PT-Series Camera

Installation Manual

FLIR Commercial Systems, Inc.

70 Castilian Drive
Goleta, CA 93117
Phone: 888.747.FLIR (888.747.3547)
International: +1.805.964.9797
www.flir.com

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The PT-Series thermal imaging system is controlled by US export laws. There are special versions of this system that are approved for international distribution and travel. Please contact FLIR Systems if you have any questions.

Document History

Revision	Date	Comment
100	February 2010	Initial Release
110	March 2010	Added FLIR Sensors Manager information
120	April 2010	Added IP66 and operating temperature to specifications
130	May 2010	Changed the power consumption specifications, added inrush current specification,
140	November 2010	Changed camera model specifications. Added export statement.
150	January 2012	Added FCC and EMC radio emissions notices, additional software functionality and export control changed to EAR 1.

This equipment must be disposed of as electronic waste.
Contact your nearest FLIR Commercial Systems, Inc. representative for instructions on how to return the product to FLIR for proper disposal.

Federal Communications Commission Regulatory Information

Modification of this device without the express authorization of FLIR Commercial Systems, Inc., may void the user's authority under the FCC Rules to operate this device.

Note 1: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with 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. Shielded cables must be used to connect this device to other devices.

Note 2: If ferrites are supplied with this equipment, the equipment was tested for compliance with the FCC limits for a Class A digital device using power cables with the ferrites installed. When connecting one or two power cables to the equipment, the supplied ferrites must be used with this equipment.

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1   PT-Series Camera Installation

This manual describes the installation of the PT-Series cameras. If you need help during the installation process, please call to speak with our support experts (877-773-3547).

This manual includes the following topics:

* Installation Overview
* Mounting the camera and its components
* Connecting the electronics

For safety, and to achieve the highest levels of performance from the PT-Series camera system, always follow the warnings and cautions in this manual when handling and operating the PT-Series camera system.

1.1   Warnings and Cautions

WARNING!

> ⚠️
>
> If mounting the PT-Series camera on a pole, tower or any elevated location, use industry standard safe practices to avoid injuries.

Caution!

> Except as described in this manual, do not open the PT-Series camera for any reason. Disassembly of the camera (including removal of the cover) can cause permanent damage and will void the warranty.
>
> Be careful not to leave fingerprints on the PT-Series camera's infrared optics.
>
> The PT-Series camera requires a power supply of 24 Volts. Operating the camera outside of the specified input voltage range or the specified operating temperature range can cause permanent damage.
>
> When lifting the PT-Series camera use the camera body and base, not the tubes.

1.2   Installation Overview

The PT-Series Camera is a multi-sensor camera system on a pan/tilt platform. Combinations of an infrared thermal imaging camera and a visible-light video camera are intended for outdoor installations.

Shipping plugs only -
Remove before installing

Figure 1-1: PT-Series Camera

The PT-Series camera is intended to be mounted on a medium-duty fixed pedestal mount or wall mount commonly used in the CCTV industry. Cables will exit from the back of the camera housing. The mount must support up to 45 lbs. (20 KG).

The PT-Series camera is both an analog and an IP camera. The video from the camera can be viewed over a traditional analog video network or it can be viewed by streaming it over an IP network using MPEG-4, M-JPEG and H.264 encoding. Analog video will require a connection to a video monitor or an analog matrix/switch. The IP video will require a connection to an Ethernet network switch, and a computer with the appropriate software for viewing the video stream.

The camera can be controlled through either serial or IP communications.
The camera operates on 21 - 30 VAC or 21 - 30 VDC.

In order to access the electrical connections and install the cables, it is necessary to temporarily remove the back cover of the camera housing.

1.3   Installation Components

The PT-Series camera includes these standard components:

• Multi-sensor Pan/Tilt Camera Unit
• Cable Glands and Spare Parts kit
• FLIR Sensors Manager CD
• PT-Series Camera Documentation Package (including installation mounting templates)

The installer will need to supply the following items; the lengths are specific to the installation.

• Electrical wire, for system power. Refer to paragraph 1.8 "Electrical Connections and Schematics" on page 1-7 for additional information)
• Camera grounding strap
• Coaxial RG59U video cables (BNC connector at the camera end) for analog video
• Shielded Category 6 Ethernet cable for control and streaming video over an IP network; and also for software upgrades.
• Optional serial cable for serial communications.
• Miscellaneous electrical hardware, connectors, and tools

1.4   Location Considerations

The camera will require connections for power, communications (IP Ethernet, and/or RS232/ RS422}, and video (two video connections may be required for analog video installations).

Important Note

Install all cameras with an easily accessible Ethernet connection to support future software upgrades.

Refer to paragraph 1.8 "Electrical Connections and Schematics" on page 1-7 for interconnect diagrams showing system configurations.

Ensure that cable distances do not exceed the Referenced Standard specifications and adhere to all local and Industry Standards, Codes, and Best Practices.

Not to scale
All dimensions in inches

Maximum exclusion cylinder
    (Ø25.5" x 17.4" high)

Figure 1-2: PT-Series Pan and Tilt Exclusion Zone

1.5   Camera Mounting

Caution!

> When lifting the PT-Series camera use the camera body and base, not the tubes.

PT-Series cameras must be mounted upright on top of the mounting surface, with the base below the camera. The unit should not be hung upside down.

