron control (PTZ control signals) up to 750 feet (229 meters)

- Compatible with all Pelco twisted pair equipped cameras, enclosures, and domes

- Built-in surge suppression

- Each channel has four BNC connectors for video output

- Easy termination with a removable UTP connector for each channel

- Supports NTSC, PAL, and SECAM

- Power supply with an IEC 320-C13 socket for interchangeable AC power cords (either US, UK, EU, AU)

- Can be mounted into a standard EIA 19-inch rack

MODELS

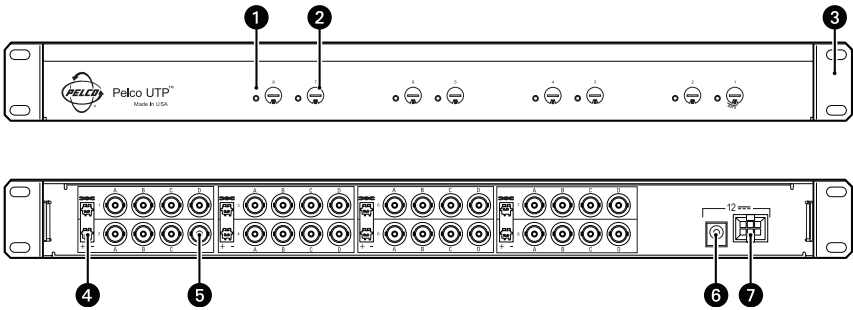|	
TW3008AR-4-US	Eight-channel active receiver with power cord for use in the United States
TW3008AR-4-UK	Same as TW3008AR-4-US except with power cord for use in the United Kingdom, Ireland, and Hong Kong
TW3008AR-4-AU	Same as TW3008AR-4-US except with power cord for use in Australia and New Zealand
TW3008AR-4-EU	Same as TW3008AR-4-US except with power cord for use in most of continental Europe

PARTS OF THE RECEIVER

Figure 1. TW3008AR-4 Parts

1 Status LEDs (8): Light red when there is no UTP video being received. Light green when there is UTP video being received. Flashes amber when Coaxitron pan/tilt/zoom (PTZ) control commands are being transmitted.

2 Distance Dials (8): Override the adaptive technology with the manual selection of cable distance (1,000-4,000 feet or 305-1,219 meters). Auto high mode must be used when connecting to a balun or a Spectra® mini. Auto low mode must be used when connecting to Pelco UTP cameras, such as the CC3710/CC3610 Series.

3 Rack Ears (2): Removable for various mounting options.

4 UTP Connector (2.5 mm): 2-pin connector with removable mating connector.

5 BNC Connectors (32): Four coaxial outputs for each channel. Only BNC A of each channel can be used for Coaxitron control.

6 Barrel Connector (5 mm): Power from a 12 VDC universal power supply.

7 Molex Connector: 6-pin connector for use in a multi-unit installation with a rack-mountable external power supply.

Installation

Make sure all parts are present for the unit.

1   Universal power supply (Part #PS07-6602-9012G)
1   Power cord (#US-320-C13, #UK-320-C13, #EU-320-C13, or #AU-320-C13)
8   UTP mating connectors
4   Rack mount screws with washers

MOUNTING

The TW3008AR-4 receiver is 1 rack unit high and can be mounted into a standard EIA 19-inch rack, under a desk/table, or onto a wall. The TW3008AR-4 is shipped with the rack ears on the front, but they can be removed and placed on the center or back of the unit. The following mounting options are possible.

•   Rack ears on the center of the unit for rack mount, desk/table mount, or wall mount

•   Rack ears on the front of the unit for rack mount
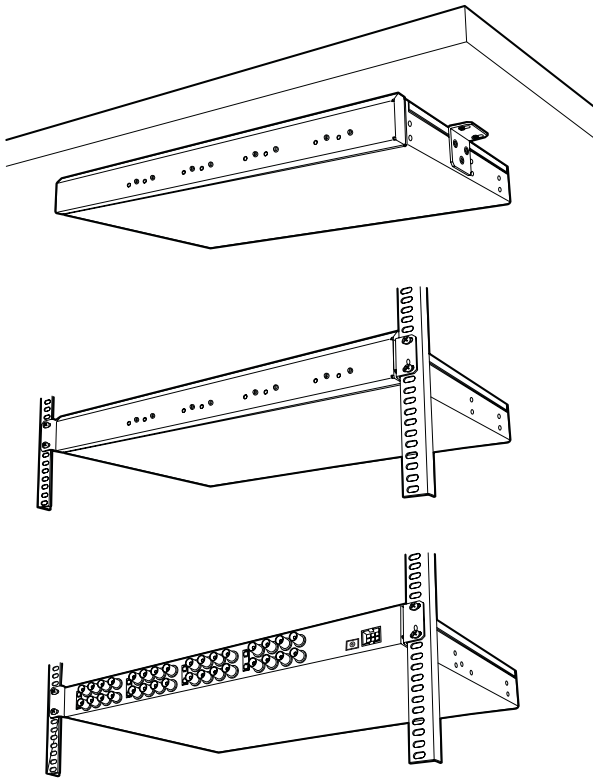
•   Rack ears on the back of the unit for rack mount

