

**IOP19 Series
Integral Color Camera/Lens for
SB1900 Series Dome**

Installation/Operation Manual

C718M (10/96)

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REVISION HISTORY

Manual #	Date	Comments
C718M	10/96	Original manual.

IOP19 SERIES INTEGRAL COLOR CAMERA/LENS PACKAGE FOR SB1900 SERIES DOMES

1.0 WARNINGS

Prior to installation and use of this product, the following WARNINGS should be observed.

1. Installation and servicing should only be done by Qualified Service Personnel and conform to all Local codes.
2. 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.
3. Only use replacement parts recommended by Pelco.
4. After replacement/repair of this unit's electrical components, conduct a resistance measurement between line and exposed parts to verify the exposed parts have not been connected to line circuitry.

The product may bear the following marks:

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



CAUTION:
TO REDUCE THE RISK OF ELECTRICAL SHOCK, DO NOT REMOVE COVER. NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

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.

Please thoroughly familiarize yourself with the information in this manual prior to installation and operation.

2.0 SCOPE

This manual covers the IOP19 Series of integral color camera/lens packages.

3.0 DESCRIPTION

Pelco's IOP19 Series of integral color camera/lens combinations are specifically designed for use in the SB1900 Series of indoor surveillance dome enclosures.

Design considerations were engineered into this series of integral camera/lens combinations to ensure ease of servicing.

3.1 MODELS

The following cameras with integral lens are for use in SB1900 series domes:

IOP19C3B Basic color NTSC (EIA) series camera with integral TVH6M-1 lens

IOP19C3G Basic color NTSC (EIA) series camera with integral TVH10M-1 lens

4.0 INSTALLATION

To install the camera/lens package in your dome, follow the steps below.

1. Disconnect main power to the back box.
2. Remove the dome drive from the back box.
3. Refer to Figure 1. Remove the nuts and flat washers from the 1/4-20 studs on the bottom of the IOP package. Insert the studs through the slots in the tilt table. Make sure the lens is facing the front of the tilt table. Attach the IOP package to the tilt table with the washers and nuts. Tighten the nuts just snug.
4. Refer to Figure 2 and make the electrical connections.
5. Insert the dome drive into the back box. Adjust the IOP package on the tilt table so that it is as close to the dome as possible without hitting the dome when the IOP package is tilted up or down. Then securely tighten the nuts on the IOP package.