The PT-Series camera can be secured to the mount with four 5/16 or M8 bolts, as shown below.

Not to scale
All dimensions in inches

2X 2.72 ± .02

0

2X 2.72 ± .02

4X Ø.354 THRU

2X 3.19 ± .02

0

0.28

2X 3.19 ± .02

Tilt Axis

Pan Axis

Figure 1-3: PT-Series Camera Mounting

Once the mounting location has been selected, verify both sides of the mounting surface are accessible.

Important Note

> Connect and operate the camera as a bench test at ground level prior to mounting the camera in its final location.

Use a thread locking compound such as Loctite 242 or equivalent with all metal to metal threaded connections.

Using the template supplied with the camera as a guide, mark the location of the holes for mounting the camera. If the template is printed, be sure it is printed to scale so the dimensions are correct.

Once the holes are drilled in the mounting surface, install four (4) 5/16 or M8 bolts through the base of the camera.

1.6   Prior to Cutting/Drilling Holes

When selecting a mounting location for the PT-Series camera, consider cable lengths and cable routing. Ensure the cables are long enough given the proposed mounting locations and cable routing requirements.

Use cables that have sufficient dimensions to ensure safety (for power cables) and adequate signal strength (for video and communications).

1.7   Removing the Back Cover

Use a cross-tip screwdriver to loosen the six captive screws and remove the cover, exposing the connections at the back of the camera. There is a grounding wire connected between the case and the back cover

1.7.1   Cable Gland Sealing

Proper installation of cable sealing glands and use of appropriate elastomer inserts is critical to long term reliability. Cables enter the camera mount enclosure through liquid-tight compression glands. Be sure to insert the cables through the cable glands on the enclosure before terminating and connecting them (the connectors will not fit through the cable gland). Leave the gland nuts loosened until all cable installation has been completed. Inspect and install gland fittings in the back cover with suitable leak sealant and tighten to ensure water tight fittings. Teflon tape or pipe sealant (i.e. DuPont RectorSeal T™) are suitable for this purpose.

1.7.2   Cable Glands and Spare Parts Kit

The kit contains the two 3/4" cable glands and gland seal plugs required for non-conduit installations.

The remaining parts included in the kit are:

- a spare ground wire
- a spare ground nut and lock washer
- two spare power terminal block plugs
- two spare serial port terminal block plugs
- four spare F-Series back cover screws
- four spare PT-Series back cover screws

1.7.3   Cable Gland Seal Inserts

The PT-Series camera comes with two 3/4" NPT cable glands, each with a three hole gland seal insert. Cables may be between 0.23" to 0.29" od. Up to six cables may be installed. Plugs are required for the insert hole(s) not being used. The photograph at the right shows two power cables, an Ethernet cable, a serial control cable (no analog video is installed), and two gland seal plugs.

If non-standard cable diameters are used, you may need to locate or fabricate the appropriate insert to fit the desired cable. FLIR Commercial Systems, Inc. does not provide cable gland inserts other than what is supplied with the system.
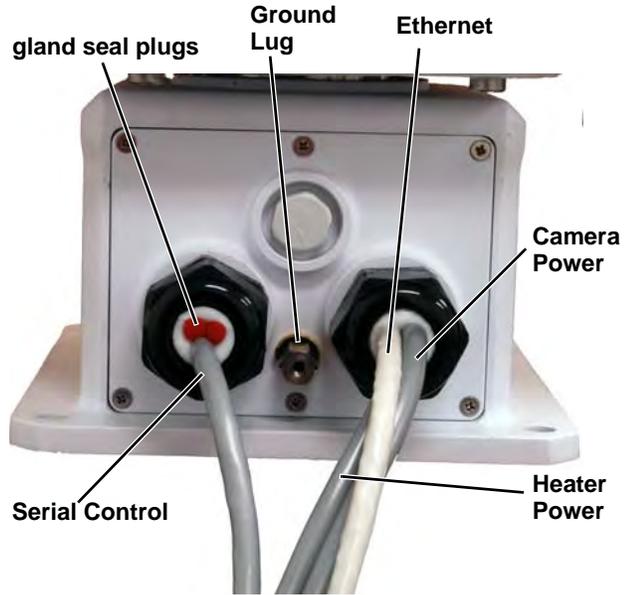
Note

Insert the cables through the cable glands on the enclosure before terminating and connecting them. (In general, the terminated connectors will not fit through the cable gland.) If a terminated cable is required, you can make a clean and singular cut in the gland seal to install the cable into the gland seal.

