interlogix

A UTC Fire & Security Company

TruVision PTZ 36X Camera User Manual

Content

Chapter 1
Product introduction

Product overview

The TruVision PTZ 36X Camera is an innovative camera designed for middle and small surveillance applications. It possesses true PTZ camera features and has a graphical programming interface for easier customization of camera settings.

The TruVision PTZ 36X Camera can be integrated with digital surveillance products such as DVRs, control keypads and various accessories for a total surveillance solution. The dome camera incorporates several protocols to enhance control and connectivity.

The dome camera is ideal for all surveillance requirements in a wide variety of buildings such as hotels, department stores, intelligent buildings, amusement parks, parking lots, factories, hospitals, schools, and stations.

Features

This section describes the TruVision PTZ 36X Camera features.

Precise and accurate dome camera performance

- High resolution: 650 TV lines

- Preset speed up to 400°/sec

- 360° endless pan

- Proportional pan and tilt speed

- Preset positions / Autopan / Sequence / Cruise

- Auto-calibration

- -10° to +190° tilt with digital image flip

Dynamic Dome applications

- Schedule function

- Multiple built-in protocols

- Lightweight design for easy installation

- Flexible indoor / outdoor mountings

- 20 privacy masks

- 4 alarms and 2 relays

- Weatherproof, IP66 (Outdoor models)

Superior dome camera image quality

- 36X optical zoom

- 12X digital zoom

- Wide Dynamic Range

- Electronic Image Stabilization

- Digital auto slow shutter

- Backlight compensation

- Auto focus

- Auto white balance

- Auto gain control

- Auto iris control

- Removable IR cut filter

- Minimum illumination: 0.1 Lux (Color), 0.01 Lux (B/W)

- 2D / 3D video noise reduction

System requirements

For proper operation, adhere to the following operational, cable, and power requirements for TruVision PTZ 36X Cameras.

Figure 1: Example of a system
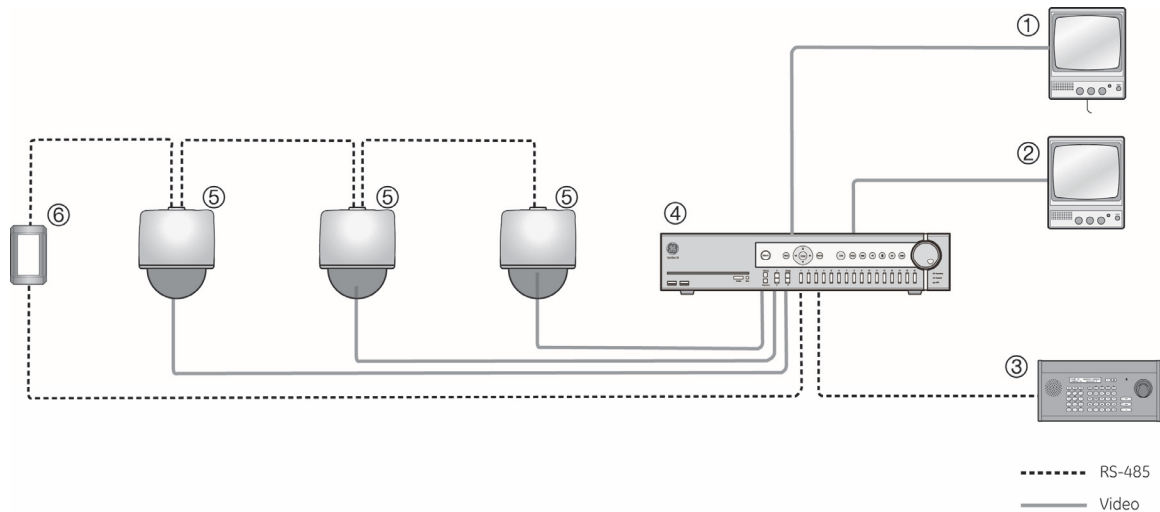
1. Monitor A	4. DVR /Multiplexer/ Quad/ Switcher
2. Monitor B	5. Dome camera
3. Control keypad	6. Repeater

Cable requirements

Table 1 below lists the requirements for the cables that connect to the dome camera.

Table 1: Recommended cable requirements

Operation	Cable requirement	Max. length	
		feet	meters
Data (RS-485)	STP (shielded twisted-pair) cable Cat-5 cable recommended. If the total cable length exceeds 1219 m (4000 feet), using a repeater to maintain the signal is recommended.	4000	1219
Video	75 ohm RS-59 coaxial cable with BNC ends		
Alarm	Cat-5 cable recommended.	1250	381
Power	24 VAC cable. To determine the size of cable needed for individual applications, see "Power cable size and length requirements" on page 4.		

Power cable size and length requirements

Using the proper gauge of power cable will ensure proper operation and avoid voltage drops. See Table 2 below for the recommended cable gauge for varying maximum cable lengths and power draws.

Table 2: Recommended power cable gauges based on maximum lengths for an operating voltage of 24 VAC (±10%)

Wire gauge		Indoor dome cameras (14 W)		Outdoor dome cameras (54 W)	
AWG	mm (diameter)	feet	meters	feet	meters
10	2.59	2061	628	534	163
12	2.05	1294	394	335	102
14	1.63	813	247	211	64
16	1.29	512	156	133	41
18	1.02	322	98	83	25
20	0.81	203	62	53	16
22	0.64	127	39	33	10

Chapter 2
Installation

This chapter provides information on how to install the dome camera.

Use a control keypad or device, such as the Interlogix KTD-405/KTD-405-2D keypad, to control the dome camera.

Installation environment

When installing your product, consider these factors:

- **Handling**: Handle the camera carefully. Avoid striking, shaking, etc. Improper handing or storage could damage the camera.

- **Electrical**: Install electrical wiring carefully. It should be done by qualified service personnel. The input electricity to the unit has a tolerance of 24 VAC ± 10%. Do not overload the power cord or adapter.

- **Ventilation**: Ensure that the location planned for the installation of the camera is well ventilated.

- **Temperature**: Do not operate the camera beyond the specified temperature, humidity or power source ratings. The operating temperature of the indoor camera is 0°C to 40°C (32°F to 104°F) and that of the outdoor camera is -40°C to 50°C (-40°F to 122°F). Maximum operating humidity is 90%.

- **Moisture**: Do not expose the indoor camera to rain or moisture, or try to operate it in wet areas. The indoor camera is designed for indoor use or locations only where it is protected from rain and moisture. Turn the power off immediately if the camera is wet and ask a qualified service person for servicing. Moisture can damage the camera and also create the danger of electric shock.

- **Cleaning**: Clean only with a dry cloth. If the dirt is difficult to remove, use a mild liquid non-abrasive detergent and wipe gently.

- **Protect from bright light**: Never face the camera towards the sun. Do not aim the camera at bright objects. Whether the camera is in use or not, never aim it at the sun or other extremely bright objects. Otherwise, the camera may be damaged.

- **Servicing**: Do not attempt to service this camera yourself. Any attempt to dismantle or remove the covers from this product will invalidate the warranty and may also result in serious injury. Refer all servicing to qualified service personnel.

Unpacking the dome camera

When you receive the product, check the package and contents for damage, and verify that all items are included. If any of the items are damaged or missing, please contact your local supplier.

Items shipped with the indoor (Figure 2 below) and outdoor (Figure 3 on page 7) dome cameras include:

Figure 2: Indoor dome camera contents
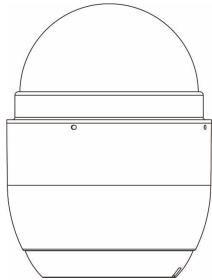
Dome camera and 6" bubble   Hard ceiling mount   User manual
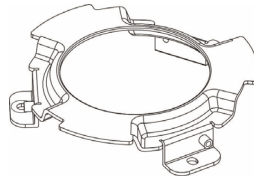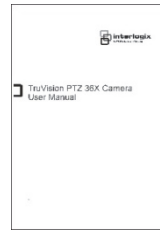
M4 screws (X4) and plastic
anchors (X4)

Figure 3: Outdoor dome camera contents

Dome camera, housing top cap, and
6" bubble

User manual

Security screws (X4):

- M3 standard screw (x1)
- M3 security screw (x1)
- M5 standard screw (x1)
- M5 security screw (x1)

Waterproof top cap boot

Security TORX wrench

Container of gasket lubricant (not shown)

3-pin 24 VAC power connector (not shown)

5-pin RS-485 connector (not shown)
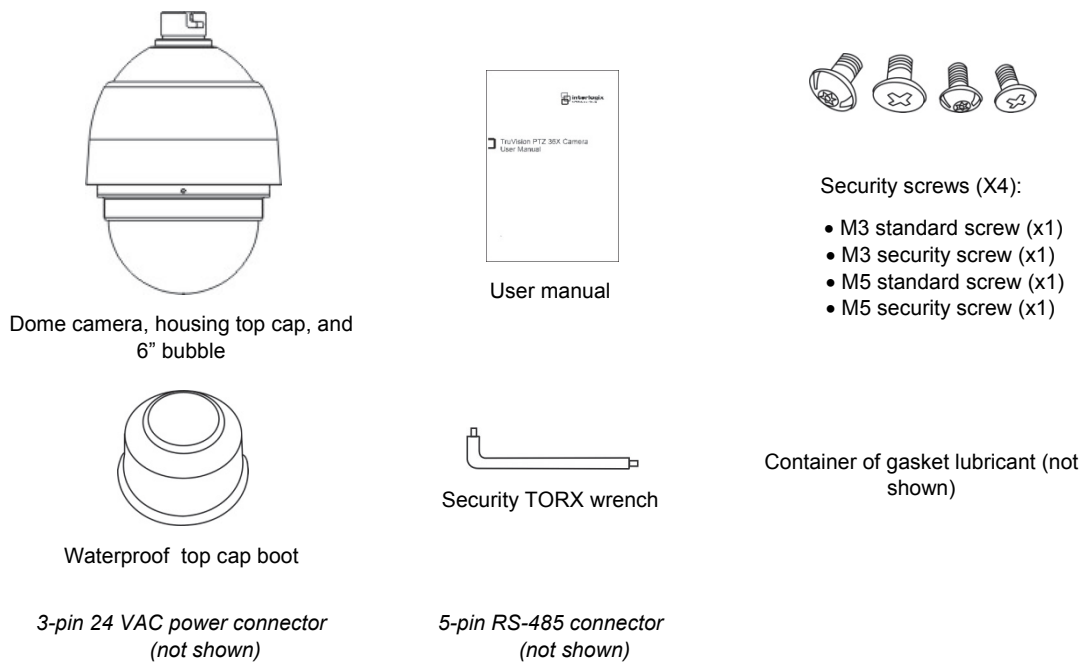
Removing the protective shipping materials

The outdoor dome camera is shipped with a protective tape and PE sheet on the dome camera for protection. These must be removed before installation.

To remove the shipping materials:

1. Unpack the dome camera.

2. Remove the bubble assembly from the dome housing by placing your hands on the plastic ring and pushing up (away from the dome housing) on the bubble assembly. The bubble assembly is only held in place by compression, due to the gasket.

3. Remove the protective sheet.
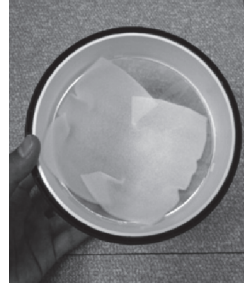
4. Remove the protective tape on top of the camera block and lens cover.