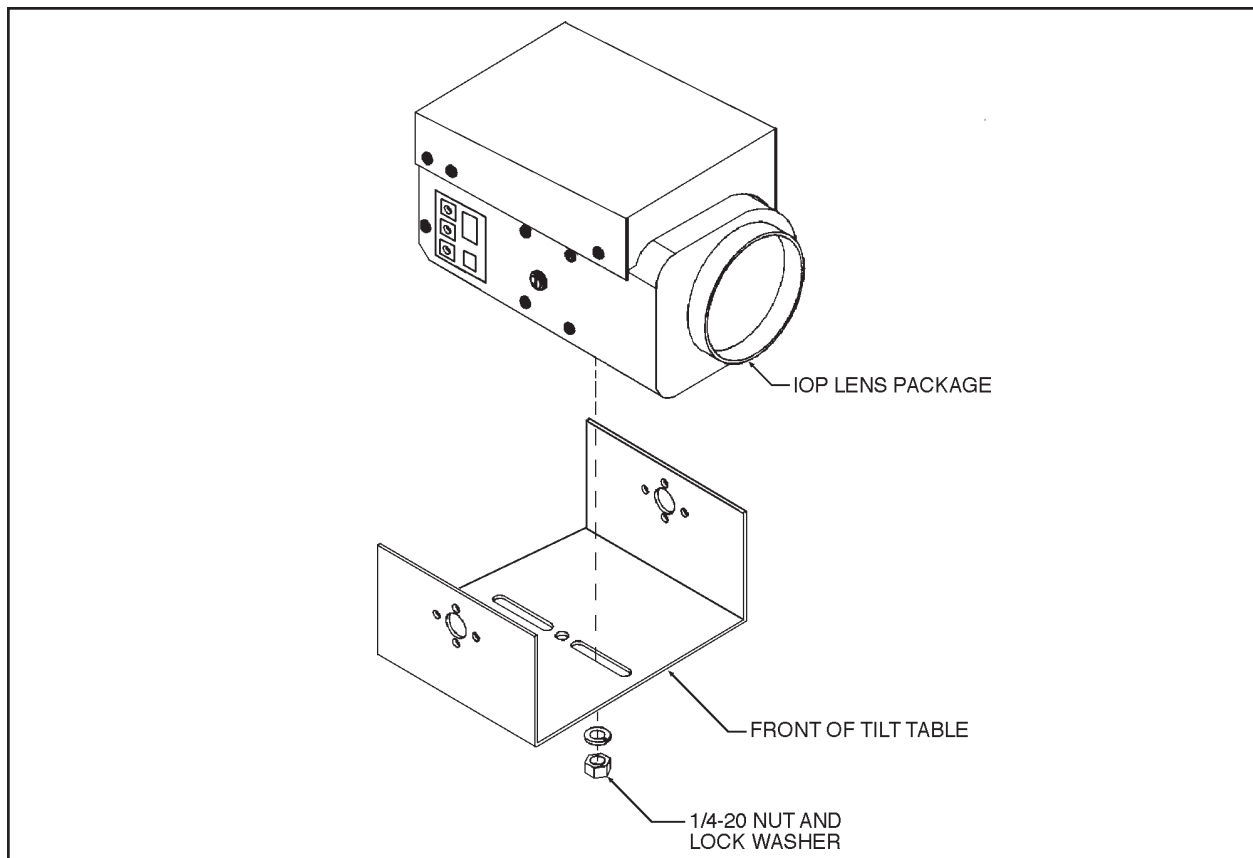


Figure 1. IOP Package Installation

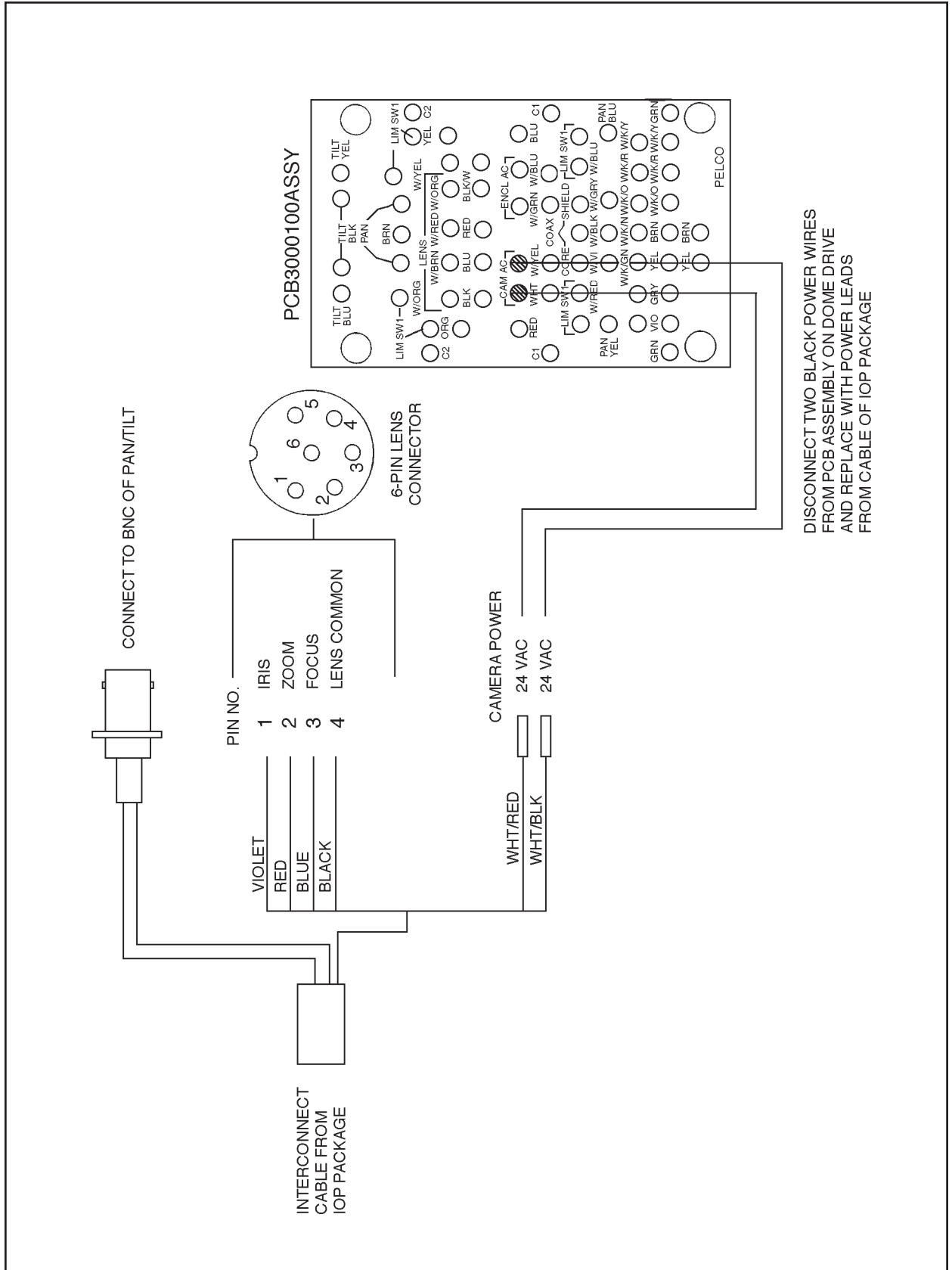


Figure 2. Wiring Diagram for SB1900 Dome and IOP Package

5.0 ADJUSTMENTS

Your optics package comes from the factory adjusted for a broad range of lighting conditions. For this reason, you may find it necessary to adjust your optics package to tailor the picture to your specific viewing environment. The following adjustments can be made to the optics package:

- Back focus
- Shutter speed
- AGC
- White balance
- V-phase (vertical phase)

The factory adjustments for the above controls are set as follows:

➤ **Back Focus**

Adjusted with the camera looking at an object 55 feet (16.76 m) from the lens. The results are a clear, in-focus picture through the entire zoom range.

➤ **Shutter Speed**

Factory set to the slowest speed available: 1/60 second.

➤ **Auto Gain Control**

AGC ON/OFF set to ON.

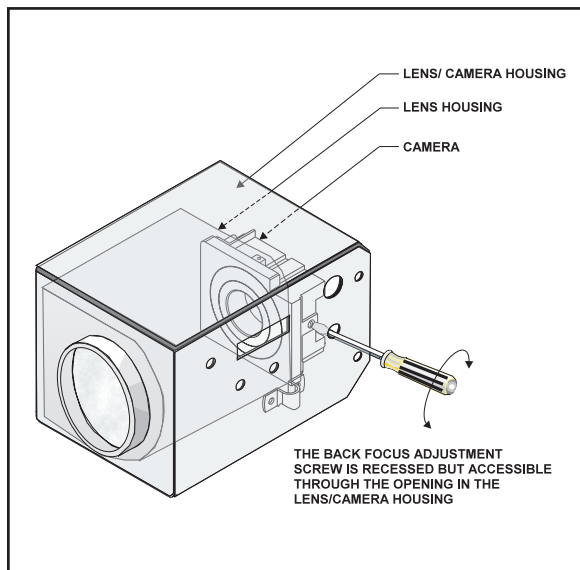


Figure 3. Back Focus Adjustment

➤ **White Balance**

White balance has two positions; one is ATW (Automatic Tracing White), which is a feature that continuously adjusts the camera for optimum color reproduction. AWB (Automatic White Balance) is a feature that retains current settings in memory even when the power is off.

➤ **V-Phase (Vertical Phase)**

Synchronizes the picture when multiple optics packages are used in a system.

The location for the controls of the above features, except for back focusing, are shown in Figure 4. The back focus adjustment location is shown in Figure 3. The following sections define the above features and specify how to adjust them to gain the best system performance in your environment.