1.8   Electrical Connections and Schematics
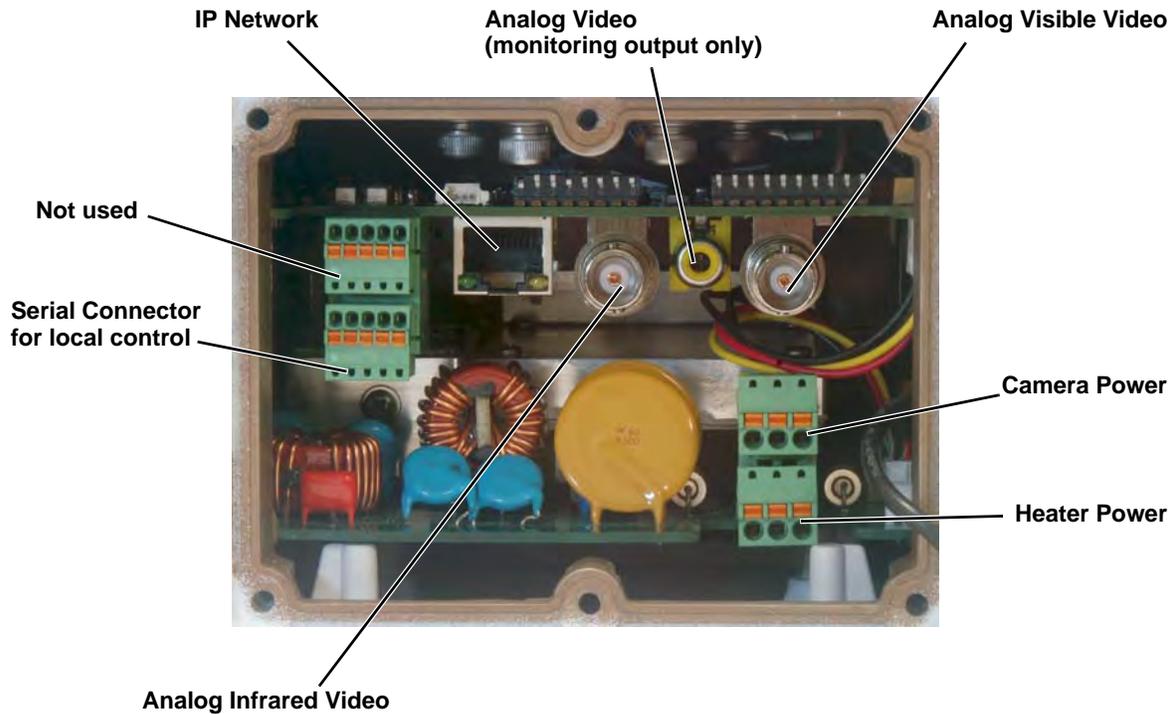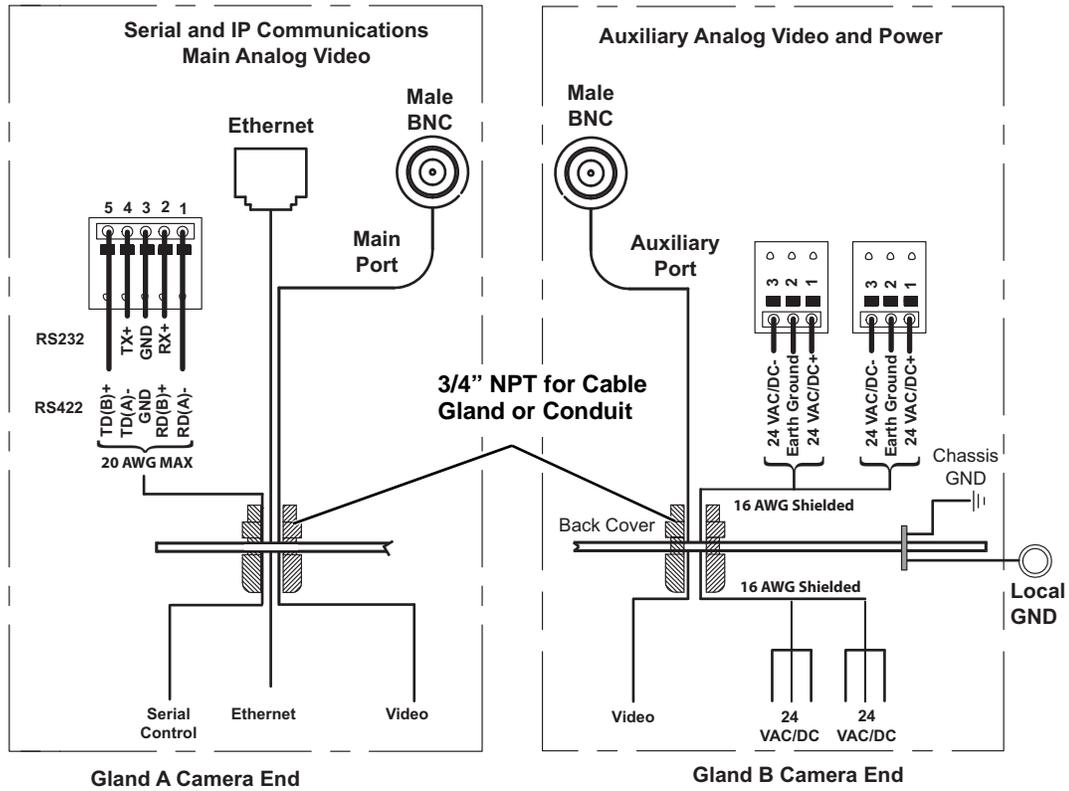

Figure 1-4: PT-Series Camera Connections

1.9   Connecting power

The camera itself does not have an on/off switch. Generally the PT-Series camera will be connected to a circuit breaker and the circuit breaker will be used to apply or remove power to the camera. If power is supplied to it, the camera will be in one of two modes: Booting Up or Powered On.

The power cable supplied by the installer must use wires that are sufficient size gauge (16 AWG recommended) for the supply voltage and length of the cable run, to ensure adequate current carrying capacity. Always follow local building codes!