5. Apply a small amount of lubricant on the surface of the waterproof rubber gasket.

6. Re-attach the bubble assembly to the dome camera body by first aligning the center point (dimple) on the bubble assembly with one of the four holes in the dome camera housing, as shown.

7. Place both hands on the bubble assembly ring and gently press down the bubble assembly. Make sure that the holes on the bubble assembly align with the holes in the dome camera housing.

Caution: Do not press on the top of the bubble as shown in the figure as it might damage the unit.

8. Secure the bubble assembly to the dome camera housing with the supplied security screw. Use the supplied security TORX wrench to tighten the security screw.

9. Further secure the bubble assembly in place by loosening (unscrewing) the two slotted screws that are located on the bubble assembly so that they are flush with the outside edge of the dome camera housing.

10. Remove the plastic protective sheet from the bubble.

11. Set the DIP switches.

Setting up the dome camera

To quickly put the TruVision PTZ 36X Camera into operation:

1. Configure the dome camera's DIP switches, which are located on the top of the dome camera.

2. Set the dome camera communication protocol.

3. Set the RS-485 communication DIP switch.

4. Verify and set the communication termination, if required.

5. Set the dome camera ID.

6. Mount the dome camera.

7. Wire the dome camera.

8. Connect the dome camera to a monitor.

9. Program the dome camera.

DIP switches and connectors

Configure the dome camera's ID and communication protocol before connecting the analog dome camera to other devices. The DIP switches used for configuring these settings are located on the top of the dome camera housing. See Figure 4 below for the location of the DIP switches on both the indoor and outdoor dome cameras.

Figure 4: Dome camera DIP switch location

| Indoor dome camera | Outdoor dome camera |

A. Alarm I/O   E. Camera protocol setting

B. Dome camera site ID DIP switches   F. RS-485 connector
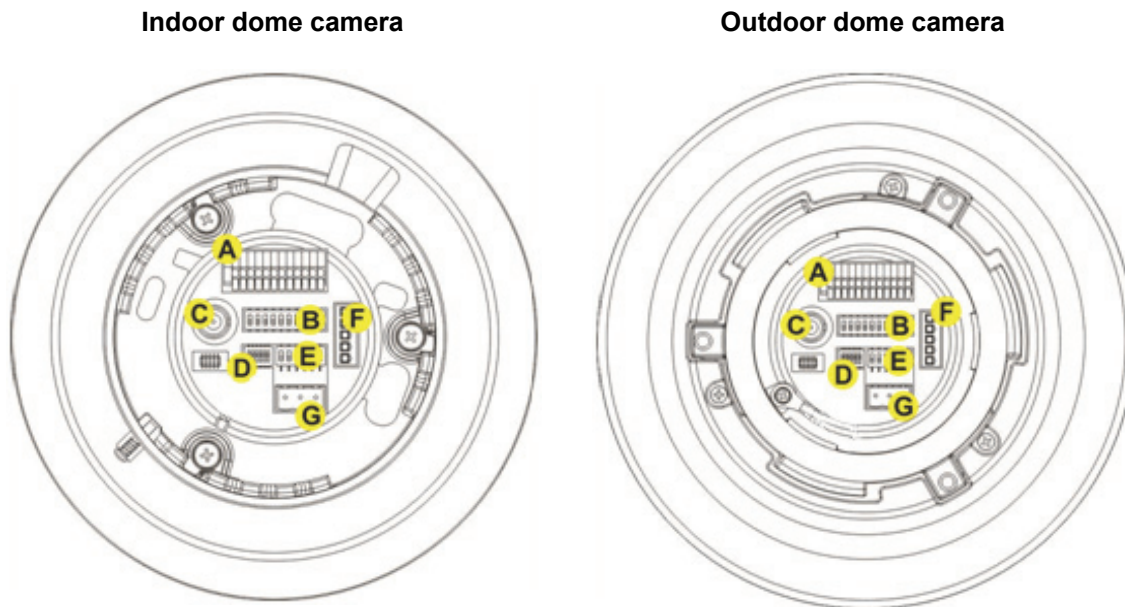
C. BNC Video Output   G. 24VAC power connector

D. Communication switch setting

See the following sections on how to setup the ID and control protocol of the dome camera.
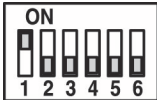
Setting the dome camera communication protocol

The TruVision PTZ 36X Camera can use several different protocols for communication. To select a protocol, you must set the protocol DIP switches to the correct sequence of 1s (on) and 0s (off).

To set a dome camera protocol using the DIP switches:

1. Locate the protocol DIP switch block (see E, Figure 4 on page 10).

2. Using Table 3 below, find the DIP switch sequence for the desired protocol and set the switches accordingly.

Table 3: Protocols supported

Protocol	Baud rate	Switch position	
INTERLOGIX Impac RS-485	9600	000000	
INTERLOGIX Digiplex RS-422	4800	100000	
Pelco D	2400	010000	
Pelco D	4800	110000	
Pelco D	9600	001000	
Pelco P	2400	101000	
Pelco P	4800	011000	

Protocol	Baud rate	Switch position	
Pelco P	9600	111000	
Philips	9600	000100	
AD422	4800	100100	
JVC	9600	010100	
Panasonic	19200	11010	
VCL	9600	001100	
DSCP	9600	101100	
DMP	9600	011100	
Chiper	9600	111100	
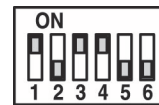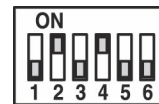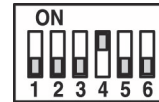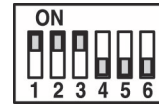
Functions supported by third party protocols

Table 4: Functions supported

Function	Key commands			
	Pelco	**AD 422**	**VCL**	**Philips**
Enter menus	Preset 95	Preset 94 (alternate Preset 77)	Wipe or Preset 77	Preset 77
Exit menus	Preset 95	Preset 95	Preset 97	Preset 77
Select/enter in menus	Iris+	Iris+	Iris+	Iris+
Set auto pan limits	Preset 92 and 93	Preset 62 and 63		
Start auto pan	Preset 99	Preset 79	Preset 79	On – 2 - Enter
Play Cruise #1	Pattern #1	Preset 65	1 + Autopan	Preset 70 – 76 = S Tours 1-7, Preset 78 = S Tours 8
Play Sequence #1	Preset 98	Preset 70	Preset 70	On – 8 - Enter
Turn 180 degrees on pan	Preset 33	N/A	N/A	On – 1 - Enter
Show splash screen	N/A	N/A	N/A	On – 997 - Enter

Setting the RS-485 communication

RS-485 is the interface that connects the dome camera to the control device. Consequently the RS-485 setup of the dome camera and the control device must be identical.

Locate the communication DIP switch block (see D, Figure 4 on page 10). See Figure 5 for a depiction of the communication DIP switches of the dome camera.

The RS-485 default setting is half-duplex (see Figure 5). This setting should only be changed by a qualified CCTV specialist. DIP switches SW3 and SW4 are used for termination and Line Lock adjustment respectively. The SW5 DIP switch is used to restore the dome camera to the factory default status.

Figure 5: RS-485 setting
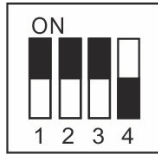
Half-duplex (Default)
(Switches 5 & 6 are unused)

Full-duplex
(Switches 5 & 6 are unused)

Setting the dome camera site ID

Before turning on the dome camera, you must set the dome camera site ID. Each dome camera connected to the same network must have a unique ID. Use the 10-bit DIP switch to set the dome camera's site ID setting.

To set a dome camera site's ID:

1. Locate the dome camera site ID DIP switch block (B, Figure 4 on page 10).

2. Using Table 5 below, determine which DIP switches need to be set to the on position. The equivalent value of the switches will add up to create the site ID number for that dome camera. See Figure 6 on page 16 for an example.

3. Place the switches that correspond to those values in the On position.

4. Carefully record the site ID of each dome camera installed.

Table 5: DIP switch positions and equivalent values

DIP switch position number	1	2	3	4	5	6	7	8	9	10
Equivalent value	1	2	4	8	16	32	64	128	256	512

Table 6: Dome camera site ID DIP switch settings for dome cameras 1 to 30

Unit	DIP switch	Unit	DIP switch	Unit	DIP switch
1	ON 1 2 3 4 5 6 7 8 9 10	11	ON 1 2 3 4 5 6 7 8 9 10	21	ON 1 2 3 4 5 6 7 8 9 10
2	ON 1 2 3 4 5 6 7 8 9 10	12	ON 1 2 3 4 5 6 7 8 9 10	22	ON 1 2 3 4 5 6 7 8 9 10
3	ON 1 2 3 4 5 6 7 8 9 10	13	ON 1 2 3 4 5 6 7 8 9 10	23	ON 1 2 3 4 5 6 7 8 9 10
4	ON 1 2 3 4 5 6 7 8 9 10	14	ON 1 2 3 4 5 6 7 8 9 10	24	ON 1 2 3 4 5 6 7 8 9 10
5	ON 1 2 3 4 5 6 7 8 9 10	15	ON 1 2 3 4 5 6 7 8 9 10	25	ON 1 2 3 4 5 6 7 8 9 10
6	ON 1 2 3 4 5 6 7 8 9 10	16	ON 1 2 3 4 5 6 7 8 9 10	26	ON 1 2 3 4 5 6 7 8 9 10
7	ON 1 2 3 4 5 6 7 8 9 10	17	ON 1 2 3 4 5 6 7 8 9 10	27	ON 1 2 3 4 5 6 7 8 9 10
8	ON 1 2 3 4 5 6 7 8 9 10	18	ON 1 2 3 4 5 6 7 8 9 10	28	ON 1 2 3 4 5 6 7 8 9 10
9	ON 1 2 3 4 5 6 7 8 9 10	19	ON 1 2 3 4 5 6 7 8 9 10	29	ON 1 2 3 4 5 6 7 8 9 10
10	ON 1 2 3 4 5 6 7 8 9 10	20	ON 1 2 3 4 5 6 7 8 9 10	30	ON 1 2 3 4 5 6 7 8 9 10

Figure 6: Example of setting DIP switches for the dome camera site ID 210 (2 + 16 + 64 + 128 = 210)
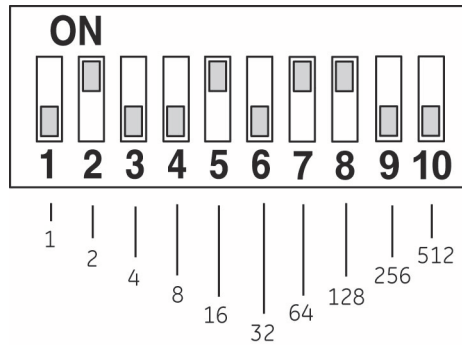
AC 24V power connector description

Before wiring, refer to Figure 7 for power connector definition.

Figure 7: Power connector

P1: AC1

P2: GND

P3: AC2
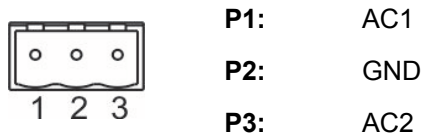
Alarm I/O

The camera supports four digital alarm inputs and two digital alarm outputs. Please make sure that the alarm connections are properly wired before starting to configure alarm related settings. Please refer to Figure 8 and Table 7 for alarm system wiring.