5.1 BACK FOCUS

Back focusing involves controlling the distance between the focal point of the lens and the image head. If the lens is focused on the imaging head properly, a clear picture is maintained through the entire zoom range.

The optics package has been back focused at the factory.

In some cases, additional back focusing may be required. Should this be the case, adjust the back focus by moving the lens positions to zoom wide and focus far. Then position the camera on an object with clean lines such as a window seal, shelf, etc., at a minimum distance of 55 feet (16.76 m).

The back focus adjustment screw location is shown in Figure 3. Use a small, standard, straight-slotted screwdriver to adjust the screw, which is recessed in the camera housing. The mechanical movement of the screw as the screwdriver is turned is about three clicks (or detents) in either direction.

As you move the back focus set screw back and forth, the distance between the lens and image head moves in and out. You will be able to see the clean line come in and out of focus. Continue to adjust the screw back and forth until the optimum focus is obtained.

5.2 SHUTTER SPEED

This optics package is provided with adjustable shutter speeds. This feature allows minimal streaking when a very fast moving object passes in front of the non-moving optics package. The shutter speed is factory set to 1/60 second. You can select one of eight shutter speeds (refer to Figure 4).

5.3 AUTO GAIN CONTROL

Refer to Figure 4. The AGC control setting should be set and left in the ON position.