Figure 2. Mounting the TW3008AR-4

SETTING THE DISTANCE DIALS

The front of the unit has eight distance dials, one for each channel. The default position for each dial is H (high mode) auto. When the dials are set to H or L (low mode) the adaptive technology in the TW3008AR-4 automatically adjusts the low, medium, and high frequency components of the video signal, allowing for the best possible video transmission.
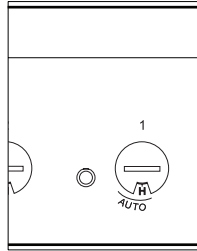

Figure 3. Factory Default Dial Position

You can override the adaptive technology for each channel by manually adjusting the distance dials to a specific distance (1K, 2K, 3K or 4K). If you want to transmit video up to 4,000 feet (1,219 meters) of UTP cable, for example, turn the dial to 4K. You can set only one distance at a time per channel.

High mode is the default position and is used when the video output into a 75-ohm terminator is greater than or equal to 1 Vp-p. Low mode should be used when the video output into a 75-ohm terminator is less than 1 Vp-p.

APPLICATIONS

You can connect the TW3008AR-4 active receiver to transmitters, such as the TW3001P passive transceiver, TW3001AT active transmitter, and CC3710/CC3610 UTP cameras. Although you can connect these products using an unshielded twisted pair Cat3 and Cat5 cable, Cat5e and Cat 6 are recommended for the best video performance.

Always connect the UTP wires on the Cat cable from + to + and from – to –. For example, if you connect the blue wire to the + on the TW3008AR-4 make sure you connect the other end of the blue wire to the + on the transmitter.

Table A shows the maximum cable distance with Coaxitron or video only when connecting the TW3008AR-4 to a TW3001P passive transceiver with a particular type of Cat cable.

Table A. Cable Distance with TW3001P

Cable Type	Maximum Distance (with Coaxitron)	Maximum Distance (video only)
Cat3	750 ft (229 meters)	1,500 ft (457 meters)
Cat5	750 ft (229 meters)	3,000 ft (914 meters)
Cat5e	750 ft (229 meters)	4,000 ft (1,219 meters)
Cat6	750 ft (229 meters)	4,000 ft (1,219 meters)

Table B shows the minimum size for single wire and stranded wire.

Table B. Wire Gauge

Wire Gauge (minimum allowable)	
Single Wire (solid)	24 AWG (0.25 mm^2)
Stranded Wire (flexible)	24 AWG (1.0 mm^2)

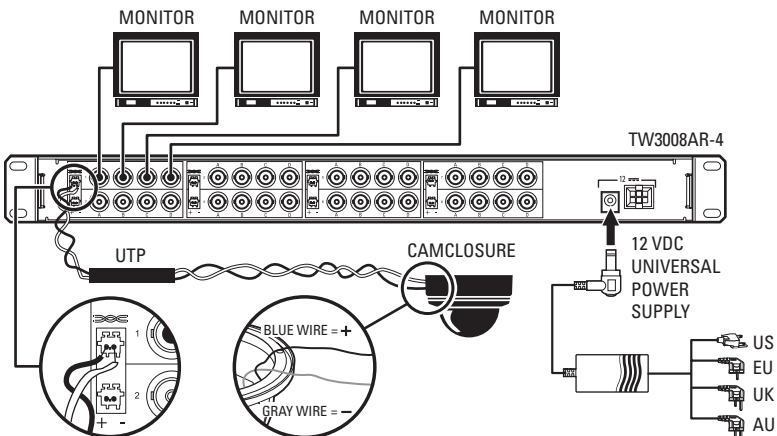Figure 4 shows a TW3008AR-4 connected to a UTP Camclosure®.