Ensure the camera is properly grounded. Typical to good grounding practices, the camera chassis ground should be provided using the lowest resistance path possible. FLIR requires using a grounding strap anchored to the grounding lug on the back plate of the camera housing and connected to the nearest earth-grounding point.

Note

The terminal blocks for power connections will accept a maximum 16 AWG wire size.

1.10 Video Connections

The analog video connections on the back of the camera are BNC connectors.

The video cable used should be rated as RG59U or better to ensure a quality video signal.

1.11 Ethernet Connection

The cable gland seal is designed for use with Shielded Category 6 Ethernet cable.

1.12 Serial Communications Overview

The installer must first decide if the serial communications settings will be configured via hardware (DIP switch settings) or software. If the camera has an Ethernet connection, then generally it will be easier (and more convenient in the long run) to make configuration settings via software. Then configuration changes can be made over the network without physically accessing the camera. Also the settings can be saved to a file and backed up or restored as needed.

If the camera is configured via hardware, then configuration changes in the future may require accessing the camera on a tower or pole, dismounting it, and removing the back and so on. If the camera does not have an Ethernet connection, the DIP switches must be used to set the serial communication options.

Important Note

The serial communications parameters for the PT-Series camera are set or modified either via hardware DIP switch settings or via software, through a web browser interface. A single DIP switch (SW102-9, Software Override determines whether the configuration comes from the hardware DIP switches or the software settings.

Note

The DIP switches are only used to control serial communications parameters. Other settings, related to IP camera functions and so on, must be modified via software (using a web browser).

1.13 Serial Connections

For serial communications, it is necessary to set the parameters such as the signalling standard (RS-232 or RS-422), baud rate, number of stop bits, parity and so on. It is also necessary to select the communication protocol used (either Pelco D or Bosch) and the camera address.

The camera supports RS-422 and RS-232 serial communications using common protocols (Pelco D, Bosch). For configuration settings see paragraph 1.14 "Setting Configuration Dip Switches" on page 1-9.

Note

The terminal blocks for serial connections will accept a maximum 20 AWG wire size.

1.14 Setting Configuration Dip Switches

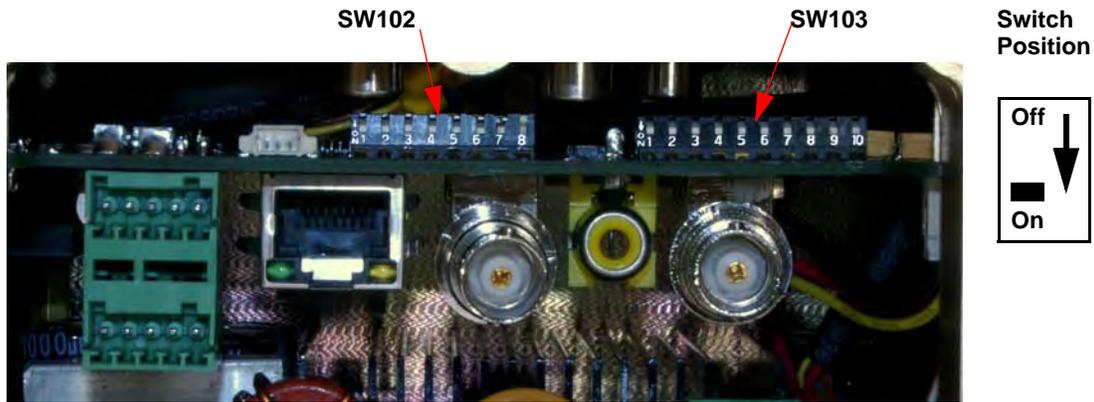The figure below shows the locations of dip switches SW102 and SW103.

Figure 1-5: PT-Series Camera Configuration

Pelco Address: This is the address of the system when configured as a Pelco device. The available range of values is from decimal 0 to 255.

Table 1-1: Dip Switch Address/ID Settings—SW102

ID	Bit 1	Bit 2	Bit 3	Bit 4	Bit 5	Bit 6	Bit 7	Bit 8
0	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
1	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF
2	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF
3	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF
…	…	…	…	…	…	…	…	…
255	ON	ON	ON	ON	ON	ON	ON	ON

Other Serial Communication Parameters. The tables below defines the switch locations, bit numbering and on/off settings.

Table 1-2: Dip Switch Settings—SW103

	Settings		Description
Baud rate: This is the baud rate of the system user serial port. The available values are 2400, 4800, 9600, 19200 kbaud.	**Bit 1**	**Bit 2**	
	OFF	OFF	2400
	ON	OFF	4800
	OFF	ON	9600
	ON	ON	19200
Camera Control Protocol: This is the communication protocol selected for the system when operating over the serial port. The available protocols are Pelco-D and Bosch.	**Bit 3**	**Bit 4**	
	OFF	OFF	Pelco-D
	ON	OFF	NA
	OFF	ON	Bosch
	ON	ON	NA
Serial Communication Standard: This determines the electrical interface selected for the user serial port. The available settings are RS422 and RS232.	**Bit 5**	**Bit 6**	
	OFF	OFF	NA
	ON	OFF	RS422
	OFF	ON	RS232
	ON	ON	N/A
Not Used	**Bit 7**	**Bit 8**	
	X	X	
	X	X	
	X	X	
	X	X	
Software Override DIP Switch: This setting determines whether the system will use software settings for configuration or if the dip switch settings will override the software settings. Default is Off.	**Bit 9**		
	OFF		Software select
	ON		Hardware select
Not Used	**Bit 10**		
	X		