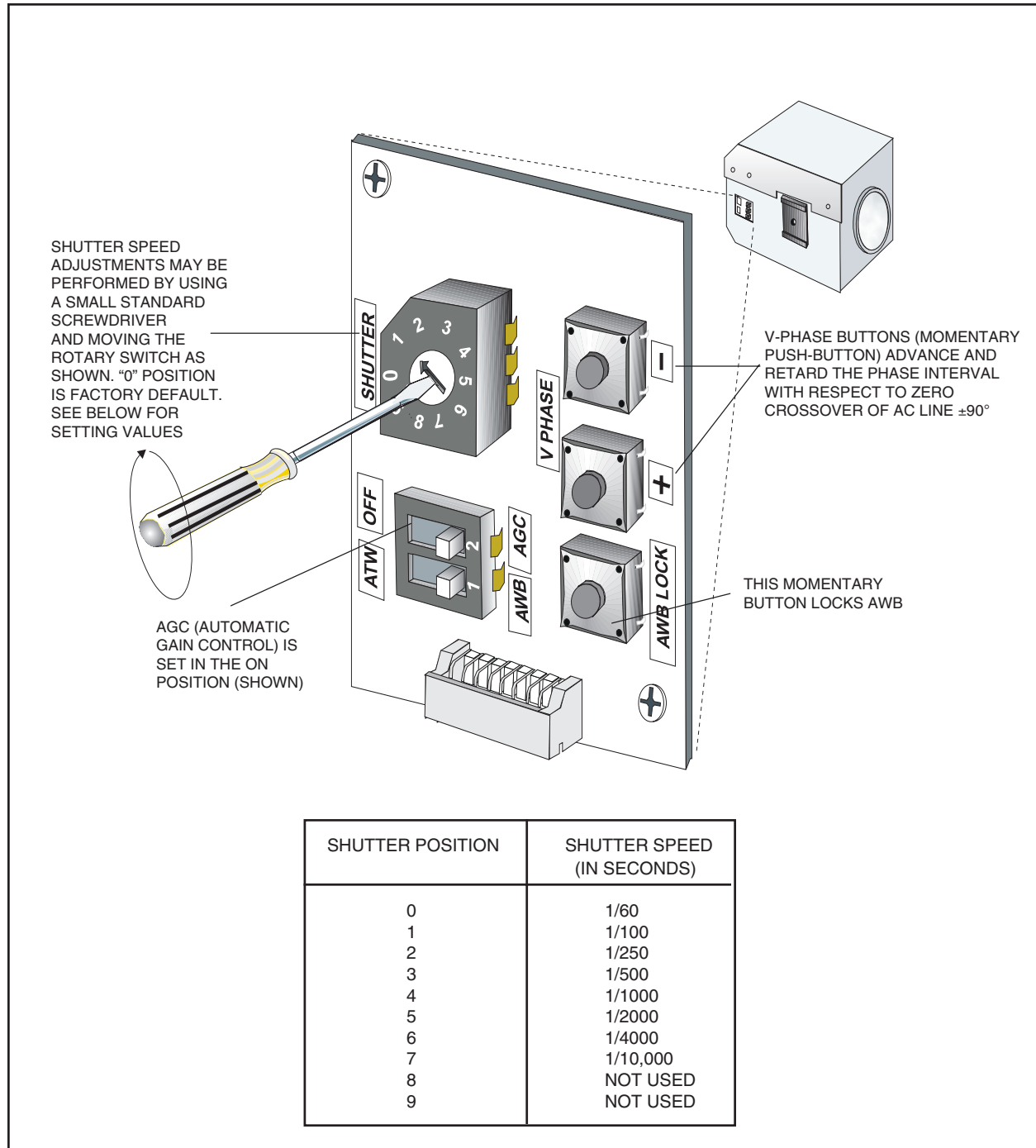


Figure 4. Camera Adjustments

5.4 WHITE BALANCE (ATW/AWB SWITCH)

In the ATW (Automatic Tracing White Balance) position, the white balance is continuously adjusted to take into account variations in the incident light conditions.

In the AWB (Automatic White Balance) position, when the LOCK button is pressed, the white balance is automatically adjusted, and the setting is stored in memory. When the switch is set to this position the white balance always takes the previously stored value.

White balance is factory set to the AWB position and it is recommended that the optics package be used in this mode. Refer to Figure 4.

5.5 V-PHASE (VERTICAL PHASE)

V-phase (vertical phase) is valuable when multiple optic packages are switched by a sequential or matrix switcher. The vertical phase +/- buttons are used to compensate for vertical phase discrepancies that will occur in a multiple camera environment. In this type of environment, each camera's output is synchronized by the frequency of the power supply and phase.

Two persons are required to synchronize the picture: one person at the optics package location and another at the control room looking at a monitor viewing switching video signals from the optics packages.

