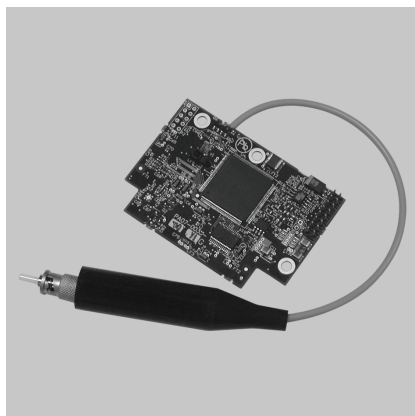




by **Schneider** Electric

INSTALLATION

FS85011A Fiber Transmitter



**Single-Channel Digitally Encoded Video
with Bidirectional Data**

C2606M-A (6/09)

Contents

Important Safety Instructions	5
Regulatory Notices	6
Product Overview	7
Description	7
Models	8
Top View	9
Bottom View	10
Installation	11
Package Contents	11
Data Communication Setup	11
Mounting	11
Troubleshooting	15
Specifications	17

List of Illustrations

1	Single-Channel Video and RS-422 Application	7
2	Single-Channel Video and Coaxitron Data Application	7
3	Top View of FS85011A Transmitter	9
4	Bottom View of FS85011A Transmitter	10
5	Removing the Spectra III/Spectra IV Lower Dome and Dome Drive	12
6	Opening the Door of the Spectra III/Spectra IV Back Box	12
7	Routing Spectra III/Spectra IV Coaxial Cable	13
8	Spectra III/Spectra IV Circuit Board	13

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. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
13. 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.
14. 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.
15. **WARNING:** To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.
16. Installation should be done only by qualified personnel and conform to all local codes.
17. 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.
18. Use only installation methods and materials capable of supporting four times the maximum specified load.
19. A CCC-approved power cord must be used to power this equipment when used in China.
20. **CAUTION:** These servicing instructions are for use by qualified service personnel only. To reduce the risk of electric shock do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so.

The product and/or manual may bear the following marks:



This symbol indicates that dangerous voltage constituting a risk of electric shock is present within this unit.



This symbol indicates that there are important operating and maintenance instructions in the literature accompanying this unit.

CAUTION:
RISK OF ELECTRIC SHOCK. DO NOT OPEN.

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.

Product Overview

DESCRIPTION

The FS85011A fiber transmitter is designed for quick and easy installation into the back box of Spectra III™ and Spectra® IV domes.

NOTE: The FS85011A transmitter can also be included as part of an ExSite™ explosionproof positioning system at the factory.

Compatible with the FR85011A/FR85011 receiver, the FS85011A transmitter provides the ability to send one unidirectional composite video channel and one bidirectional RS-422 data channel over one optical fiber (refer to Figure 1). In addition, patent-pending technology provides the solution for allowing Coaxitron® pan/tilt/zoom (PTZ) control data to be transmitted the full distance of the fiber (refer to Figure 2).

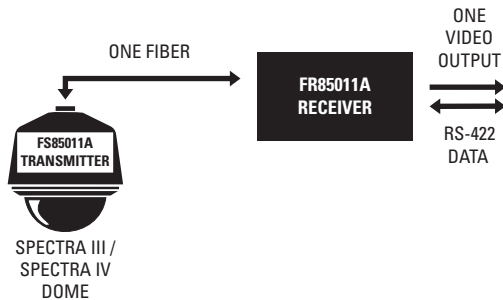


Figure 1. Single-Channel Video and RS-422 Application

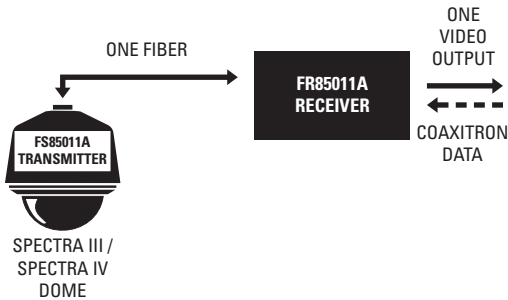


Figure 2. Single-Channel Video and Coaxitron Data Application

Features of the FS85011A fiber optic transmission system include the following:

- Eight-bit digitally encoded video for high-quality video transmission over a single fiber
- Bidirectional RS-422 data channel or Coaxitron communication
- Integrated wavelength division multiplexing (WDM), allowing video and data channels to be transmitted in the same optical fiber using different wavelengths
- Multimode fiber support for distances up to 6 km (3.7 mi)
- Single-mode fiber support for distances up to 46 km (28.6 mi)
- Laser diode for transmission of optical signals
- Exceeds all requirements for the RS-250C Medium-Haul Transmission specification
- Compatible with NTSC, PAL, and SECAM video standards
- No performance adjustments required
- LED indicator for monitoring of signal status

In addition, note the following information:

- The FS85011A transmitter is a Class 1 laser product that complies with FDA radiation performance standard 21CFR Subchapter J and with IEC 60825-1 Edition 1.2, 2001-08.
- For optical power budget and maximum transmission distance specifications of the FS85011A transmitter when used with the FR85011A/FR85011 receiver, refer to *Specifications* on page 17. For additional information about the FR85011A/FR85011 receiver, refer to the manual supplied with the receiver.

MODELS

The FS85011A transmitter consists of the following series of models:

Multimode Models:

FS85011AMST Single-channel fiber optic video transmitter/data transceiver; multimode, ST connector; 6 inch (15.24 cm) cable; compatible with FR85011AMSTR and FR85011MSTR receivers

FS85011AMSTEX Single-channel fiber optic video transmitter/data transceiver; multimode, ST connector; 6 ft (1.83 m) cable; compatible with FR85011AMSTR and FR85011MSTR receivers

Single-Mode Models:

FS85011ASST Single-channel fiber optic video transmitter/data transceiver; single-mode, ST connector; 6 inch (15.24 cm) cable; compatible with FR85011ASSTR and FR85011SSTR receivers

FS85011ASSTEX Single-channel fiber optic video transmitter/data transceiver; single-mode, ST connector; 6 ft (1.83 m) cable; compatible with FR85011ASSTR and FR85011SSTR receivers

FS85011ASFC Single-channel fiber optic video transmitter/data transceiver; single-mode, FC connector; 6 inch (15.24 cm) cable; compatible with FR85011ASFCR and FR85011SFCR receivers

TOP VIEW

Figure 3 illustrates the top of the FS85011A transmitter.

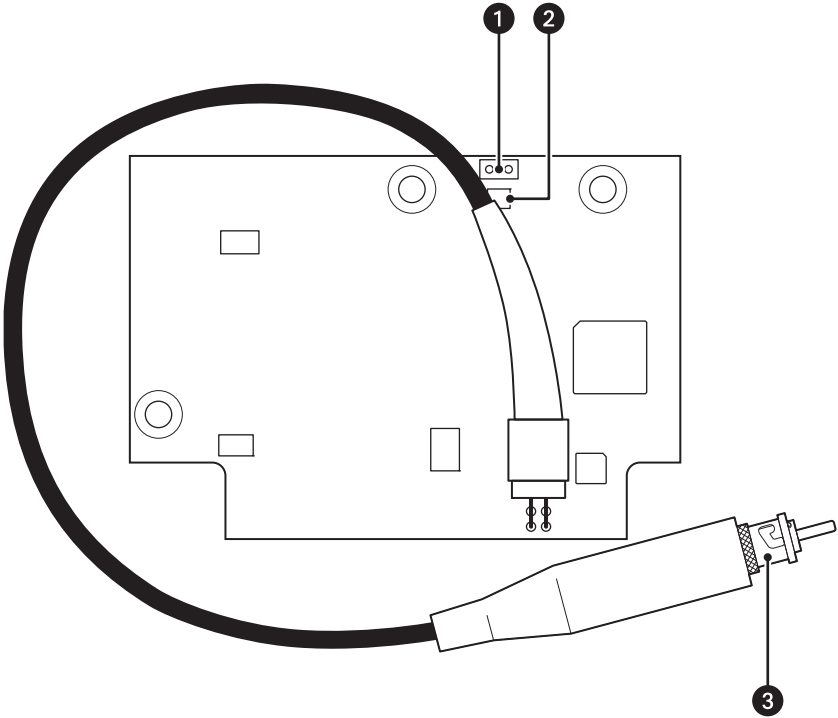


Figure 3. Top View of FS85011A Transmitter

- ❶ **Data Selection Connector (P3):** A 2-pin header; removable mating plug (not shown).
- ❷ **Optic Fault LED (CR1):** Refer to *Troubleshooting* on page 15 for detailed information.
- ❸ **Fiber Optic Connector:** ST or FC (model dependent).