Figure 8: Alarm I/O connector
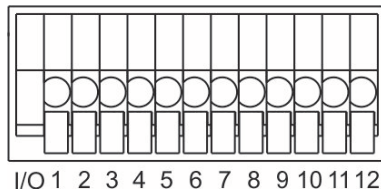
Table 7: Alarm I/O connector pin definition

Pin	Definition
1	ALARM_OUT_NO_1
2	ALARM_OUT_NC_1
3	ALARM_OUT_COM_1
4	GND
5	ALARM_OUT_NO_2
6	ALARM_OUT_CN_2
7	ALARM_OUT_COM_2
8	GND
9	ALARM_IN_4
10	ALARM_IN_3
11	ALARM_IN_2
12	ALARM_IN_1

RS-485 connector

Please refer to Figure 9 below for RS-485 connector definition before wiring.

Figure 9: RS-485 connector

Pin	Definition
P 1	R-
P 2	GND
P 3	R+
P 4	T-
P 5	T+

Figure 10: Cable connections to the I/O box
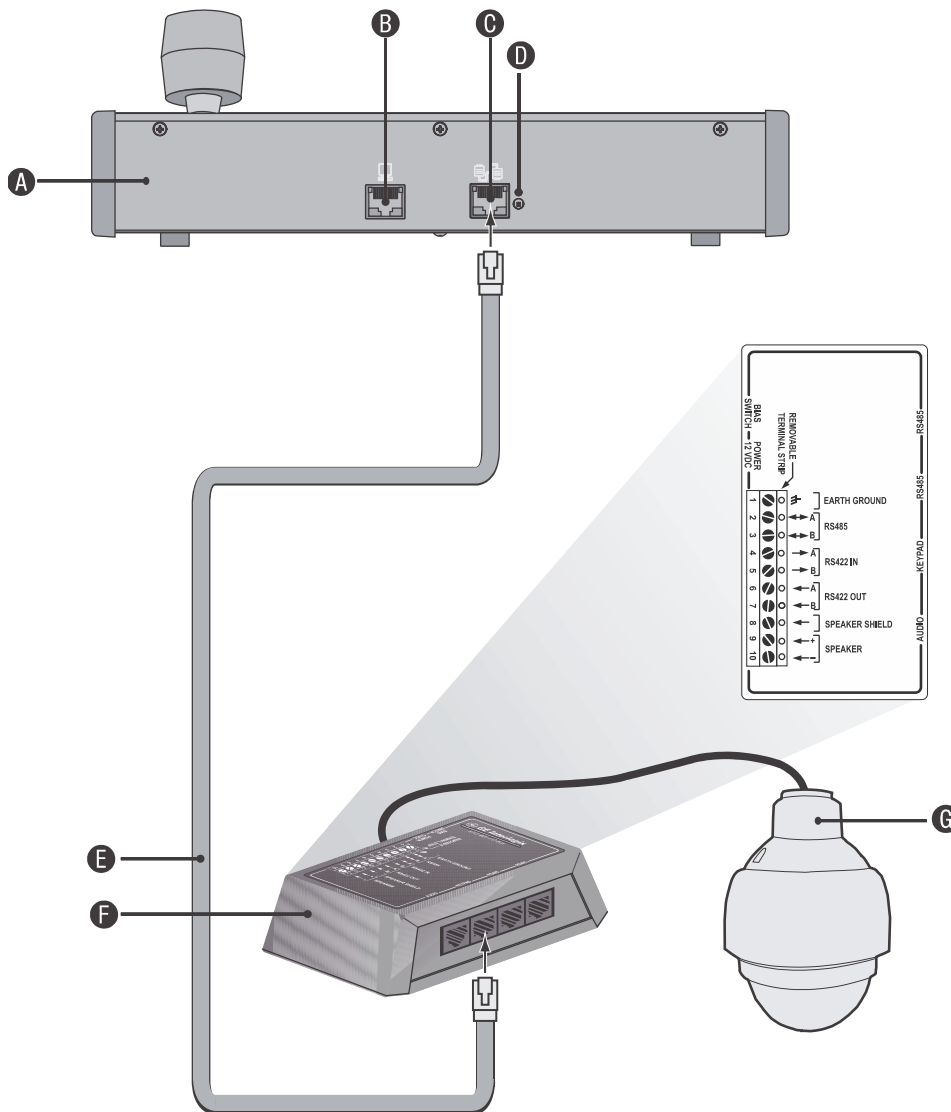
A. KTD-405 keypad

B. RS-232 programming port

C. RS-485 and RS-422 in/out

D. RS-485 termination switch

E. RJ45 cable control (use the cable provided with the equipment)

F. I/O box

G. Dome camera

To wire the RS-485:

1. Connect the T+ and R+ together, and connect to the KTD-405 I/O box RS-485(A) connection.

2. Connect the T- and R- together, and connect to the KTD-405 I/O box RS-485(B) connection.

Wiring the dome camera

Caution: During installation carefully pull the cables so as not to damage them. It is recommended to fasten the cables once they are connected.

To wire the dome camera (connectors described above):

1. Connect the BNC connector of the dome camera to the coaxial video cable of a monitor or DVR.

BNC connector   Coaxial video cable
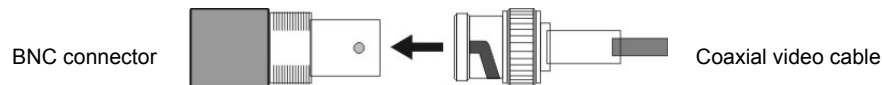
2. Connect the Alarm I/O to a dry contact, for example, a PIR detector or an access control system.

3. Connect the RS-485 serial data connector to the DVR/keypad.

   Note: See "Cable requirements" on page 3 for information about using a RS-485 cable for the dome camera.

4. Connect the power cable to the power source. As soon as the dome camera is connected, it is operational.

   Note: The ground wire must be inserted into the center pin of the power input terminal block.

Mounting the dome camera on a ceiling

The indoor dome camera can be mounted on a solid ceiling using the hard ceiling mount that is shipped with the dome camera.

Caution: Complete all installation steps before supplying power to the camera.

Items needed for mounting

A. Indoor dome camera, which is shipped with hard ceiling mount bracket

B. Screws and screw anchors for fixing the ceiling mount to a hard ceiling (not supplied.)

Tools needed

- Drill
- Screwdriver

To mount the dome camera on a ceiling:

Caution: For safety reasons the dome camera must be properly anchored to the ceiling structure. It is important to ensure that a dome camera cannot be pulled through ceiling tiles on which it is mounted.

It is recommended to mount the dome camera to an electrical box and not directly to ceiling tiles. The electrical box must be properly anchored.

1. Place the hard ceiling mount in the desired position on the ceiling and mark the position of the three screw holes.

2. Drill a hole in each marked position, slightly smaller than supplied screw anchors.

3. Fix the hard ceiling mount to the ceiling using the self-tapping screws, where shown.
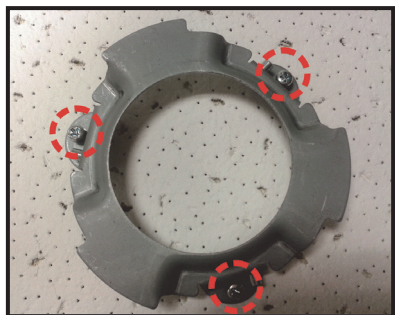
4. Thread all cables through the center hole of the mount and connect the cables to the base of dome camera.

5. Attach the dome camera to the hard ceiling mount by turning the camera base clockwise, from below (note that picture here shows a counterclockwise direction, because it is captured looking down from above).
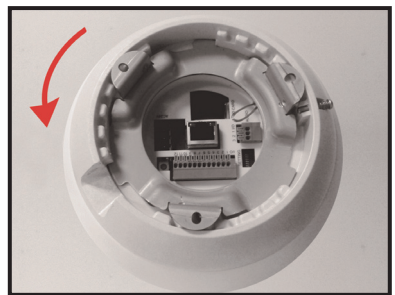
6. Tighten the screw at the side of the fixing plate.
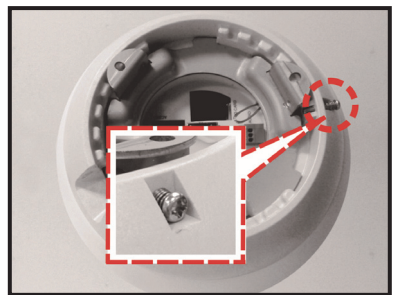
7. If the dome camera bubble had been removed earlier, reattach it now by fastening the two screws (as shown).

   The installation is complete.
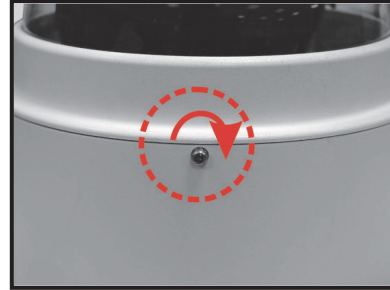
Mounting the dome camera on a wall

The indoor dome camera can be mounted on a wall using an indoor wall mount adapter. This mount is ordered separately from the dome camera. Outdoor models do not require this adapter and can use the wall mounts directly.

There are two mounting kits available:

- TruVision PTZ Indoor Wall Mount Adapter (TVP-IWA)
- Wall Mount (TVP-LWM)

Caution: Complete all installation steps before supplying power to the camera.

Note: The TVP-LWM mounting hole patterns are compatible with other Interlogix PTZ mounts such as the GEA-105 (corner mount), GEA-106 (pole mount), and GEA-107 (roof mount).

Pendant mounting the dome camera

The indoor dome camera can be mounted with a user-supplied pipe using an indoor wall mount adapter mount and NPT pendant adapter. These mounts are ordered separately from the dome camera. Outdoor models do not require the wall mount adapter but do require the NPT pendant adapter. The NPT adapter thread specifications are 1.5" NPT male.

There are two mounting kits available for pendant mounting:

- Truvision PTZ Indoor Wall Adapter (TVP-IWA)
- TruVision PTZ Indoor/Outdoor NPT Pendant Adapter (TVP-PM-NPT)

Please contact your local supplier for information on other mounting kits available.

Figure 11: Pendant-mount
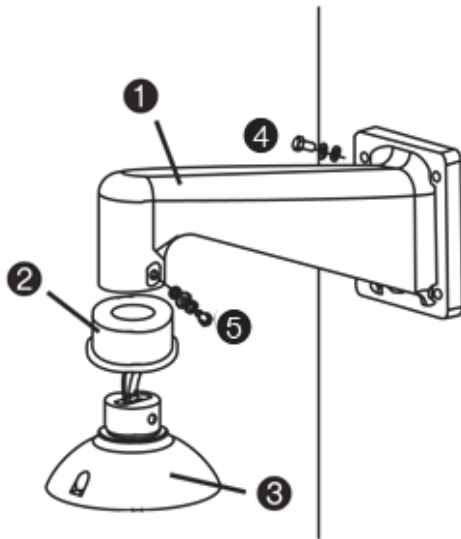
1. Wall mount
2. Waterproof top cap boot
3. Housing top cap
4. Screws and screw anchors to attach pendant mount to wall
5. Screws and washers to attach pendant mount to the outdoor mounting kit

Items needed for mounting

A. Outdoor dome camera package (see Figure 3 on page 7)

B. Pendant mount kit, which is shipped with:

- Wall mount
- Sponges
- M5 standard/security screws

C. Screws and screw anchors for fixing the standard wall mount onto the wall (not included)

Tools needed

- Drill
- Screwdriver

To wall mount the dome camera:

1. Drill a cable-access hole in the wall where you want to install the wall mount.

2. Using the correct screws and screw anchors, fix the wall mount to the wall.

3. Attach the waterproof top cap boot to the wall mount.

4. Run the cables through the pendant mount. The cables should exit from the pendant mount.

   Note: Block the cable-entry hole in the wall with the supplied sponges to prevent insects from entering the wall mount.