The V-phase adjustment is $\pm 90^\circ$. Use the tip of a ballpoint pen or similar instrument to press the recessed +/- buttons (refer to Figure 4). The phase change is linear. Pressing a button will activate a phase change in the direction indicated. The phase change will begin after about 1/2 second, but the switch must be held down for a total of 5 or 6 seconds for the phase change to occur. An equal amount of time is required to go in the opposite direction.

Each optics package should be adjusted so that as the switchers switch from one optics package to the next, the monitor does not "roll" or show partial frames of the video picture.

6.0 WIRING DIAGRAM

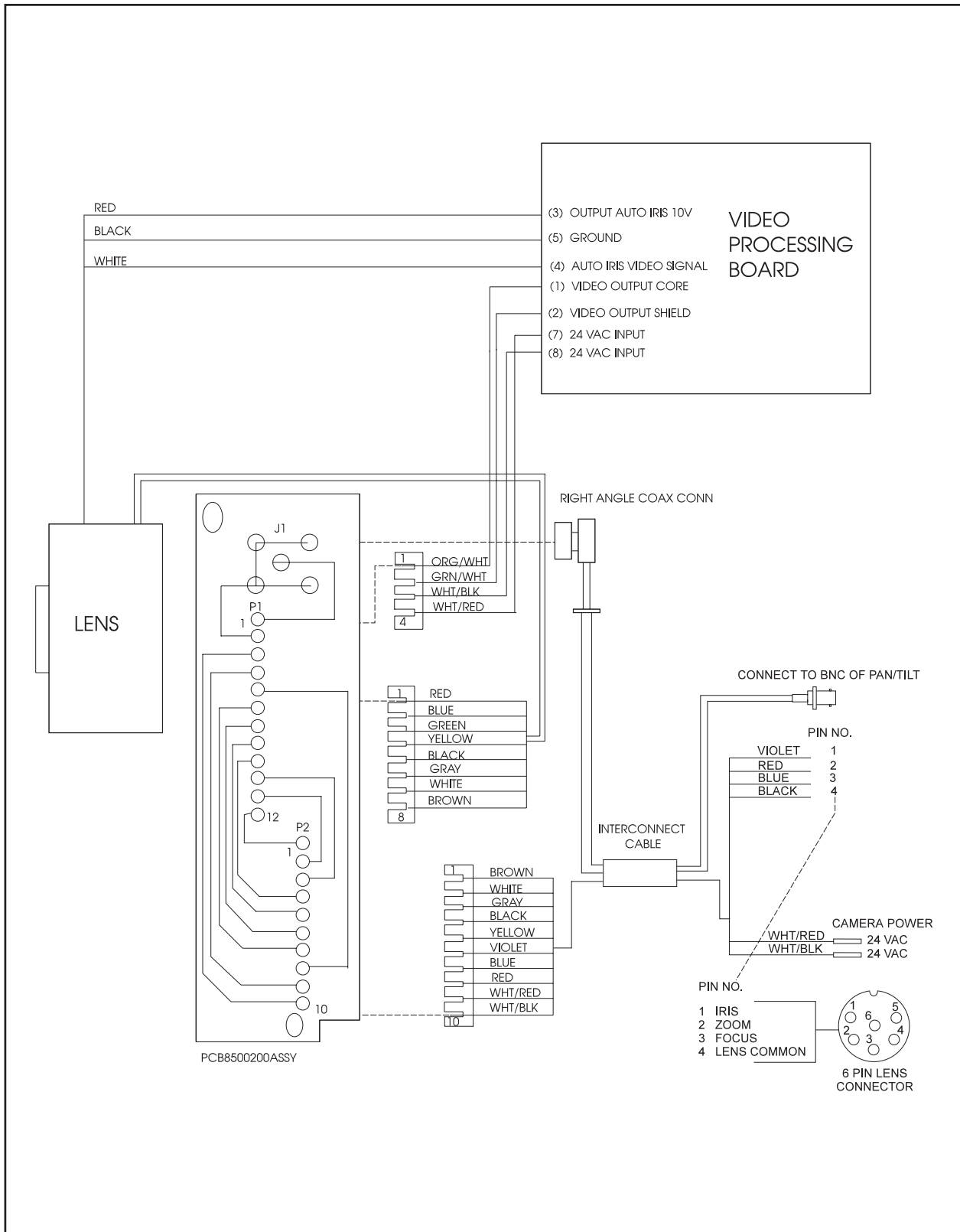


Figure 5. Wiring Diagram for Color Camera/Lens

7.0 EXPLODED ASSEMBLY DRAWING—TVH6

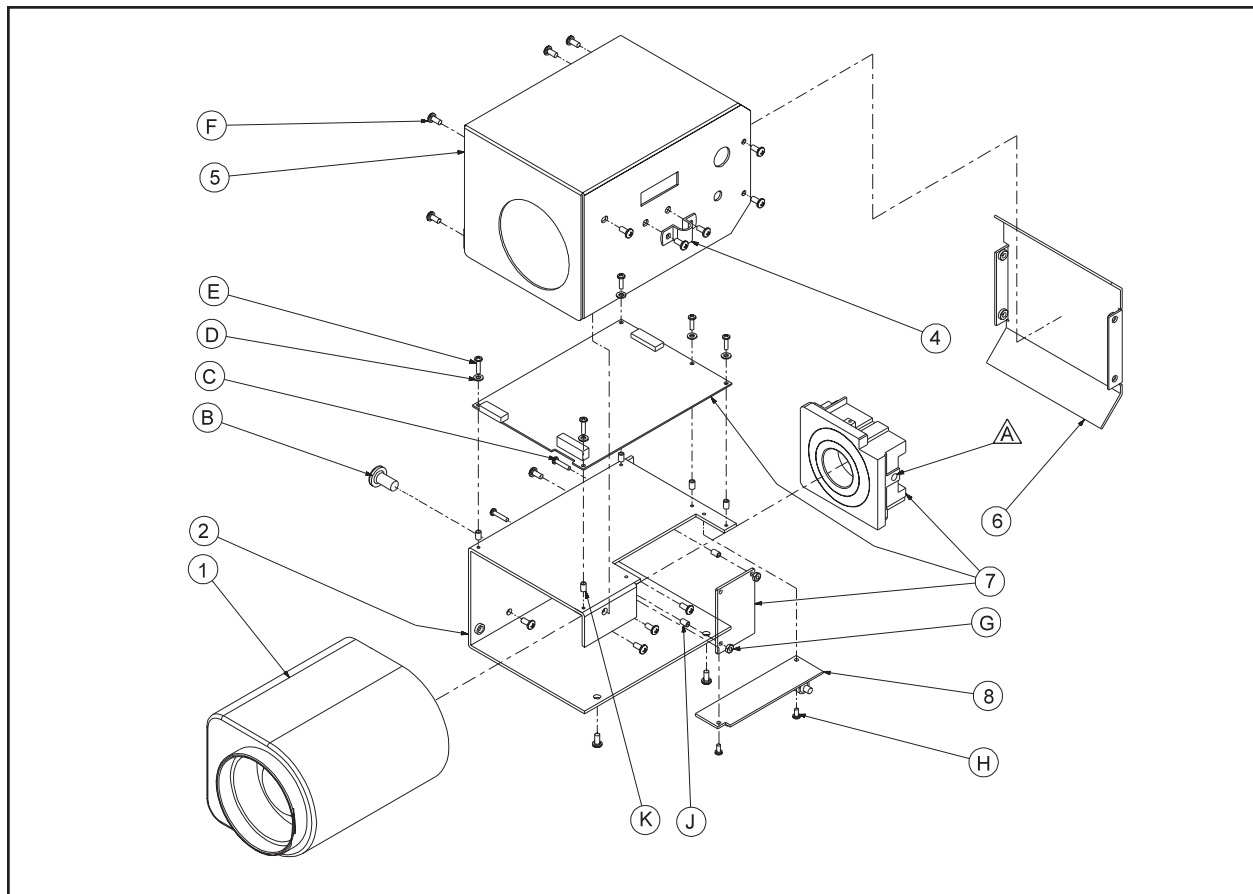