BOTTOM VIEW

Figure 4 illustrates the bottom of the FS85011A transmitter.

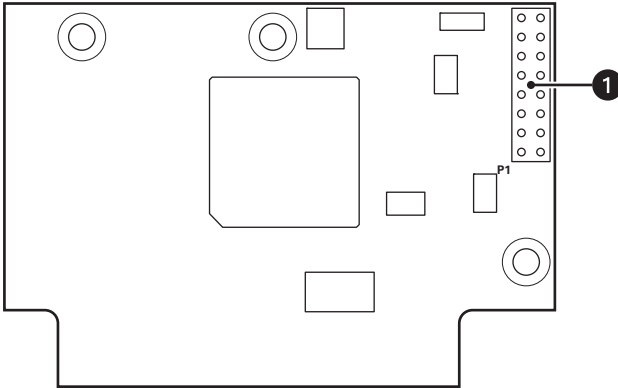


Figure 4. Bottom View of FS85011A Transmitter

- 1 Power, Video, and Data Connector (P1):** A 16-pin header.

Installation

PACKAGE CONTENTS


The following items are supplied:

- 1 FS85011A transmitter
- 1 Fiber optic adapter (depending on model):
 - ST to ST adapter for FS85011AMST transmitter
 - FC to ST adapter for FS85011ASST transmitter
 - FC to FC adapter for FS85011ASFC transmitter
- 1 Screw with lock washer, 4-40 x 0.250-inch, Phillips pan head
- 1 FS85011A Fiber Transmitter Installation manual

DATA COMMUNICATION SETUP

The FS85011A transmitter supports RS-422 and Coaxitron data communication. The default setting is RS-422.

NOTE: Determine the required data communication and, if necessary, change the data communication setting of the FS85011A transmitter *before* installing the transmitter into the Spectra III/Spectra IV back box.

 **WARNING:** When setting data communication on the FS85011A transmitter, prevent electrostatic discharge (ESD) damage to the transmitter by wearing a grounding wrist strap that is connected to an approved grounding source.

The Data Selection connector (2-pin header), which is located on the top of the FS85011A transmitter (refer to Figure 3 on page 9), allows you to set the data communication required for the transfer of data.


Set data communication to either of the following types:

- **RS-422:** Enabled when the 2-pin header plug is connected to the header (default setting).
- **Coaxitron:** Enabled when the 2-pin header plug is not connected to the header. If Coaxitron is required, remove the plug from the 2-pin header.

MOUNTING

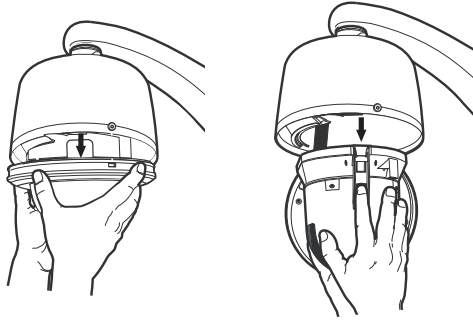
The FS85011A transmitter mounts to the circuit board inside the Spectra III/Spectra IV back box.

NOTE: Before mounting the FS85011A transmitter, determine the required data communication and, if necessary, change the setting of the transmitter (refer to *Data Communication Setup* for information).

 **WARNING:** When mounting the FS85011A transmitter, prevent electrostatic discharge (ESD) damage to the transmitter by wearing a grounding wrist strap that is connected to an approved grounding source.

To mount the transmitter into an existing or new Spectra III/Spectra IV installation:

1. (*Existing Spectra III/Spectra IV installation only*) Perform the following steps:
 - a. Turn off power to the dome.
 - b. Remove the lower dome (refer to Figure 5A).
 - c. Remove the dome drive from the back box (refer to Figure 5B).