5. Thread the cables through outdoor mount kit.

6. Attach the outdoor mount kit to the wall mount arm using the supplied screws and washers. Adjust the rubber boot to the joint.

7. Connect the cables to the dome camera.

8. Attach the dome camera to the outdoor mount kit with the supplied screws and washers.

Mounting an indoor dome camera in a ceiling (Flush mounting)

The indoor dome camera can be mounted in a ceiling using the optional flush-mount kit. The items and tools needed for the flush-mount installation are listed as follows.

Items needed for mounting

- Indoor dome camera package (see Figure 2 on page 6)

- Flush-mount kit, which contains:
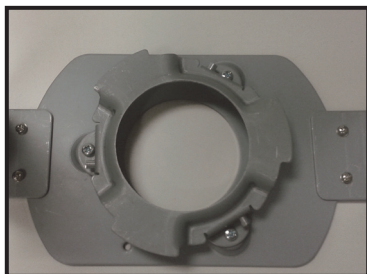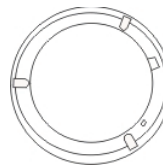
In-ceiling mount   Flush-mount ring   Ceiling sticker

M3x6 Screw (X2)

Tools needed

- Tool for cutting a hole in the ceiling

- Screwdriver (#2 Phillips)

Caution: Always check local building codes and safety regulations for additional precautions.

To install the indoor dome camera in a ceiling:

1. Install the camera on the bottom mount by turning the camera clockwise, from below (note that picture here shows a counterclockwise direction, because it is captured looking down from above).
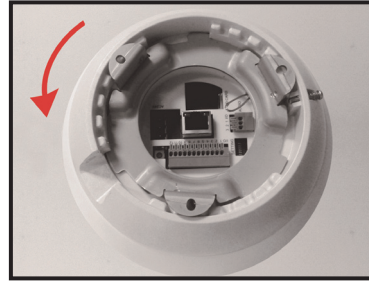
2. Tighten the screw at the side of the fixing plate, to finish installation of camera to bottom mount.
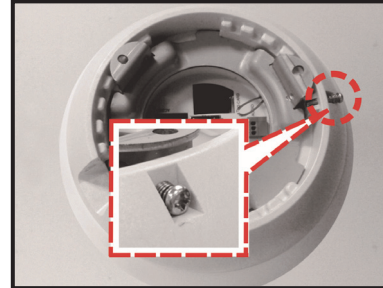
3. Place the enclosed ceiling sticker on the ceiling, and cut around the circle to create a hole in the ceiling.
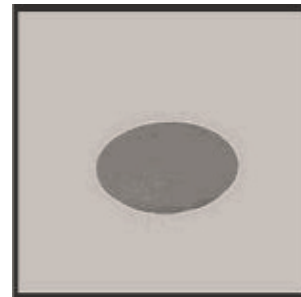
4. Disassemble the wings from the in-ceiling mount by loosening the three screws, as shown, until the wings are loose enough to turn out from the ring.
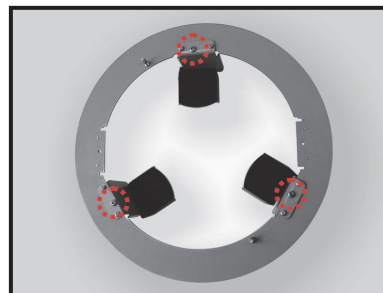
Caution: For safety reasons, the dome camera must be properly anchored to the ceiling structure. It is important to ensure that a dome camera cannot be pulled through ceiling tiles on which it is mounted.

5. Place the in-ceiling bracket into the ceiling opening and affix by tightening three screws, as shown.
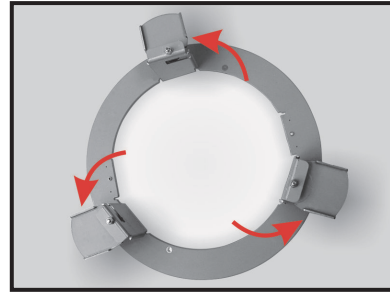
6. When tightening, the wings will be turned into the ceiling opening and will approach the ceiling board.

    Note: Ensure the wings are completely flush with the ceiling board.

7. Route the cables down through the center hole and connect to camera.
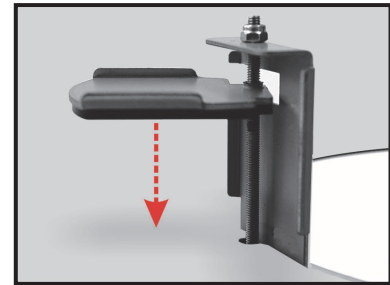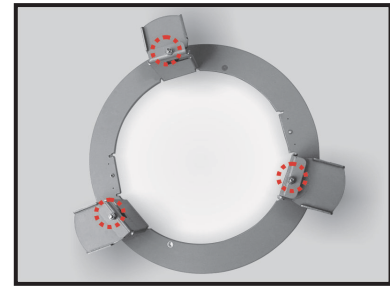
8. Put the camera, with installed bottom mount, into the ceiling opening.
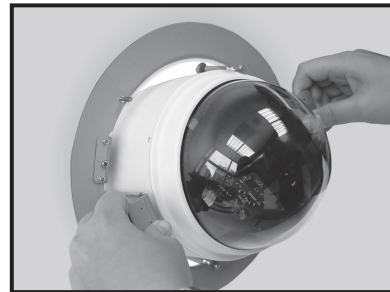
9. Tighten the screws, as shown, to affix the bottom mount to the in-ceiling bracket.
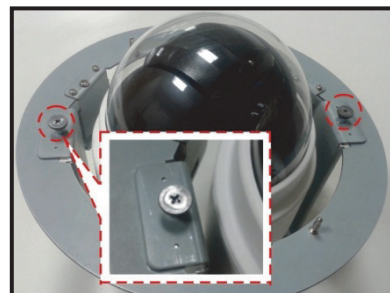
10. Affix the trim ring to the in-ceiling bracket, as shown.
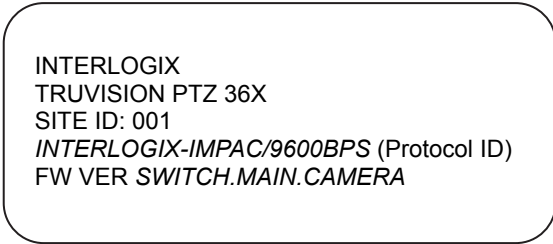
Chapter 3
Menu overview

On-screen information

When the unit is powered up, a splash screen appears that displays important system information (see Figure 12 below.) Items marked in italic in the figure can change depending on the settings.

Figure 12: Splash screen that appears when the dome camera is powered up

> INTERLOGIX
> TRUVISION PTZ 36X
> SITE ID: 001
> *INTERLOGIX-IMPAC/9600BPS* (Protocol ID)
> FW VER *SWITCH.MAIN.CAMERA*

Information on the status of several dome camera functions can be displayed on the monitor screen. The on-screen display (OSD) shows the current zoom focus, alarm number, time and date, as well as the dome camera area title and site ID. See Figure 13 on page 30.

To download the current version of the firmware, please go to our web site, www.interlogix.com.

Figure 13: Position of on-screen information

Table 8: Dome camera information displayed on-screen

Position	Function	OSD	Description
1	Motion	MOTION	Alarm Detect Message
2	Alarm	ALARM 1	Alarm Message
3	Focus Modes & Backlight	A	Auto Focus
		M	Manual Focus
		X	Back Light Compensation OFF
		B	Back Light Compensation ON
4	Booting Message	XX…(Dome Type); ID: 001 (Default)	Shows Dome Type, ID Address, Protocol and Baud Rate
		DSCP/9600 (Default)	
		INITIALIZING	
5	Error Message	PAN ERROR	Shows system initializing error message
		TILT ERROR	
		CAM MODULE ERROR	
6	Zoom Ratio	X1	Present Zoom Ratio (Optical Zoom/Digital Zoom)
7	Title		Maximum 20 characters for each title 16 sets of titles are available
8	Camera ID	001	Displays the camera ID
9	Time	XXXX/XX/XX XX:XX	Year/Month/Day Hour:Minute
10	Position Display	XX YYY/YY	XX: direction that PTZ is pointed (N, E, S, W, NE, SE, SW, NW)
			YYY/YY: angle of PTZ (0 to 359, -10 to 90)

Main menu overview

The dome camera is programmed through the on-screen (OSD) menus. To access the OSD menus, you must open the main menu. The main menu, which appears over three screens, lets you set up the dome camera or change the default settings to suit your installation.

Note: The OSD menu can be pre-programmed to time-out after a certain number of minutes of inactivity. The default value is two minutes.

Figure 14: Main menus

```
               MAIN PAGE 1
LANGUAGE              ENGLISH
DEFAULT CAMERA        ON
BACKLIGHT             OFF
FOCUS                 AUTO
AE MODE               ENTER
WBC MODE              AUTO
SETUP MENU 1          ENTER
SETUP MENU 2          ENTER
```

⬇

```
               MAIN PAGE 2
ID DISPLAY            ON
TITLE DISPLAY         OFF
TITLE SETTING         01
PRESET                ENTER
SEQUENCE             ENTER
AUTOPAN              ENTER
CRUISE               ENTER
HOME SETTING         ENTER
```

⬇

```
               MAIN PAGE 3
IR FUNCTION          AUTO
ALARM SETTING        ENTER
ALARM DETECT         NONE
WDR FUNCTION         OFF
PRIVACY MASK         ENTER
TIME SETTING         ENTER
SCHEDULE             ENTER
EXIT OSD             YES
```

Main menu commands options

Table 9 below provides a list of controls and options available on each screen that you can access from the main menu. Access to the menu screens can depend whether the system has been set up to require a password.

Table 9: Main menu descriptions

Command	Function
LANGUAGE	Configures the language of the on-screen display.
DEFAULT CAMERA	Configures the remote system reset, or is used to default all the settings of the system or of a dome camera.
BACKLIGHT	Enable/disable the backlight setting.
FOCUS	Configures focus to be manual or auto
AE MODE	Configures exposure compensation, shutter speed, iris control,
WBC MODE	Configures white balance.
SETUP MENU 1	Configures digital zoom, automatic slow shutter, digital noise reduction, video invert, image freeze, aperture, and stabilizer.
SETUP MENU 2	Configures image flip, tilt limits, proportional speed, auto calibration, password, OSD menu duration, system reset.
ID DISPLAY	Configures the camera site ID.
TITLE DISPLAY	Configures the camera title display.
TITLE SETTING	Configures the wording of the camera title.
PRESET	Configures preset points.
SEQUENCE	Configures sequence, sequence step, preset position, sequence speed, dwell time, and manual sequence.
AUTOPAN	Configures autopan, start point, end point, direction, speed, and execution.
CRUISE	Configures the cruise number, record start, and record end.
HOME SETTING	Configures home, return action selection, preset point selection, sequence selection, autopan selection, cruise selection, return time, and manual home.
IR FUNCTION (D/N cameras only)	Configures IR cut filter threshold, and manual control.
ALARM SETTING	Configures alarm settings.
ALARM DETECT	Configures alarm detection.
WDR FUNCTION	Enable/disable the wide dynamic range feature.
PRIVACY MASK	Configures the privacy mask.
TIME SETTING	Configures the time and date of the dome camera.
SCHEDULE	Configures schedules for presets/sequence/autopans/cruises/IR function.