1.15 PT-Series Camera Specifications

THERMAL CAMERA SPECS

Resolution	160 x 120	320 x 240	640 x 480
Detector Type	Long-Life, Uncooled VOx Microbolometer		
Pixel Pitch	25 μm	25 μm	17 μm
Focal Length (lens/model dependent)	9 mm, 13 mm, 19 mm	9 mm, 13 mm, 19 mm, 35 mm, 65 mm, 100 mm	13 mm, 25 mm, 35 mm, 50 mm, 65 mm, 100 mm
Field Of View (lens/model dependent)	24° × 20° (PT-124; 9 mm) 17° × 14° (PT-117; 13 mm) 12° × 10° (PT-112; 19 mm)	48° × 39° (PT-348; 9 mm) 34° × 28° (PT-334; 13 mm) 24° × 19° (PT-324; 19 mm) 13° × 10° (PT-313; 35 mm) 7° × 5° (PT-307; 65 mm) 4.6° × 3.7° (PT-304; 100 mm)	45° × 37° (PT-645; 13 mm) 25° × 20° (PT-625; 25 mm) 18° × 14° (PT-618; 35 mm) 12° × 10° (PT-612; 50 mm) 10° × 8° (PT-610; 65 mm) 6.2° × 5° (PT-606; 100 mm)
Zoom (model dependent)	2x E-zoom	2x & 4x E-zoom	2x & 4x E-zoom
Spectral Range	7.5 μm to 13.5 μm		

OUTPUTS

Composite Video NTSC or PAL	Standard
Video Over Ethernet	Two independent channels of streaming MPEG-4, H.264, or M-JPEG for each of two cameras.

CONTROL

Point To Point (stand alone)	Standard
Ethernet	Standard
Serial	RS-232/-422; Pelco D, Bosch
Network Enabled	Standard

PAN/TILT PERFORMANCE

Pan Angle/Speed	Continuous 360°; 0.1° to 70°/sec
Tilt Angle/Speed	+90° to -90°; 0.1° to 30°/sec

GENERAL

Weight	36 lb (configuration dependent)
Dimensions (L,W,H)	13.7" × 18.4" × 12.8" (348 mm × 467 mm × 326 mm)
Power Requirements	24 VAC (21-30 VAC) 24 VDC (21-30 VDC)
Power Consumption	24 VAC: 85 VA max no heater, 215 VA max w/heater 24 VDC: 65 W max no heater, 195 W max w/heater
Inrush Current	<10 A for DC power supply with slew rate > 10 ms <38 A for AC power supply with slew rate > 4.17 ms

ENVIRONMENTAL

Dust, Water Protection Rating	IP66
Operating Temperature	-40°C to +55°C (-40°F to +130°F)

DAY/NIGHT CCD CAMERA

DAY/NIGHT CCD CAMERA	Sony FCB-EX1010
Sensor Type	1/4" Exview HAD CCD
Lens Field Of View	57.8° (h) to 1.7° (h)
Focal Length	3.4 mm to 122.4 mm
Zoom	36x Optical zoom, 12x E-zoom
F/#	1.6 to 4.5
Effective pixels (NTSC)	380,000

Note

Power consumption is independent of the input voltage when the heater is off. The power drawn by the heaters increases with the input voltage to a maximum at 30 Volts.

2 Verify Camera Operation

Prior to installing the camera, use a bench test to verify camera operation and configure the camera for the local network. The camera provides analog video and can be controlled through either serial or IP communications providing streaming video over an IP network.

2.1 Power and analog video

Step 1   Connect the power, video, and serial cables to the camera as described in paragraph 1.8 "Electrical Connections and Schematics" on page 1-7.

Step 2   Connect the video cable from the camera to a display/monitor and connect the power cable to a power supply.
The camera operates on 21 - 30 VAC or 21 - 30 VDC.
Verify that video is displayed on the monitor.

Step 3   Connect the serial cable from the camera to a serial device such as a keyboard, and confirm that the camera is responding to serial commands.

Before using serial communications, it may be necessary to configure the serial device interface to operate with the camera. When the camera is turned on, the video temporarily displays system information including the serial number, IP address, Pelco address, Baud rate, and setting of the serial control DIP switch: SW - software control (the default) or HW - hardware.

S/N: 1234567
IP Addr: 192.168.250.116
PelcoD (Addr:1): 9600 SW

2.2 Verify IP Communications

As shipped from the factory, the PT-Series camera has an IP address of 192.168.250.116 with a netmask of 255.255.255.0.

Step 1   Configure a laptop or PC with another IP address from this network (for example, 192.168.250.1).

Step 2   Connect the camera and the laptop to the same Ethernet switch (or back-to-back with an Ethernet crossover cable).[1]

Step 3   Open a web browser, enter **http://192.168.250.116** in the address bar, and press Enter.

The Web Configurator will start at the Login screen. If the Login screen appears, then you have established IP communications with the camera. It is not necessary to log in and use the Web Configuration tool right away. At this time, perform a bench test of the camera using the FLIR Sensors Manager software and the factory configured IP address. Refer to paragraph 2.3 "Using FLIR Sensors Manager (FSM)" on page 2-2.