Figure 6. TVH6 Camera/Lens Combination Exploded Assembly Drawing

7.1 MECHANICAL PARTS LIST (Figure 6)

Item	Qty	Description	Part Number
1	1	Lens, 1/2", 6X motorized zoom, F1.2, 8.5-51 mm	H6Z851M
2	1	Frame, 6X lens package	JIOP084307COMP
3		Not used	
4	1	Clamp, wire fatigue	80010016
5	1	Top cover	JIOP084106COMP
6	1	Back cover	JIOP084108COMP
7	1	Camera, Sony, 1/2", high resolution, color (NTSC)	SC-CPL27
8	1	Circuit board, IOP camera interconnect	PCB8500200ASSY
A		Not used	
B	1	Screw, 1/4-20 x .375" flat head, Phillips	ZH1/4-20X.375SP
C	2	Screw, 2-56 x 1/2", pan head, Phillips	ZH2-56X.500SPS
D	5	Internal star washer, #2	ZH2LWSIS
E	5	Screw, 2-56 x 3/8", pan head, Phillips	ZH2-56X.375SRS
F	16	Screw, 4-40 x 1/4" pan head, Phillips	ZH4-40X.250BPP
G	2	Nut, 2-56	ZH2-56NUTSH
H	2	Screw, 2-56 x 3/16" pan head, Phillips	ZH2-56X.187SPS
J	2	Spacer, 3/16" x .187"	SPA9161
K	5	Spacer, 3/16" x .125"	SPA9160