Figure 4. TW3008AR-4 Connected to a UTP Camclosure
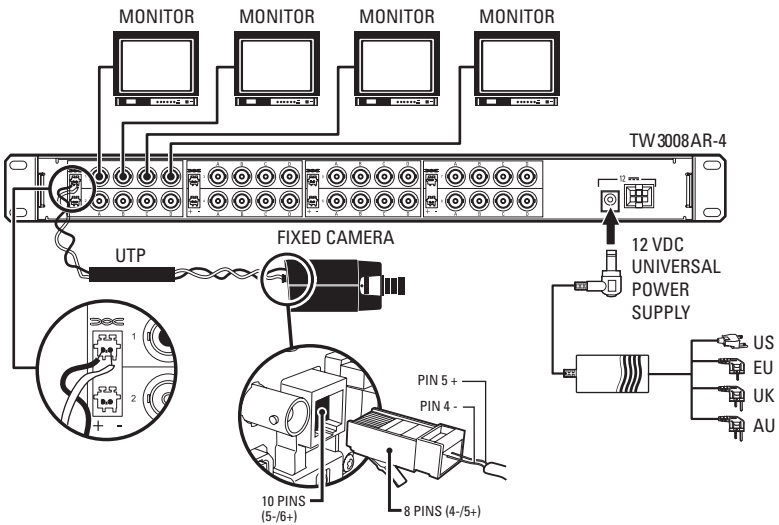
Figure 5 shows a TW3008AR-4 connected to a UTP fixed camera.

Figure 5. TW3008AR-4 Connected to a UTP Fixed Camera

Figure 6 shows a TW3008AR-4 connected to a UTP Spectra® for Coaxitron PTZ control.

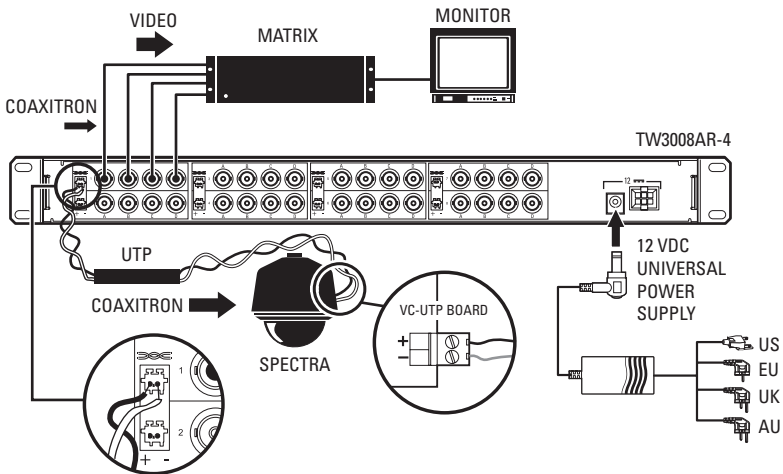**NOTE:** Coaxitron control will only work when using BNC A of each channel.

Figure 6. TW3008AR-4 Connected to a Spectra Dome

Figure 7 shows a TW3008AR-4 connected to a TW3001P passive transceiver. The TW3001P then connects to a non-UTP fixed camera.
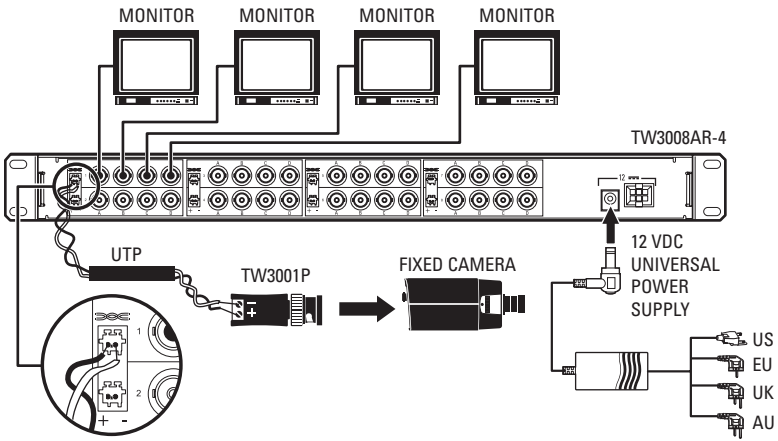