PT-Series

1. In some cases, a straight Ethernet cable can be used, because many PCs have auto detect Ethernet interfaces.

2.3   Using FLIR Sensors Manager (FSM)

The following provides a brief description of how to use FSM to control a camera and stream video from the camera. For more detailed information on how to use FSM, refer to the FLIR Sensors Manager User Manual.

If the FSM software has not been installed yet, locate the CD that came with the camera and install it on the PC.

2.3.1   Running FSM

Step 1   Run the FSM software by double clicking the icon on the desktop, or click on the Windows Start button and select Programs > FLIR Sensors Manager > FLIR Sensors Manager.

Initially the FLIR Sensors Manager splash screen will be displayed. The software version may be different than the version displayed below.

After a brief while, the FSM main window will appear, and a popup FSM Notification window will appear in the lower right of the screen indicating that no cameras (servers) have been discovered yet.

Step 2   Click on the Accept button to acknowledge the notification.
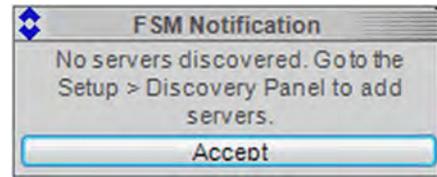
The FLIR Sensors Manager uses a "client/server" architecture. The FSM software is considered a client, and the cameras are considered servers or sensors.
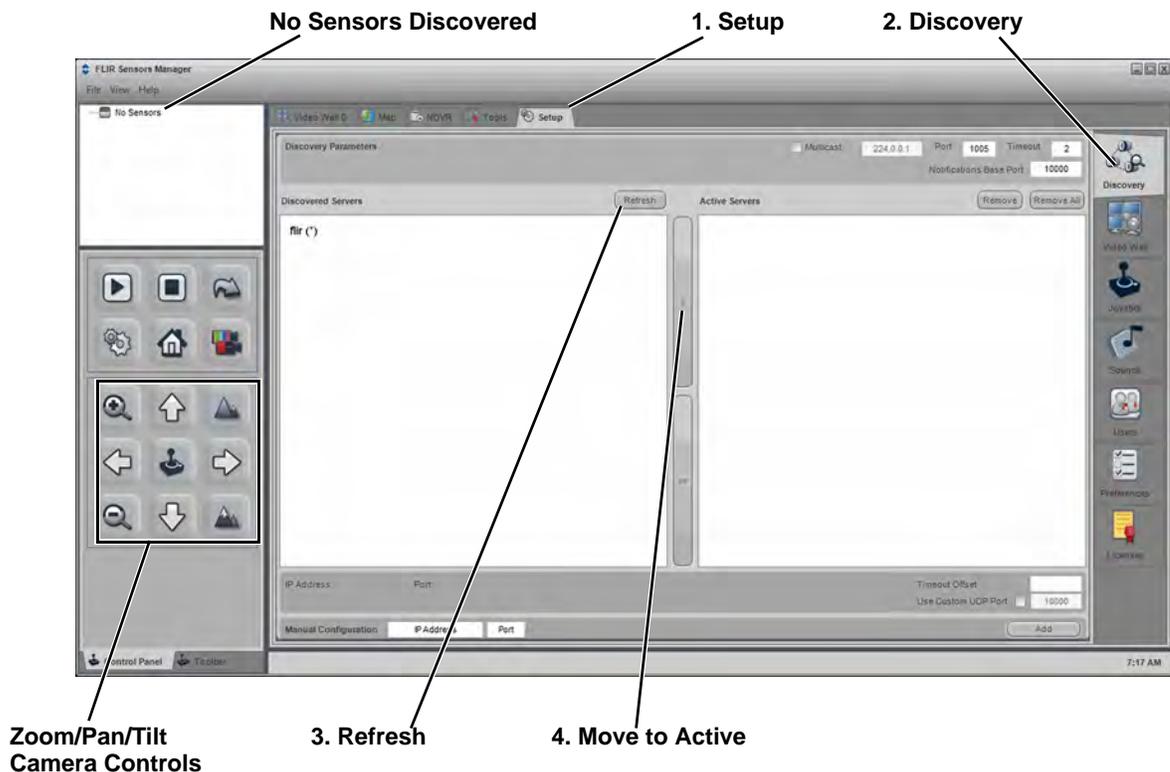
The Sensors Panel in the upper left of the window indicates no sensors have been discovered and added to the list of Active Sensors.

Step 3   Click on **Setup**, if required, then the **Discovery** button on the side panel to bring up the Discovery Panel. The FSM software can automatically discover FLIR cameras on the network.

Step 4   When the Discovery Panel is displayed, click Refresh.
The FLIR camera will appear in the list of Discovered Servers. The camera will be called "flir", and the asterisk in parenthesis "(*)" indicates the camera has not been added to the list of Active Servers on the right.

Step 5   Click on the center bar ">" to move the camera over to the list of Active Servers.

By default, the FSM software will automatically discover sensors in the network, connect to the first camera it finds, take control of the camera, and display the video from the camera in Video Wall 0.