Using a keypad to program menus

Use a control device such as a control keypad to configure the camera menu options. We use the KTD-405 keypad controller (Figure 2) in this manual to explain the features of the TruVision PTZ 36X Camera because of the KTD-405's ability to control all of the camera's features. (For detailed keypad instructions, refer to the KTD-405/KTD-405-2D Controller Keypad User Manual.)

You can record the settings for the dome cameras using the checklist in Appendix B "Camera settings checklist" on page 61. This checklist also lists the default values of the settings, where applicable.

Accessing the programming menus

To access the programming menus using a KTD-405/KTD-405-2D keypad:

1. Switch the keypad to the camera site you want to program.

2. Press and hold the **set** key until Enter programming code displays.

3. At the code entry display, enter the programming code 9, 5, 1. Then press the **seq** button.

4. At the first menu display, press 3 to select the option Camera.

5. At the Enter camera site number screen, enter the site number of the dome camera you wish to program. Camera default value is 1. The Main Page 1 menu appears.

Caution: If the camera times out while you are in a menu and exits the menu system, all changes are automatically saved.

Navigating the menus

You can use the keypad joystick and keys to navigate through the menu system. See Figure 3 on page 34 and Figure 14 on page 34 for further information on their use.

Figure 15: Menu keys of the KTD-405/405-2D keypad
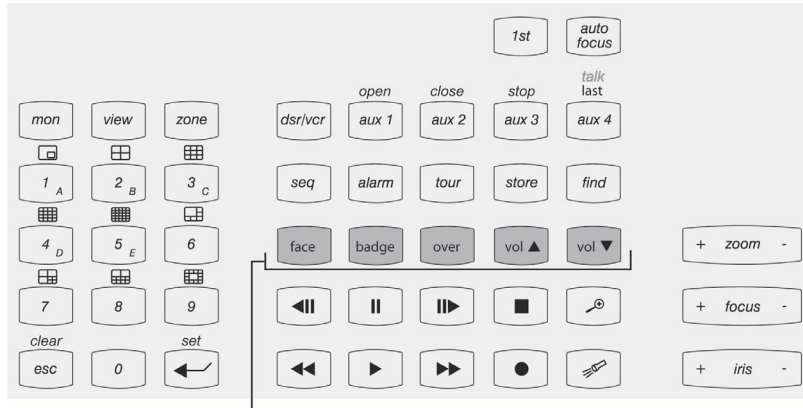
Note: Shaded keys appear on the KTD-405A/ KTD-405-2DA only

Table 10: Navigating the programming menus using the KTD-405/405-2D keypad
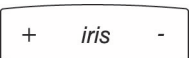
Key	Function
II	Scrolls up the menus.
▶	Scrolls down the menus.
◀II **II▶**	Scrolls left or right when indicated by → in the menu.
set ↵	Enters or exits a menu or submenu when indicated by↓ in a menu option. When a menu has →↓, scroll left and right to select a menu function and then press the set key to enter the submenu.
+ *iris* -	Iris +: Enters or selects a menu option. Iris -: Esc. Exits a menu option. There is no need to select the menu option Exit to quit a menu.

Figure 16: Joystick motion

Scroll up

Previous   Next

Scroll down   Edit (turn joystick clockwise)
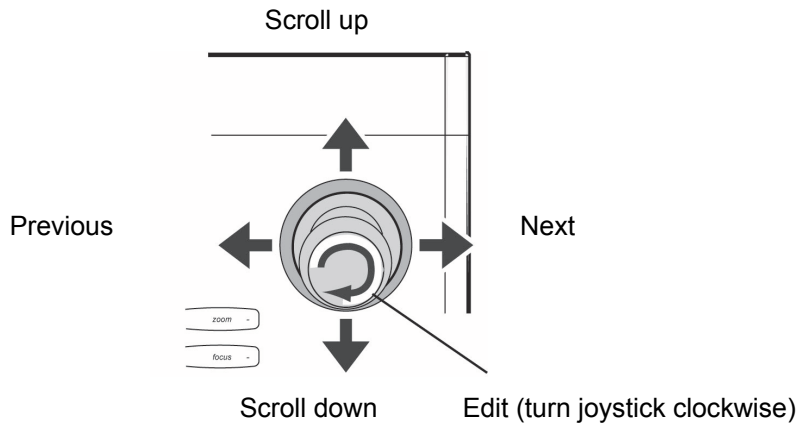
Chapter 4
Basic setup

This chapter describes how to configure the basic options for the TruVision PTZ 36X Camera.

The default values (where applicable) of the settings are listed in the checklist in Appendix B "Camera settings checklist" on page 61.

Language selection

The dome camera is shipped with on-screen display (OSD) menus available in several languages. They include English, French, German, Italian, Portuguese, and Spanish. The default language is English.

To change the language of the OSD menus:

1. Display the Main Page 1 OSD screen.

2. Select Language. The OSD menu will automatically change to the selected language.

Camera site ID displayed on a monitor

You can display the camera site ID on the monitor to identify each dome camera. The ID is a number. See Figure 1 on page 30 for the on-screen position of the camera ID.

See section "Setting the dome camera site ID" on page 14 for information on setting up a camera site ID.

To display the site ID on the monitor:

1. Display the Main Page 2 OSD screen.

2. Select ID Display and then select one of the options:

On	Display camera ID on the monitor screen.
Off	Hide the camera ID on the monitor screen. Default setting.

Title display

You can display the area title of the dome camera on the monitor so that it is easy to identify which area is being shown on-screen.

To display an area title:

1. Display the Main Page 2 OSD screen.

2. Select Area Title and then select one of the options:

On	Display the title of the selected area on the monitor screen.
Off	Hide the title of the selected area on the monitor screen.

Title settings

You can configure up to 16 zone titles. Each title can have up to 20 characters.

To create an area title:

1. Display the Main Page 2 OSD screen.

2. Enter a number for the view area; 01, for example.

3. On the keypad press the **set** key to enter the editing page. The Title Setting screen appears as shown below.

```
TITLE SETTING: 01
 0123456789        EXIT
 ABCDEFGHIJ        SAVE
 KLMNOPQRST        LEFT
 UVWXYZ : / . ,    RIGHT
 ( ) + ? -         DELETE

TITLE:
```
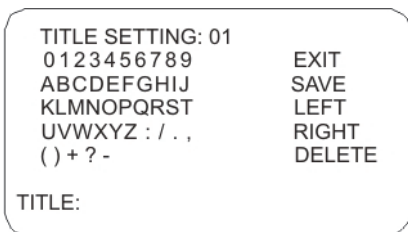
4. Using the direction keys of the keypad, select a character and press the **set** key to input.

   For example: A **set** B **set** C **set**

TITLE: ABC

5. To delete characters, select a character by moving the cursor to LEFT or RIGHT and press **set** on the keypad. Then move the cursor to DELETE and press **set** to delete the selected character.

6. When the title is completed, move the cursor to SAVE and press **set** to save it and to return to Main Menu 2.

Preset points settings

The dome camera can be programmed to execute preset positions that can then be recalled, for example, when an alarm is triggered or when the user requests it. See "Schedule settings" on page 57 for more information on programming when a preset position or sequence can be triggered.

You can program up to 256 preset points depending on the protocol used.

Table 11: Preset menu description

Function	Description
Preset Set	Set the preset points. You need to set up at least two points in order to be able to then set up a sequence.
Show Preset	Select the preset point that you want to execute. After pressing the **set** key, the camera will turn to the appointed point.
Exit	Select Yes to save any changes and return to Main Page 2.

To set a preset point:

1. Display the Main Page 2 OSD screen.

2. Select Preset to enter the Preset OSD menu.

3. Select a number by either pressing the right/left keys on the keypad to select a number (001 represents preset point 1, 002 represents preset point 2, etc.), or by using the **iris+** key to increase or decrease the number by 10.

4. Press the **set** key on the keypad, and then rotate the dome camera to a targeted pan, tilt, and zoom position.

5. Press the **set** key again to save the defined preset point.

Once the preset point is saved, move the cursor to the next menu item to execute the preset point and confirm it is correct.

Note: To freeze the image as the dome camera moves between preset points, see the option "Freeze" under "Camera setup menu 1" on page 47.

Sequence settings

The function executes pre-positioning of the pan, tilt, zoom, and focus features in a certain sequence for a dome camera. Before setting this function, you must have set up at least two preset points.

This function is located on Main Page 2.

Figure 17: Sequence menu

```
                    SEQUENCE
SEQUENCE LINE          1
SEQUENCE POINT         01
PRESET POSITION        001
SPEED                  01
DWELL TIME             001
RUN SEQUENCE           ENTER
EXIT                   YES
```

Table 12: Sequence menu description

Function	Description
SEQUENCE LINE	Set up to eight sequences. Using the left/right direction keys, select a sequence number and then set its sequence steps.
SEQUENCE POINT	Set up to 64 points for each sequence. The sequence steps are the order in which the preset points are carried out by the camera. Preset position, speed, and dwell time will also influence how the camera shows each sequence step.
PRESET POSITION	Set a specific preset position to the selected sequence step. You can specify one of up to 255 preprogrammed positions. The unit will automatically make the step after the last programmed step, which is an End step. The sequence will then loop and keep running.
SPEED	Set each sequence step to a different speed, ranging from 01 to 15. Within this range, pan, and tilt speed varies from 5 to 400 (degrees/sec.)
DWELL TIME	Set the period of time that the camera will stay at a sequence step. The range is from 0 to 127 seconds. The camera will move to the next sequence step when the dwell time expires. If the setting is 0, the dome will stay at this preset until the camera is manually moved.
RUN SEQUENCE	Manually select which sequence to view after programming.
EXIT	Select Yes to save any changes and return to Main Page 2.

Autopan settings

The autopan feature allows the dome camera to pan continuously between right and left limit settings. An autopan movement requires the start and end points to be defined as well as specifying whether the movement is clockwise or counterclockwise.
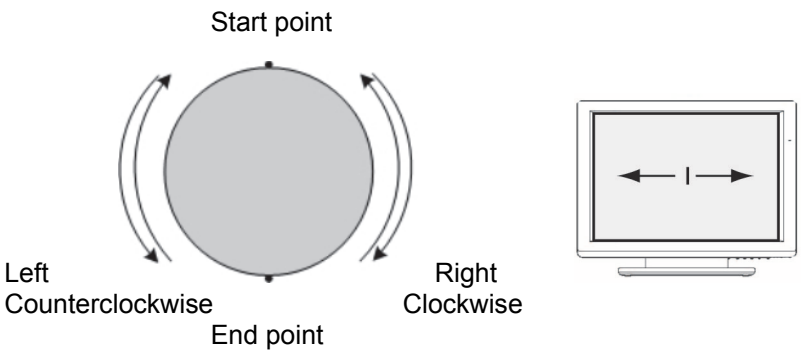
This function is located on Main Page 2.