A. LOWER DOME REMOVAL

B. DOME DRIVE REMOVAL

Figure 5. Removing the Spectra III/Spectra IV Lower Dome and Dome Drive

2. Open the hinged door of the back box by pushing the tab lock toward the wall of the back box and then pulling the door open (refer to Figure 6).

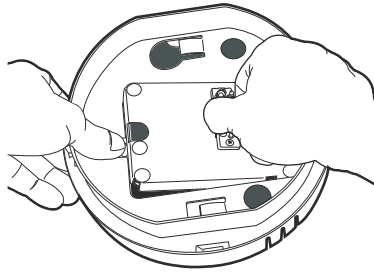


Figure 6. Opening the Door of the Spectra III/Spectra IV Back Box

3. (*New Spectra III/Spectra IV installation only*) Route the BNC connector and coaxial cable through the wiring entrance at the rear of the back box to provide clearance for mounting the FS85011A transmitter to the Spectra III/Spectra IV circuit board (refer to Figure 7 on page 13).

NOTE: The BNC connector is enclosed in an insulating boot. When routing the BNC connector, ensure that the connector remains enclosed in the boot.

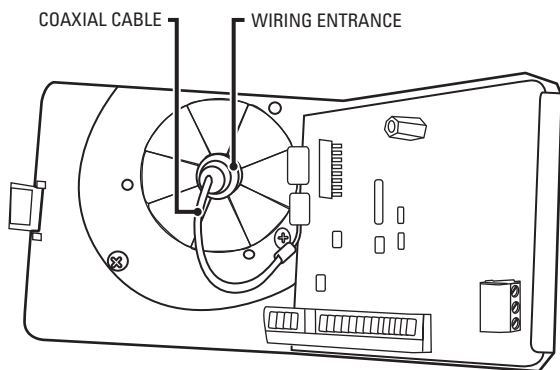


Figure 7. Routing Spectra III/Spectra IV Coaxial Cable

4. If necessary, reposition power wiring of the Spectra III/Spectra IV circuit board to provide clearance for mounting the FS85011A transmitter to the circuit board.



WARNING: Improper handling of the power wiring can damage the wiring. Care should be taken when repositioning the wiring.

5. Remove the plug from the 16-pin connector on the Spectra III/Spectra IV circuit board (refer to Figure 8).

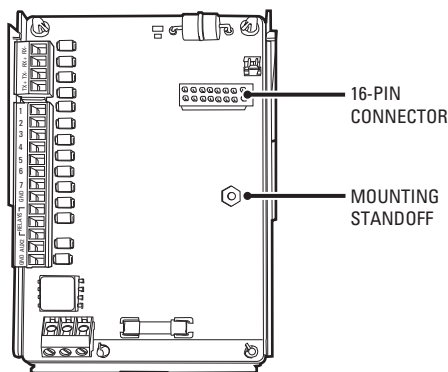


Figure 8. Spectra III/Spectra IV Circuit Board

6. Ensure that the fiber optic cable on the FS85011A transmitter is positioned to the left of the Data Selection connector (refer to *Top View* on page 9).
7. Align the 16-pin header located on the bottom of the FS85011A transmitter with the 16-pin connector on the Spectra III/Spectra IV circuit board, and then plug the header into the connector.
8. Secure the FS85011A transmitter to the mounting standoff on the Spectra III/Spectra IV circuit board (refer to Figure 8) using the Phillips pan head screw with lock washer (supplied).
9. Connect the fiber optic connector on the FS85011A transmitter to the fiber optic adapter (supplied).
10. Connect the fiber optic adapter to the fiber optic cable at the rear of the Spectra III/Spectra IV back box.

11. Carefully close the door of the back box.



WARNING: When closing the door of the back box, be careful not to pinch or kink the fiber.

12. *(Existing Spectra III/Spectra IV installation only)* Perform the following steps:

- a. Reinstall the dome drive into the back box.
- b. Reinstall the lower dome.
- c. Turn on power to the dome.

13. *(New Spectra III/Spectra IV installation only)* Refer to the Spectra III/Spectra IV installation documentation for dome installation instructions.

NOTE: Power to the FS85011A transmitter is supplied from the Spectra III/Spectra IV dome.