No Sensors Discovered   **1. Setup**   **2. Discovery**

Zoom/Pan/Tilt Camera Controls   **3. Refresh**   **4. Move to Active**

Step 6 Confirm that video is streamed to the monitor and it is possible to control the camera using the zoom controls and so on. For example, click on the zoom button (magnifying glass with +), and the video will zoom to 2X. Once operation of the camera has been confirmed, the camera can be configured to an IP address that matches the installation network.

Step 7 Return to the Web Configurator screen shown at the right and select **Login as Basic User** or enter **basic** as the User and click **Login**.
No password is required.

The Web Configurator will display the Help screen listing information on the camera's software and hardware configuration.
The menu on the left allows you to select various configuration web pages in order to set the camera parameters. See "PT-Series Configuration" on page 2-5.

2.4   PT-Series Configuration

After logging in, the Help screen is displayed. This screen has information about the camera including hardware and software revision numbers, part numbers, and serial numbers. If you need to contact FLIR for support, this information will be useful to the support engineer. Use the Menu entries at the left of the screen shown in Figure 2-1 to configure the PT-Series camera.
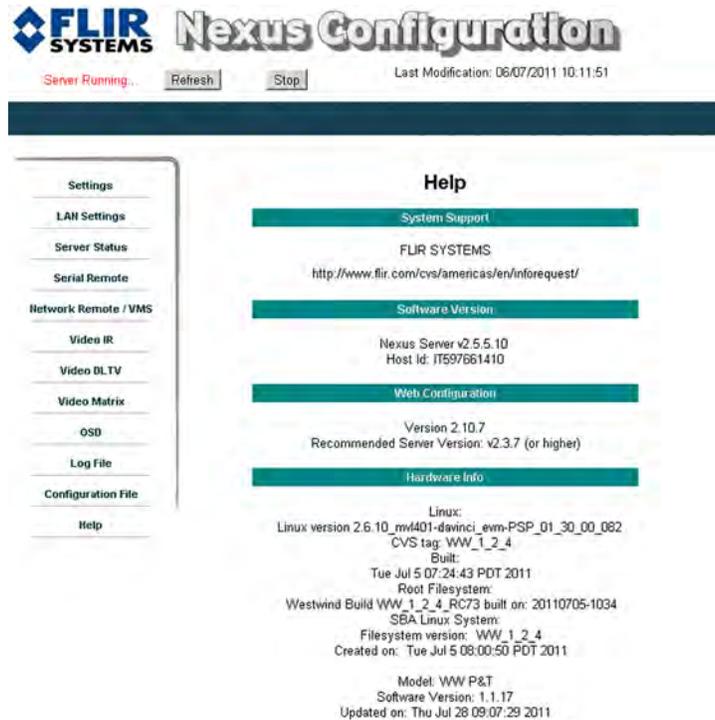

Figure 2-1: Web Configurator Help Screen

The following paragraphs show the pages for setting serial communication parameters and setting a new IP address for a camera on a local area network.

2.4.1   Set the Date and Time

Step 1   Click **Server Status**. The screen at the right will be displayed.

Step 2   Set the Timezone from the pull down menu. Click **Set**.

Step 3   Set the Date Format from the pull down menu. Click **Set**.

Step 4   Set the Date by typing in the dialog boxes. Click **Set**.

Step 5   Set the Time by typing in the dialog boxes. Click **Set**.

2.4.2   Serial Remote Menu

The settings you make in this screen will become active when the software override DIP switch is set to Off (the default) allowing software settings to control the camera. Refer to paragraph 1.14 "Setting Configuration Dip Switches" on page 1-9.

Step 1   Click **Serial Remote**. The screen at the right will be displayed.

Step 2   Select the Protocol for your serial control configuration (**Pelco-D Serial Remote** in this example).

Step 3   Select Device ID: **1** to see the Pelco-D advanced settings. (If you selected Bosch Serial Remote in 2 above, you will select Device ID: **2** to see the Bosch advanced settings.)

Step 4   Enter the parameters for your specific location.

Step 5   Scroll down to see more advanced settings.
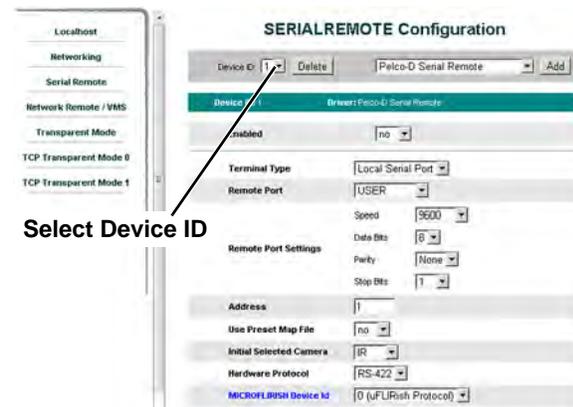
Select Device ID

Scanlist Serial Control

Step 1   Scroll down until you see the Advanced Settings section shown in the screen at the right.

Step 2   Enter the scanning parameters for your specific location.

2.4.3   Digital Video Configuration—Video IR and Video DLTV

Note

When defining the ports for digital video, streams are setup sequentially; 0, 1, 2, and 3. If a stream is enabled, the server will use the RTP/RTSP over HTTP port parameter to define the port number (if left blank, 8080 is used). A subsequent stream's configuration takes precedence so the same port needs to be defined for all enabled video streams. (But actually you could really only define a non-default port for the last video stream configured.)