Figure 18: Autopan menu

```
                   AUTOPAN
AUTOPAN LINE          1
START POINT          TO FIND
END POINT            TO FIND
DIRECTION            RIGHT
SPEED                01
RUN AUTOPAN          ENTER
EXIT                 YES
```

Table 13: Autopan menu description

Function	Description
AUTOPAN LINE	You can set up to four autopan functions. Use the LEFT/RIGHT direction keys on the keypad to choose a line to execute.
	You can also have the camera to do endless panning by setting the start point the same as the end point.
START POINT	To set the start position of the autopan path, proceed as follows:
	1. While the menu option To Find is flashing, move the cursor to Start Point and press **set**. The option will then become To Save.
	2. Move the dome to the desired position and press **set** to save the position as the start point. The cursor will move to End Point automatically. Set the end point to complete the autopan setting.
	Note: The tilt and zoom values of the start point are recorded and fixed for the selected autopan.
END POINT	Set the end position of the sequence. See "Start Point" above for further information.
DIRECTION	You need to specify whether the camera moves clockwise or counterclockwise from the start point to the end point before then returning to the start point.
	Select Right for the camera to pan clockwise from the start point to the end point, and then return to the start point.
	Select Left for the camera to pan counterclockwise e from the start point to the end point, and then return to the start point. See the picture below.

Function	Description
	Start point Left Counterclockwise End point Right Clockwise
SPEED	Select the speed at which the camera automatically pans. Choose from four speed settings (10 to 45°/sec.) where 1 is the slowest.
RUN AUTOPAN	Once the autopan setup is completed, you can run the autopan function.
EXIT	Select Yes to save any changes and return to Main Page 2.

Cruise settings

A cruise is a route formed with manual operation, through adjusting pan and tilt position, which can be stored and recalled to execute repeatedly.

This function is located on Main Page 2. See Figure below.

Figure 19: Cruise menu

```
              CRUISE
CRUISE LINE              1
RECORD START             ENTER
RECORD END               ENTER
RUN CRUISE               ENTER
EXIT                     YES
```

Table 14: Cruise menu description

Function	Description
CRUISE LINE	Up to eight cruises can be defined. Using LEFT/RIGHT direction keys to select a cruise number first and then follow the steps below to start recording the cruise path.
RECORD START	You need to define where the cruise starts.
RECORD END	You need to define where the cruise ends.
RUN CRUISE	When the cruise is recorded, select this option to playback the cruise.

Function	Description
EXIT	Select Yes to save any changes and return to Main Page 2.

Home settings

Set the dome camera to automatically return after a period of inactivity to a specific preprogrammed preset, sequence, autopan, or cruise position. This feature is disabled by default.

This function is located on Main Page 2.

Figure 20: Home setting screen

```
           HOME SETTING
HOME FUNCTION        OFF
SELECT MODE          PRESET
PRESET POINT         001
RETURN TIME          001MIN.
GO                   ENTER
EXIT                 YES
```

Table 15: Home setting menu description

Function	Description
HOME FUNCTION	Enable or disable the function.
SELECT MODE	This function tells the camera which mode to execute when home is enabled and the set return time is reached.
	Select one of the four following modes: Autopan, Sequence, Cruise, and Preset. Depending on which mode is selected, the menu item below changes.
PRESET POINT	This is listed if Preset was selected as the return action mode (see Figure 8 above.)
	Select a preprogrammed preset point to where the camera should return when the return time is activated. See "Preset points settings" on page 37 for more information.
SEQUENCE LINE	This is listed if Sequence was selected as the return action mode.
	Select a sequence that the camera should execute after a period of inactivity. See "To set a preset point" on page 37" for more information.
AUTOPAN LINE	This is listed if Autopan was selected as the return action mode.
	Select a preprogrammed autopan that the camera should execute after a period of inactivity. See "Autopan settings" on page 39 for more information.

Function	Description
CRUISE LINE	This is listed if Cruise was selected as the return action mode.
	Select a preprogrammed cruise that the camera should execute after a period of inactivity. See "Cruise settings" on page 40 for more information.
RETURN TIME	Select the period of inactivity (return time) after which the home is activated. The time period ranges between 1 and 128 minutes.
GO	If Home has been enabled, you can execute a home setting manually.
EXIT	Select Yes to save any changes and return to Main Page 2.

Chapter 5
Advanced setup

This chapter describes how to configure the advanced options for the TruVision PTZ 36X Camera.

The default values (where applicable) of the settings are listed in the checklist in Appendix B "Camera settings checklist" on page 61.

Default

Use this menu to reset the unit.

Function	Description
System Reset	Select to reboot the camera.
Default System	Select to restore all camera settings and functions back to factory default. The camera will reboot.
Default Camera	Select to restore back to factory default the camera settings under AE, White Balance, and Camera Setup menus.
Exit	Select Yes to save any changes and return to Main Page 1.

Backlight compensation

The backlight compensation function improves image quality when the background illumination is high. It prevents the object in the center from appearing too dark.

One practical application of backlight compensation enables you to see detail inside a room with a window on a bright day. The auto exposure will average all the light in the scene, so bright areas, such as windows, get greater weight, and the dome camera will adjust so you can see the bright area (outside). Backlight correction forces the dome camera to ignore areas of high brightness, so the rest of the scene

(the inside of the building) will be properly exposed. You can see detail inside, but in the process the lighting at the window will be adjusted so seeing outside is not possible.

The default setting is Off.

Note: Leaving backlight compensation on all the time on an unattended PTZ dome camera will produce a picture that is washed out or too bright under normal daylight or bright room conditions.

This menu is located on Main Page 1.

Focus adjustment

The camera's focus works in Auto Focus mode by default. You can control the focus manually using the keypad control. However, the focus returns to Auto as soon as the Pan or Tilt is moved. The focus control behavior cannot be controlled from the menus.

This menu is located on Main Page 1.

Table 16: Focus menu description

Function	Description
Auto	The lens continuously adjusts to the correct focus automatically for the sharpest picture. This is the default setting.
Manual	Focus is adjusted manually by pressing the Focus + / - button on the controller keypad or by using the joystick. Once the manual adjustments have been made, the camera returns to the default setting, Auto focus.

Exposure control settings

Auto exposure (AE) allows you to automatically set the proper exposure according to the existing light conditions. You can select the AE mode to have an aperture (iris) –priority, shutter-priority, or set the options manually.

Exposure is the amount of light received by the camera's image sensor and is determined by how wide you open the lens diaphragm (iris adjustment), by how long you keep the sensor exposed (shutter speed), and by other exposure parameters.

This menu is located on Main Page 1.

Figure 21: Example of the AE mode menu with the Shutter option selected
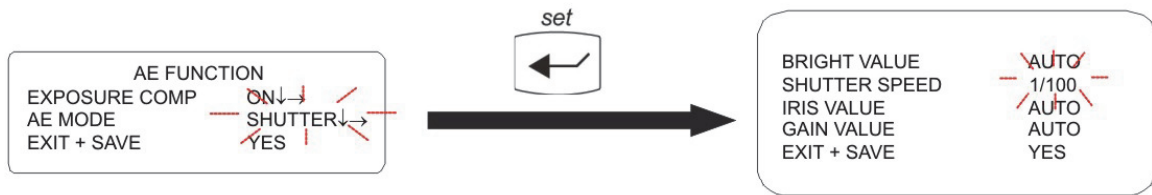
Table 17: AE mode menu description

Function	Description
Exposure Compensation	Select the exposure value, which ranges from -10.5 dB to+10.5 dB. The default setting is Off.
AE mode	Set the method the camera uses to adjust to different light levels:
	Iris: The iris value is fixed at F1.6.
	Manual: Manually select a shutter speed (1/10000 to 1/50 for PAL; 1/10000 to 1/60 for NTSC) and gain value (-3 dB to 28 dB) to optimize the video output. Select a higher value to see movement and a lower value to see clearer images.
	Auto: Select for the camera's brightness, shutter speed, iris and AGC (Auto Gain Control) control circuits work together automatically to get consistent video output level.
	Shutter: The shutter speed takes main control of exposure, and both iris and AGC will function automatically in cooperation with the shutter speed to achieve consistent exposure output.
	Select a shutter speed by format:
	NTSC: 1/60, 1/90, 1/100, 1/250, 1/500, 1/180, 1/250, 1/350, 1/500, 1/725, 1/1000, 1/1500, 1/2,000, 1/3000, 1/4000, 1/6000, or 1/10000 sec.
	PAL: 1/50, 1/100, 1/250, 1/500, 1/1000, 1/2,000, 1/5000, or 1/10000 sec.
	Select a higher value to see movement and a lower value to see clearer images
Exit + Save	Select Yes to save any changes and return to Main Page 1.

To change the AE mode values:

1. Display the Main Page 1 screen.

2. Select AE Mode. It will start flashing. Press **set**.

3. Select one of the AE Mode options (Auto, Iris, Manual, or Shutter) using the **set** button. The option's sub menu appears.

4. Select the desired value. The other AE mode options cannot be changed.

5. Exit the menu and return to Main Page 1.

White balance

White balance (WB) tells the dome camera what the color white looks like. Based on this information, the dome camera will then continue to display all colors correctly even when the color temperature of the scene changes such as from daylight to fluorescent lighting, for example.

The unit for measuring this ratio is in degree Kelvin (K). You can select one of the White Balance control modes according to the installation condition. The following table shows the color temperature of some light sources.

Table 18: Examples of the color temperatures of different light sources

Light sources	Color temperature in °K
Cloudy sky	6,000 to 8,000
Noon sun and clear sky	6,500
Household lighting	2,500 to 3,000
75-watt bulb	2,820
Candle flame	1,200 to 1,500

See Table 19 below for a description of the functions available.

This menu is located on Main Page 1.

Table 19: White balance menu description

Function	Description
Auto	Select to enable or disable automatic white balance. Its color temperature range is 3000 to 7500°K. The white balance value is calculated using color information from the entire screen. This is the default setting.
Indoor	Select for a static indoor setting. Optimizes the WB for typical indoor conditions. It is set at 3200°K base mode.
Outdoor	Select for a static outdoor setting. Optimizes the WB for typical outdoor conditions. It is set at 5800°K base mode.
ATW	Auto Tracing White Balance. Select to enable or disable auto tracing white balance. Its color temperature range is 2000 to 10,000°K. The white balance is calculated, or "traced", more quickly than by the Auto function.

Function	Description
Manual	Select to make manual adjustments to the white balance. R (red level) and B (blue level) gains are adjustable and range from 0 to 127.

```
            WHITE BALANCE MENU
    R GAIN                         050
    B GAIN                         050
    EXIT + SAVE                    YES
```

Exit	Select Yes to save any changes and return to Main Page 1.

Camera setup menu 1

You can select whether to activate several dome camera functions including Digital Zoom, Auto Slow Shutter, Noise Reduction, Video Invert, and Image Freeze. See Figure 0 below and Table 20 below for information on these functions.

This menu is located on Main Page 1.

Note: The Image Flip and the Image Invert functions are automatically disabled when the Privacy Mask function is enabled.

Figure 22: Camera setup menu

```
                SETUP MENU 1
    ZOOM SPEED               FAST
    MAX. DIGITAL ZOOM        OFF
    SLOW SHUTTER             1/50
    D.N.R.                   01
    IMAGE INVERSE            OFF
    FREEZE                   OFF
    APERTURE                 AUTO
    STABILIZER                OFF
    EXIT                     YES
```

Table 20: Camera setup menu description

Function	Description
ZOOM SPEED	Zoom speed is fixed (8).
MAX. DIGITAL ZOOM	Set the digital zoom on the camera. Digital zoom (also known as electronic zoom) indicates how much zoom the camera's software can add to the optical limit. The maximum optical zoom limit will be multiplied by the electronic zoom setting to increase total zoom. Digital zoom is activated when the full optical zoom level is reached. It can be set up to a maximum of 12X.
	The default setting is OFF.
	Note: Digital zoom may degrade image quality.