Troubleshooting

The Optic Fault (CR1) LED indicator on the top of the FS85011A transmitter allows you to monitor signal status. Table A provides information about the indicator and associated troubleshooting guidelines.

If the following instructions fail to solve your problem, contact Pelco Product Support at 1-800-289-9100 (USA and Canada) or +1-559-292-1981 (International) for assistance. You should have the product serial number available when calling.

Do not try to repair the unit yourself. Leave all maintenance and repairs to qualified technical personnel.

Table A. Troubleshooting with the Optic Fault Indicator (1 of 2)

Indicator Color	Meaning	Possible Cause	Corrective Action
Green	The optical signal is being received and laser is operating properly.	—	No action required.
Red	The optical signal is not being received.	Remote fiber module is not powered on.	Check power connections. Replace power supply, if necessary.
		Fiber optic cable is not connected.	Check fiber optic connections.
		Fiber optic cable connectors are dirty or are damaged.	Clean, polish, or replace fiber optic cable connectors as necessary.
		Fiber optic cable is defective.	Replace cable.
		Optical dB losses in the fiber optic installation exceed the optical power budget specification stated in <i>Specifications</i> on page 17.	Check for problems with the fiber optic installation, for example, excessive dB losses in connectors, splices, patch panels, cables, and so forth.
		Optical dB losses in the fiber optic installation meet the optical power budget specification stated in <i>Specifications</i> on page 17; however, a fiber module is defective.	Contact Product Support at 1-800-289-9100.

Table A. Troubleshooting with the Optic Fault Indicator (2 of 2)

Indicator Color	Meaning	Possible Cause	Corrective Action
Flashing red	Laser has shut down.	Fiber module is operating in extreme environmental conditions; for example, operating temperature is below or above recommended range as stated in <i>Specifications</i> on page 17.	Ensure that fiber module operates according to operating conditions stated in <i>Specifications</i> , and then cycle the power.
		Laser has reached end of life.	Cycle the power.
Not lit	Power is not being applied to the transmitter.	Power connection is faulty.	Check power connections to the Spectra III/Spectra IV dome.

Specifications

VIDEO

Number of Channels	1
Modulation Type	Pulse code modulation, 8-bit resolution
Video Input	1.0 Vp-p, 75 ohms; NTSC, PAL, and SECAM
Bandwidth	6.5 MHz
Gain	Unity
Differential Gain	<2%
Differential Phase	<1°
Tilt	<1%
Signal-to-Noise Ratio	>60 dB (CCIR weighted)

DATA

Number of Channels	1
Data Communication	RS-422, Coaxitron

GENERAL


Operating Temperature	Refer to the Spectra III, Spectra IV, or ExSite product specifications as appropriate.
Input Power Requirements	12 VDC, 160 mA
LED Indicator	Optic Fault
Dimensions	2.9" L x 2.0" W (7.37 x 5.08 cm)
Unit Weight	0.08 lb (0.04 kg)

MECHANICAL

Connectors	
Video/Data/Power	16-pin header
Data Selection	2-pin header
Fiber Optic	ST for multimode fiber ST or FC for single-mode fiber