Step 1   Click **Video IR**. The screen at the right will be displayed.

Step 2   Enter the parameters for your IR video stream.

The IR Stream Name contains the connection string for the IP video. The default value recognized by FSM as ch0 is: rtsp://192.168.250.116/ch0. Enter the appropriate IP video connection string for your installation.

Step 3   Click **Video DLTV**. The screen at the right will be displayed.

Step 4   Enter the parameters for your Visible video stream.

The DLTV Stream Name contains the connection string for the IP video. The default value recognized by FSM as ch2 is: rtsp://192.168.250.116/ch2. Enter the appropriate IP video connection string for your installation.

2.4.4   Analog Video Configuration—Video Matrix

Click **Video Matrix** The screen at the right will be displayed.

The PT-Series camera provides two analog video ports: Main and Auxiliary.

• You can select the source of each port from this screen.

• Set the Device type (set Device ID) for each source.

• Set Picture-In-Picture (PIP) for each port.

2.4.5   Configuration File

Step 1   Click **Configuration File**. The screen at the right will be displayed.

Shown at the top of the screen is the .ini file in a scrollable window. This can help if you ever need help from a support engineer.

Step 2   Click **Restore** in the Factory Backup and Restore section to reconfigure the file to the settings sent from the factory. This file can not be modified or deleted, so it is always available.

Step 3   In the Customer Backup and Recovery section, make a backup of your final custom settings.

Step 4   In the Upload and Download section, download a copy to a different network location for safe keeping.
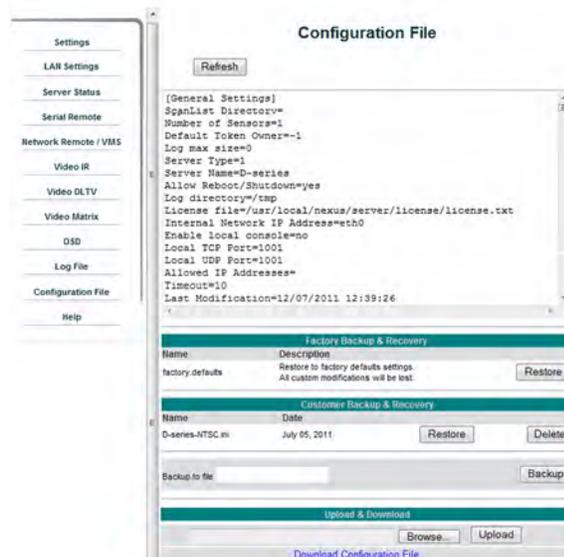
2.4.6   LAN Settings

As the final step in configuring the camera on the bench, you may want to insert a new IP address appropriate for the local area network receiving the camera. Once you are finished with this process you typically will no longer be able to access the camera from the same PC used to see the default IP address.

Step 1   Click **LAN Settings**. The screen at the right will be displayed.

Step 2   Enter the Hostname, Gateway, IP Address, and Netmask that are appropriate for the local area network. Then click Save.

A message will appear indicating the IP address has been changed and the browser will no longer be able to communicate with the camera.

You must connect the camera to an appropriate local area network (LAN) and connect to the camera using its new IP address.
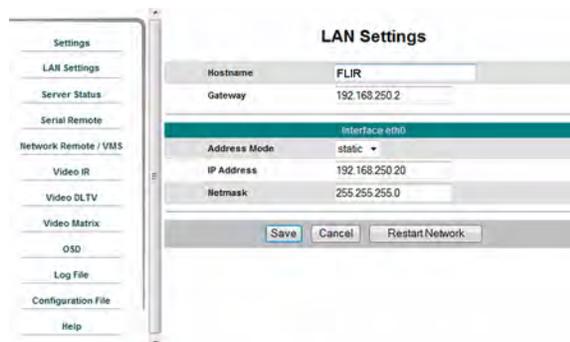
A   Mechanical ICD Reference

The following Mechanical Interface Control Document detail the outline and mounting for the PT-Series cameras. These documents are provided for reference only. You should consult your local sales representative or application engineer to obtain current ICD information. Also, the PT-Series Thermal Imaging Camera Core Data Sheet available from the website contains important mechanical interface data as well.

FLIR

NOTES: UNLESS OTHERWISE SPECIFIED

1. ARRANGEMENT SHOWN FOR REAR CABLE ACCESS

18.4

6.4

2X 13.7

TILT & PAN AXIS
INTERSECTION

6.4   6.4

TILT AXIS ℄

2X 12.8

2X 9.9

6.4   .3

PAN AXIS
+90 DEGREES
MAX TILT
POSITION

180.00°

17.4

2X HEYCO STRAIN RELIEF
INTO 3/4 NPT HOLE

7.3

-90 DEGREES
MIN TILT
POSITION

2X 1.5

1.0   1.0

℄
PAN AXIS

2X 2.72±.02   2X 2.72±.02

0

4X ∅.354 THRU

FULL 360 DEGREE ROTATION
(PAN VOLUME - @ ITS MIN DIA.)
∅25.5

2X 3.19±.02

0
.28

2X 3.19±.02

TILT & PAN AXIS
INTERSECTION

MOUNTING BASE CONFIGURATION

GROUND LUG

DETAIL A
SCALE 1 : 1

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