8.0 EXPLODED ASSEMBLY DRAWING—TVH10

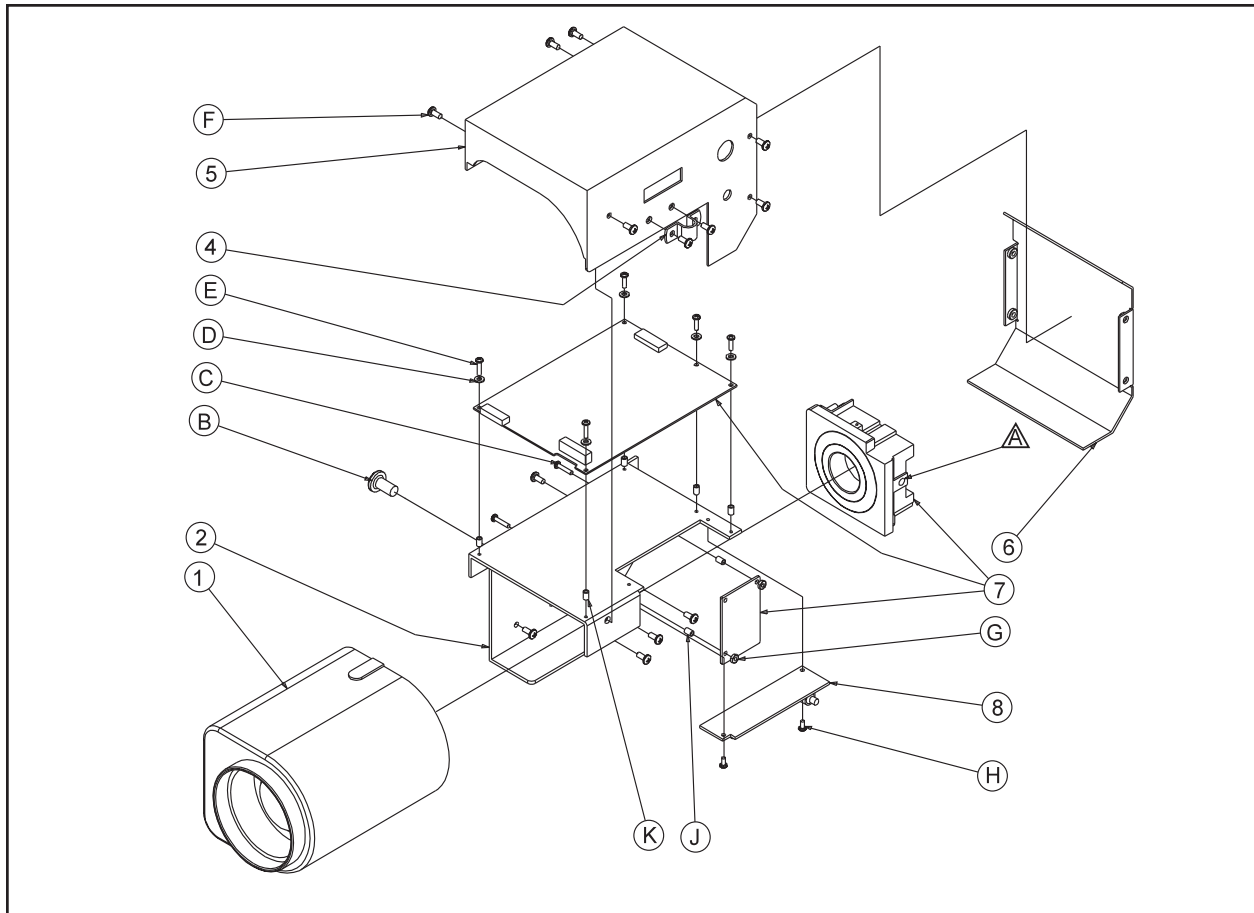


Figure 7. TVH10 Camera/Lens Combination Exploded Assembly Drawing

8.1 MECHANICAL PARTS LIST (Figure 7)

Item	Qty	Description	Part Number
1	1	Lens, 1/2", 10X motorized zoom, F1.2, 8-80 mm	H10Z880M
2	1	Frame, 10X lens package	JIOP194504COMP
3		Not used	
4	1	Clamp, wire fatigue	80010016
5	1	Top cover	JIOP084103COMP
6	1	Back cover	JIOP084105COMP
7	1	Camera, Sony, 1/2", high resolution, color (NTSC)	SC-CPL27
8	1	Circuit board, IOP camera interconnect	PCB8500200ASSY
A		Not used	
B	1	Screw, 1/4-20 x .375" flat head, Phillips	ZH1/4-20X.375SP
C	2	Screw, 2-56 x 1/2", pan head, Phillips	ZH2-56X.500SPS
D	5	Internal star washer, #2	ZH2LWSIS
E	5	Screw, 2-56 x 3/8", pan head, Phillips	ZH2-56X.375SRS
F	13	Screw, 4-40 x 1/4" pan head, Phillips	ZH4-40X.250BPP
G	2	Nut, 2-56	ZH2-56NUTSH
H	2	Screw, 2-56 x 3/16" pan head, Phillips	ZH2-56X.187SPS
J	2	Spacer, 3/16" x .187"	SPA9161
K	5	Spacer, 3/16" x .125"	SPA9160

9.0 SPECIFICATIONS

MECHANICAL

Mounting Bracket

Construction: 0.050" aluminum

Dimensions: See Figures 8 and 9

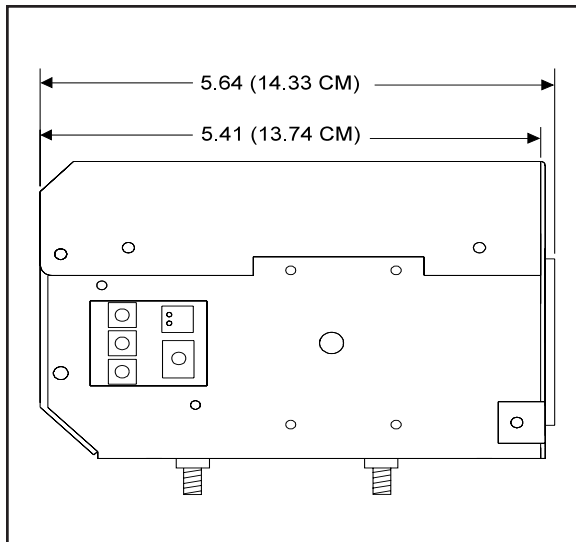


Figure 8. TVH6 Camera Dimensions

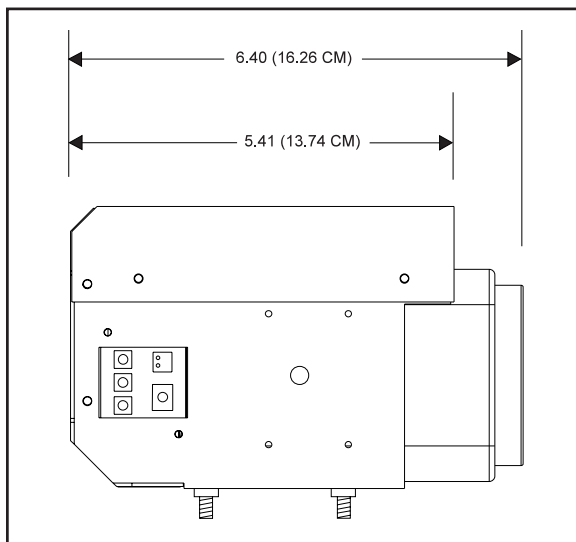


Figure 9. TVH10 Camera Dimensions

ELECTRICAL

Color NTSC (EIA) Camera Module

Input Voltage: 24 VAC, 60 Hz

Power Requirements: Less than 5 watts

Video Output: 1 V p-p composite video into 75 ohms

Operating Temperature: 14° to 131°F (-10° to 55°C)

Imaging Device: 1/2" CCD

Illumination: 2.5 LUX @ F1.2

Scanning System: 525 lines, interlaced/60 Hz

Horizontal Resolution: 470 TVL

Shutter Speed: Adjustable, 1/60 to 1/10,000 second, 8 steps

Automatic Gain Control: Present in auto mode only

10.0 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 FT/FR8000 Series fiber optic 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.
- 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®, Esprit®, ExSite™, and PS20 scanners, including when used in continuous motion applications.
- Two years on Esprit® and WW5700 Series window wiper (excluding wiper blades).
- 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

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Pelco

300 West Pontiac Way
Clovis, CA 93612-5699

(209) 292-1981 • (800) 289-9100

FAX (800) 289-9150 or (209) 292-3827 • DataFAX (800) 289-9108 or (209) 292-0435

International customers call 1-209-292-1981 or FAX 1-209-348-1120

(Product specifications subject to change without notice.)

C718M