Function	Description
SLOW SHUTTER	Automatic Slow Shutter. Select to delay the switch to night mode. This feature only works when the camera is in day (color) mode. It extends the useful range of the color mode in dark situations and keeps the camera in color mode longer before having to switch to night mode. However, motion can become blurry when the shutter is set to auto slow. **Note:** This feature is only available on cameras with day/night capability. See "IR function (Day/night models only)" on page 51 for more information.
D.N.R.	Digital Noise Reduction. Select to improve image quality in low light levels. The default setting is Off. With 2D / 3D noise reduction, the processor analyzes the camera images pixel by pixel and frame by frame to eliminate environmental noise signal so that the highest quality image can be produced even in low light levels. 3D DNR generates better noise reduction than 2D DNR.
IMAGE INVERSE	Sets whether images will be inverted. See the photos below. Video Invert Off Video Invert On By default images appearing on-screen are upside down as cameras are usually installed on ceilings, for example. However, by enabling this option the image can be inverted. This may be required during testing or demonstrations, for example. When this function is enabled, the preset mask(s) will be set to off automatically. See "Privacy mask settings" on page 55 for more information. The default setting is Off.
FREEZE	Sets whether the most recent camera image will freeze on the screen while the camera is traveling to a preset position. Enable this function to freeze the camera image while the camera moves between preset positions. The camera freezes the last image while it is moving and displays a static image until it stops moving. Disabling this function causes the camera to display live video as the camera moves to the preset position. The default setting is Off. See "Preset points settings" on page 37 for further information on setting preset points and sequences.
APERTURE	Use this to set the definition of objects. When this function is enabled the edges of objects in an image are more sharply defined. There are 16 levels of adjustment from 01 to 16, where 01 is no enhancement. This function could be used, for example, when there is text in a camera image. Enabling the function would make the text appear sharper.

Function	Description
STABILIZER	If enabled, the camera can clearly capture some images that would otherwise be blurred due to vibration.
	Note: If enabled, the following settings will automatically be adjusted: 1) WDR will turn OFF; 2) Digital Slow Shutter will be set to No Function; 3) Digital Zoom capability will be limited.
EXIT	Select Yes to save any changes and return to Main Page 1.

Camera setup menu 2

This menu provides access to pan/tilt, password, and speed settings that can be changed or customized. See Figure 1 below for the screen.

This menu is located on Main Page 1.

Note: The Image Flip and the Video Invert functions are automatically disabled when the Privacy Mask function is enabled.

Figure 23: Pan/Tilt setup screen

```
            SETUP MENU 2
FLIP                     ENTER
ANGLE ADJUSTER           ENTER
PT POSITION               ENTER
SPEED BY ZOOM            OFF
AUTO CALI.               OFF
PASSWORD                 OFF
OSD AUTO CLOSE           20 SEC
SYSTEM RESET             ENTER
EXIT                     YES
```

Table 21: Pan/Tilt setup menu description

Function	Description
FLIP	Image flip automatically rotates the camera 180 degrees when the bottom tilt limit is reached. This feature enables tracking of a target passing directly under the camera.

```
            FLIP SETTING
FLIP                     OFF
EXIT + SET               YES
```

IMAGE: Select this option to seamlessly track objects. Almost no delay occurs compared to the spin mode.

The privacy mask function is automatically disabled if the E-flip function is enabled, and the screen will show "Mask will be set off."

M.E. (Mechanical Flip): This is a standard mechanical operation. As

Function	Description
	the dome tilts to the maximum angle, it will pan 180°, and then continue tilting to keep tracking objects. **Off:** Select this option to disable the image flip function. This is the default setting. **Note**: To make the camera tilt within a specific range, such as between -10° to +100°, set the range of tilt angle in the Angle Adjuster menu (see next section). The default tilt setting is 90°.
ANGLE ADJUSTER	Use this setting to adjust the minimum and maximum camera viewing angles. The minimum angle can be adjusted between -10° and +10°. Default value is 0°. The maximum angle can be adjusted between 80° and 100°. Default value is 90°.
PT POSITION	Use this setting to display the pan/tilt position on the screen.
SPEED BY ZOOM	Proportional speed. Proportional speed decreases the pan/tilt speed of the camera to provide better tracking when the camera is zoomed in. This helps reduce pan/tilt overshoot when zooming in on objects far from the camera.
AUTO CALI.	Auto calibration. There are one horizontal and one vertical infrared ray check points in each dome. When the camera's position is moved during installation or maintenance, the relative distance between the original set point and the check point could be changed. Enable the Auto Calibration function, the dome will automatically detect the distance change and reset the point back to the original position.
PASSWORD	The camera is shipped without password protection. When this function is enabled, you will be prompted to enter the password to proceed whenever the OSD menus are accessed. **To set or change a password:** 1. For the password function, select On and press the **set** key. The New Password screen appears. NEW PASSWORD : _ _ _ _ CONFIRM PASSWORD : _ _ _ _ 0123456789 DELETE SAVE EXIT 2. Using the arrow keys on the keypad or the jogging stick, select a number from the list and press the **set** key to input. For example, for password 0134, select: For example: 0, **set**, 1, **set**, 3, **set** , 4, **set** Passwords must have four digits. The default password is 0000. 3. In the Confirm Password line enter the same password again to confirm the setting.

Function	Description
	4. Select Save and return to Main Page 1.
	Caution: Record your password in a safe place. If you should forget your password, you will not be able to access the camera menus. Please contact technical support for assistance.
OSD AUTO CLOSE	Set the period of time that menus will stay on-screen. Select one of the time options, from 10 to 30 seconds. If Off is enabled, the menus remain on-screen.
SYSTEM RESET	Select System Reset to reboot the camera. Select Default System to restore camera to factory default settings.
EXIT	Select Yes to save any changes and return to Main Page 1.

IR function (Day/night models only)

This function controls when the dome camera switches to day or night mode. The dome camera produces high-quality color video during the day or when light levels are high. It then switches to monochrome and removes the infrared filter to improve IR sensitivity at night or when light levels are low.

Note: This menu will only be present if the dome camera supports day/night switching.

Table 22: Day/night menu description

Function	Description
AUTO	Select this option for day/night mode to be automatically activated. The internal circuit will automatically decide the threshold to remove the IR cut filter according to the value of light condition calculated by internal light algorithms. The options include Low, Mid, and Hi.
	Low indicates a higher sensitivity and can improve reliability of lens so that it is fast to switch to Day mode and relatively difficult to change into Night mode; Hi indicates that it is fast to switch to Night mode and difficult to change into Day mode.
	This is the default setting.
MANUAL	Select manually whether day or night mode is activated.
	Select On to deactivate the IR cut filter and put the camera in B/W (Night) mode. Select Off to activate the IR cut filter and put the camera in color (Day) mode.
	It can be toggled on and off using the KTD-405 keypad by pressing the **esc** key and flashlight 🔲 buttons together.
EXIT	Select Yes to save any changes and return to Main Page 3.
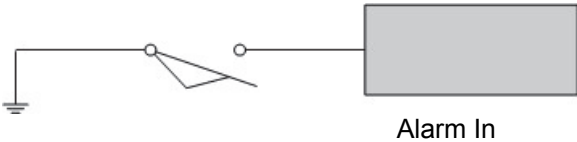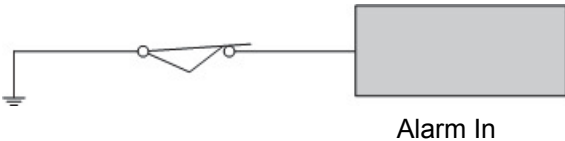
Alarm settings

You can program actions for alarms. The camera has four alarm inputs and two alarm outputs (NO and NC) to which to connect alarm devices.

Figure 24: Alarm setting menu

```
                ALARM SETTING
ALARM PIN                  1
ALARM SWITCH               OFF
ALARM TYPE                 N.C.
ALARM ACTION               PRESET
PRESET POINT               001
DWELL TIME                 ALWAYS
ALARM PRIORITY             1
EXIT                       YES
```

Table 23: Alarm setting menu description

Function	Description
ALARM PIN	Select an alarm connector, and then set its alarm-related parameters in the Alarm Setting menu.
ALARM SWITCH	Enable or disable the selected alarm pin function.
ALARM TYPE	Select the contact type (NO, NC).
	Normally Open (NO):
	Alarm In
	Normally Closed (NC):
	Alarm In
ALARM ACTION	Select one of the pre-programmed modes to be executed when the alarm is triggered (Preset, Sequence, Autopan, or Cruise.) The option listed below will depend on which mode has been selected.
	When an alarm is triggered, there will also be a warning flashed on-screen. See Figure 1 on page 30.
PRESET POINT	Select a pre-programmed preset number that the camera should execute when an alarm contact is triggered.

```
ALARM CONTACT       1→
CONTACT TYPE        NO→
ALARLM ACTION       PRESET→
PRESET              001→
DWELL TIME          ALWAYS→
```

Function	Description
SEQUENCE LINE	Select a pre-programmed sequence number that the camera should execute when an alarm contact is triggered.
AUTOPAN LINE	Select a pre-programmed autopan number that the camera should execute when an alarm contact is triggered.
CRUISE LINE	Select a pre-programmed cruise number that the camera should execute when an alarm contact is triggered.
DWELL TIME	Set the duration during which the camera will keep the relay energized when an alarm is triggered. This relay timer starts counting from the second the alarm is triggered. Time options are 1 to 127 seconds, OFF, or Always (on) when alarm occurs.
ALARM PRIORITY	Set alarm priority from 1 to 4 for each alarm pin. **Note:** If two or more alarm contacts are triggered at the same time, the lower alarm contact number will have priority. For example, if Alarm 1 and Alarm 3 are triggered simultaneously, only Alarm 1 will be handled.
ALARM OUTPUT	Set the alarm output device(s) to be triggered by the alarm: 1, 2, both, off.
EXIT	Select Yes to save any changes and return to Main Page 3.

Alarm detection

You can program the system to respond to motion detection.

Figure 25: Alarm detect menu

```
            ALARM DETECT
DETECT SWITCH          OFF
DETECT MODE            NONE
BLOCK MODE             NONE
FRAME SET              NONE
FRAME DISABLE          NONE
THRESHOLD              NONE
EXITD                  YES
```

Table 24: Alarm detect menu description

Function	Description
DETECT SWITCH	Enable or disable the alarm detect function.
DETECT MODE	Select the alarm detection mode: - INT FOCUS: Trigger an alarm if the internal focus changes.

Function	Description
	- FIX FOCUS: Trigger an alarm if focus movement is detected.
	- INT AE: Trigger an alarm when auto exposure movement is detected.
	- FIX AE: Trigger an alarm if the exposure value changes.
	- MOTION: Trigger an alarm if the motion volume reaches/exceeds the determined sensitivity threshold value.
BLOCK MODE	In motion detection mode, use this to enable dynamic highlighting of areas where motion is detected.
FRAME SET	Up to four motion detection zones (frames) can be set. These frames are used as zones of motion detection.

```
            FRAME SET 1
    LEFT LIMIT              L/R
    TOP LIMIT              D/U
    H SIZE                 000
    V SIZE                 000
    MODE                   PRESET
    PRESET POINT           001
    DWELL TIME             001 SEC
    EXIT                   YES
```

Function	Description
FRAME DISABLE	Use this feature to cancel frames.
THRESHOLD	Motion detection sensitivity (threshold) can be set. 1 is highest sensitivity, 255 is lowest.
EXIT	Select Yes to save any changes and return to Main Page 3.