OPTICAL POWER BUDGET, TRANSMISSION DISTANCE, AND LASER CLASS 1 LIMIT

Model Number		Wavelength (Video/Data)	Optical Power Budget	Maximum Transmission Distance	Cable Length
FS85011A Transmitter	Compatible Receiver*				
Multimode (62.5/125 μm)					
FS85011AMST	FR85011AMSTR	1310/850 nm	26 dB [†]	6 km (3.7 mi) [‡]	6 inches (15.24 cm)
	FR85011MSTR	1310/850 nm	20 dB [†]	6 km (3.7 mi) [‡]	6 inches (15.24 cm)
FS85011AMSTEX	FR85011AMSTR	1310/850 nm	26 dB [†]	6 km (3.7 mi) [‡]	6 ft (1.83 m)
	FR85011MSTR	1310/850 nm	20 dB [†]	6 km (3.7 mi) [‡]	6 ft (1.83 m)
Single-Mode (9/125 μm)					
FS85011ASST	FR85011ASSTR	1310/1550 nm	28 dB	46 km (28.6 mi) [§]	6 inches (15.24 cm)
	FR85011SSTR	1310/1550 nm	20 dB	30 km (18.6 mi) [§]	6 inches (15.24 cm)
FS85011ASSTEX	FR85011ASSTR	1310/1550 nm	28 dB	46 km (28.6 mi) [§]	6 ft (1.83 m)
	FR85011SSTR	1310/1550 nm	20 dB	30 km (18.6 mi) [§]	6 ft (1.83 m)
FS85011ASF	FR85011ASFCR	1310/1550 nm	28 dB	46 km (28.6 mi) [§]	6 inches (15.24 cm)
	FR85011SFCR	1310/1550 nm	20 dB	30 km (18.6 mi) [§]	6 inches (15.24 cm)
<p>*Single-channel fiber optic video receiver/data transceiver. [†]When using 50/125 μm multimode fiber, subtract 3 dB from the optical power budget. [‡]Maximum transmission distance is limited by fiber bandwidth. [§]Maximum transmission distance is based on attenuation of 0.5 dB/km plus a 5 dB buffer for connector and splice losses.</p> <p>Note: For models with higher optical power budgets, contact the factory.</p>					

 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
C2606M	8/07	Original version.
C2606M-A	6/09	Added FS85011ASSTEX and FS85011AMSTEX models.

Pelco, the Pelco logo, Camclosure, Digital Sentry, Endura, Esprit, ExSite, Genex, Intelli-M, Legacy, and Spectra are registered trademarks of Pelco, Inc. Spectra III is a trademark of Pelco, Inc.

DLP is a registered trademark of Texas Instruments Incorporated.

All product names and services identified throughout this document are trademarks or registered trademarks of their respective companies.

The absence of a trademark or registered trademark from this document does not constitute a waiver of intellectual property rights.

© Copyright 2009, Pelco, Inc. All rights reserved.

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:
 - Fiber optic products
 - TW3000 Series unshielded twisted pair (UTP) transmission products
 - CC3701H-2, CC3701H-2X, CC3751H-2, CC3651H-2X, MC3651H-2, and MC3651H-2X camera models
- Three years:
 - Pelco-branded fixed camera models (CCC1390H Series, C10DN Series, C10CH Series, IP3701H Series, and IX Series)
 - EH1500 Series enclosures
 - Spectra[®] IV products (including Spectra IV IP)
 - Camclosure[®] Series (IS, ICS, IP) integrated camera systems
 - DX Series digital video recorders, DVR5100 Series digital video recorders, Digital Sentry[®] Series hardware products, DVX Series digital video recorders, and NVR300 Series network video recorders
 - Endura[®] Series distributed network-based video products
 - Genex[®] Series products (multiplexers, server, and keyboard)
 - PMCL200/300/400 Series LCD monitors
- Two years:
 - Standard varifocal, fixed focal, and motorized zoom lenses.
 - DF5/DF8 Series fixed dome products
 - Legacy[®] Series integrated positioning systems
 - Spectra III[™], Spectra Mini, Spectra Mini IP, Esprit[®], ExSite[®], and PS20 scanners, including when used in continuous motion applications.
 - Esprit Ti and TI2500 Series thermal imaging products
 - Esprit and VVV5700 Series window wiper (excluding wiper blades).
 - CM6700/CM6800/CM9700 Series matrix
 - Digital Light Processing (DLP[®]) displays (except lamp and color wheel). The lamp and color wheel will be covered for a period of 90 days. The air filter is not covered under warranty.
 - Intelli-M[®] eIDC controllers
- One year:
 - Video cassette recorders (VCRs), except video heads. Video heads will be covered for a period of six months.
- Six months:
 - All pan and tilts, scanners, or preset lenses used in continuous motion applications (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 a Pelco designated location. 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 that 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

To expedite parts returned for repair or credit, please call Pelco 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) and designated return location.

All merchandise returned for credit may be subject to a 20 percent 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

12-23-08

PELCO

by **Schneider** Electric

www.pelco.com

Pelco, Inc. Worldwide Headquarters 3500 Pelco Way Clovis, California 93612 USA
USA & Canada Tel (800) 289-9100 Fax (800) 289-9150
International Tel +1 (559) 292-1981 Fax +1 (559) 348-1120