Figure 7. TW3008AR-4 Connected to a Single Passive Transceiver

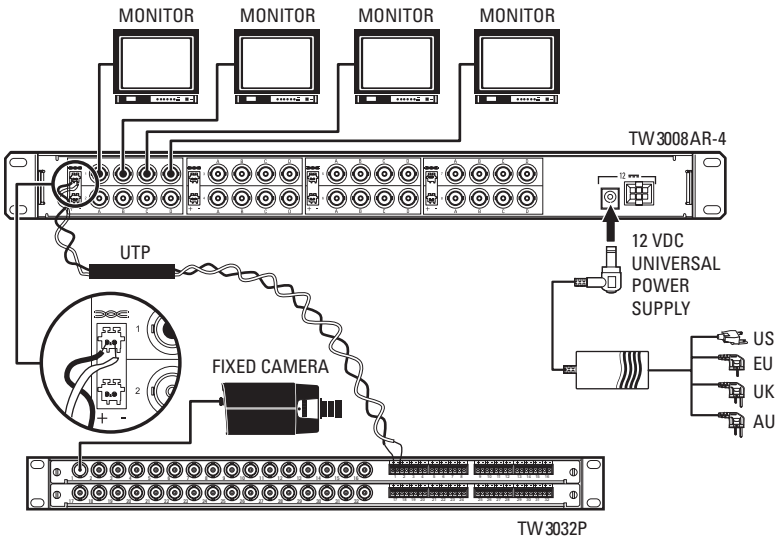Figure 8 shows a TW3008AR-4 connected to a TW3032P passive transceiver.

Figure 8. TW3008AR-4 Connected to a 32-Channel Passive Transceiver

Figure 9 shows a TW3008AR-4 connected to a TW3004P passive transceiver. The TW3004P then connects to a non-UTP fixed camera.
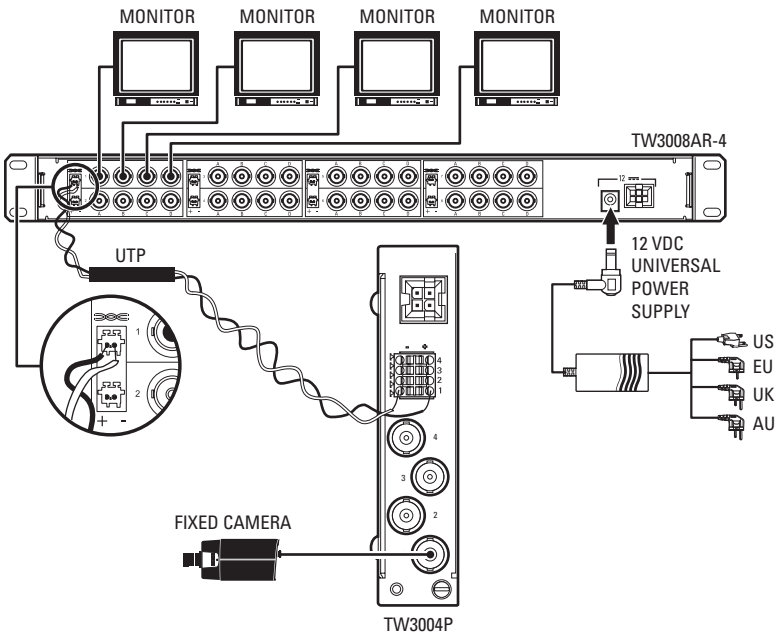

Figure 9. TW3008AR-4 Connected to a 4-Channel Passive Transceiver

Specifications

ELECTRICAL

Input Voltage	12 VDC
Current	2.25 A
Wire Type	Unshielded Twisted Pair (24 AWG minimum)
Wire Category	Cat3 or better
Wire Distance	4,000 feet maximum using Cat5e or Cat6
DC Loop Resistance	52 ohms per 1,000 feet
Differential Capacitance	19pF/ft max
Transient Immunity	300 W peak pulse power (8/20 US)

VIDEO CHARACTERISTICS

Video Output	32, BNC
Format	NTSC, PAL, SECAM
Frequency Response	DC to 10 MHz
Common Mode/Differential Mode Rejection	>70 dB

MECHANICAL

Connectors	
BNC	Video output
6-Pin Connector	For use with EIA rack-mounted power supply
2-Pin Connector (2.5 mm)	UTP input
Barrel Connector	For connection to external power supply
Construction	Aluminum
Finish	Black

GENERAL

Operating Temperature	32° to 167°F (0° to 75°C)
Relative Humidity	0 to 90%, noncondensing
Data Transmission	Supports Coaxitron up to 750 feet
LED Indicators	8, status LEDs
Dimensions	11.00" D x 17.25" W x 1.72" H (27.94 x 43.82 x 4.37 cm)
Unit Weight	4.5 lb (2.03 kg)

⊘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.

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

REVISION HISTORY

Manual #	Date	Comments
C1668M	8/06	Original version.

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