Wide dynamic range (WDR)

When enabled, this feature allows you to see details of objects in shadows or details of objects in bright areas of frames that have high contrast between light and dark areas.

It can be toggled on and off using the KTD-405 keypad by pressing the **esc** key and the magnifying glass 🔍 keys together.

This menu is located on Main Page 3.

Privacy mask settings

Privacy masks let you conceal sensitive areas (such as neighboring windows) to protect them from view on the monitor screen and in the recorded video. You can create 16 privacy masks (numbered 1 to 16) per camera. A maximum of eight privacy masks can be displayed at one time.

When creating your masks, it is a common practice to make them 50% larger than the areas you wish to cover so that the masked areas remain concealed at all times. Masks cannot be created in the area directly below the dome camera.

The dome camera takes the center of the selected view as the starting point when setting a mask. The joystick is locked during setup.

Figure 26: Mask information

Area to be masked   Mask

0° (+90°)   180° (-90°)

Positive (+)   Negative (-)
hemisphere   hemisphere

90° (0°)

Mask 50% larger than the area to be covered   No mask allowed 20° either side of the 90° (0°) tilt
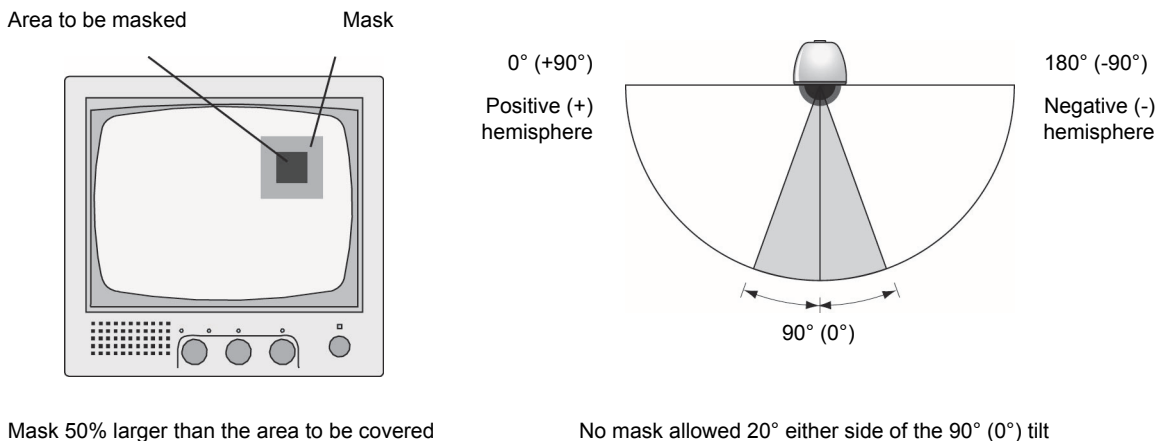
Note: The Image Flip function is automatically disabled when the Privacy Mask function is enabled.

Figure 27: Privacy mask menu

```
         PRIVACY MASK MENU
PRIVACY SWITCH          OFF
TRANSPARENCY            OFF
COLOR                   BLACK
SET MASK                01
CLEAR MASK              01
EXIT                    YES
```

Table 25: Privacy mask menu description

Function	Description
PRIVACY SWITCH	Enable or disable this option. The default setting is Off.
TRANSPARENCY	Select Set whether the color of privacy mask is transparent. Select On to display transparent masks The default setting is Off.

Function	Description
COLOR	Select the color of the privacy mask. The available colors are black, white, red, green, blue, cyan, yellow and magenta
SET MASK	Up to 16 privacy masks can be set. **To set a privacy mask** 1. Turn on the Privacy Mask feature, and select ON. 2. Select a mask number. Then select Set Mask and press the **set** key to enter the Set Mask menu. 3. Select each of the following options to position and size the mask on-screen: **Center:** Using the joystick or the left/right keys, adjust the mask's horizontal position. The camera will move according to the joystick movements. **H Size (H size range 00 to 80):** Adjust Horizontal (Width) by moving the joystick Left and Right. **V Size (V Size range 00 to 60)**: Adjust the Vertical (height) by moving the joystick Up and Down. **Note:** Set the H and V sizes to 0 to delete the selected mask.
CLEAR MASK	Delete a saved mask zone. **To delete a privacy mask:** 1. Select the mask zone to be deleted (e.g. 01). 2. Press the **set** key to confirm the selection.
EXIT	Select Yes to save any changes and return to Main Page 3.

Time setting

Set the time and date related parameters of the dome camera.

Figure 28: Time setting menu

```
          TIME SETTING
TIME DISPLAY          OFF
SET YEAR              00
SET MONTH             01
SET DAY               00
SET HOUR              00
SET MINUTE            00
EXIT+SAVE             YES
```

Table 26: Time setting menu description

Function	Description
TIME DISPLAY	Select whether time is displayed on-screen. The default setting is Off.
SET YEAR	Select the year number.
SET MONTH	Select the month number.
SET DAY	Select the day number.
SET HOUR	Select the hour number.
SET MINUTE	Select the minute number.
EXIT+SAVE	Select Yes to save changes and return to MainPage3.

Schedule settings

You can program the dome camera to activate a preset point or function (Sequence, Autopan, or Cruise) automatically at a specific time of day.

Figure 29: Schedule menu

```
                SCHEDULE
SWITCH                  OFF
POINT                   00
HOUR                    00
MINUTE                  00
MODE                    PRESET
PRESET POINT            001
SCHEDULE RESET          YES
EXIT                    YES
```

Table 27: Schedule menu

Function	Description
SWITCH	Enable or disable this option globally for all events. The default setting is Off.
POINT	Select the event number to be programmed. Up to 64 schedule points can be programmed.
HOUR	Select the hour during which the schedule point is executed every day.
MINUTE	Select the minute at which the schedule point is executed every day.
MODE	Select the mode that is activated for the schedule point: **None:** No action is executed. **Preset:** This mode is executed for the selected scheduled point.

Function	Description
	Sequence: This mode is executed for the selected scheduled point.
	Autopan: This mode is executed for the selected scheduled point.
	Cruise: This mode is executed for the selected scheduled point.
	IR Func: Applies to Day/Night models only.
	Note: If the Day/Night mode is enabled, the Auto Day/Night will be activated for a schedule point.
SCHEDULE RESET	Users can reset the whole schedule with the item
EXIT	Select Yes to save any changes and return to Main Page 3.

Appendix A
Specifications

Environment	Indoor/Outdoor (model specific)
Controller interface	RS-485 / RS-422
Operating temperature (indoor)	0 to 40°C (32 to 104°F)
Operating temperature (outdoor)	-40 to +50°C (-40 to +122°F)
Dimensions, indoor (Height x Width)	229 × 172 mm (9.0 × 6.7 inches)
Dimensions, outdoor (Height x Width)	282 × 192 mm (11.1 × 7.5 inches)
Weight, indoor	1.6 kg (3.57 lbs)
Weight, outdoor	2.3 kg (5.11 lbs)
Power supply	24 VAC ±10%
Power consumption	20 W (Indoor), 50 W (Outdoor with heater on)

Battery removal

The TruVision PTZ 36X Camera contains one 3 V Lithium battery.

To remove the battery:

1. Disassemble the PTZ by removing the three screws shown here.
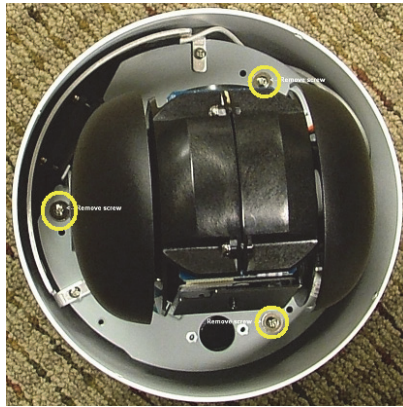
2. Locate the battery, as shown below, and carefully remove it.
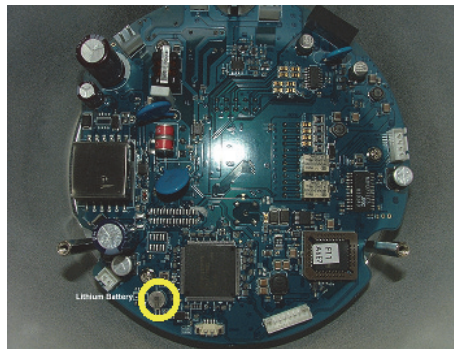
Battery

3. Dispose of the battery as required by local ordinances or regulations.

Appendix B
Camera settings checklist

Use this checklist to record the menu settings of each dome camera.

Default values are highlighted in bold, where applicable.

Camera ID:		Camera title:			
Main Menu No.	**Menu**	**Sub menus and options**			**Option configured**
1	LANGUAGE	**English**, French, German, Italian, Portuguese, Spanish, Japanese, Polish, Russian, Traditional Chinese, Simplified Chinese, Turkish			
1	DEFAULT CAMERA	On, Orr			
1	BACKLIGHT	On, **Off**			
1	FOCUS	**Auto**, Manual			
1	AE MODE	Exposure Comp.	**Off**, Exposure Value -10.5 dB to +10.5dB		
		AE Mode	Auto		
			Shutter	Shutter Speed PAL: 1/50 to 1/10000 sec. NTSC: 1/60 to 1/10000 sec.	
			Iris	Iris Value F1.6	
			Manual	Bright Value: Auto	
				Shutter Speed PAL: 1/50 to 1/10000 sec. NTSC: 1/60 to 1/10000 sec.	
				Iris Value F1.6	
				Gain Value: -3 dB to +28 dB	
1	WBC MODE	**Auto** (Auto White Balance)			
		Indoor			
		Outdoor			
		ATW			
		Manual	R Gain : 000 to 127		
			B Gain: 000 to 127		
1	SETUP MENU 1	Zoom Speed	8		
		Max. Digital Zoom	Off, 2X, 12X		
		Slow Shutter	On, **Off**		
		D.N.R.	2D N.R. **On**, Off		

Main Menu No.	Menu	Sub menus and options		Option configured
			3D N.R. **On**, Off	
		Video Inverse	On, **Off**	
		Freeze	On, **Off**	
		Aperture	01 to 16 (**7**)	
		Stabilizer	On, **Off**	
1	SETUP MENU 2	Flip	Off, Spin, **E-flip**	
		Angle Adjuster	Adjust Min. Angle -10 to +10 deg.	
			Adjust Max. Angle 80 to 100 deg.	
		PT Position	**On**, Off	
		Speed by Zoom	On, Off	
		Auto Cali.	**On**, Off	
		Password	On, **Off**	
		OSD Auto Close	Off, 5 sec, 30 sec	
		System Reset	System Reset, Default System	
2	ID DISPLAY	On, **Off**		
2	TITLE DISPLAY	On, **Off**		
2	TITLE SETTING	**01** to 16		
2	PRESET	Preset Set	001 to 256	
		Preset Run	001 to 256	
2	SEQUENCE	Sequence Line	**1** to 8	
		Sequence Point	**01** to 64	
		Preset Pos.	**001** to 255, End	
		Speed	**01** to 15	
		Dwell Time	**000** to 127 sec.	
		Run Sequence	ENTER	
2	AUTOPAN	Autopan	**1** to 4	
		Start Point	PT Move, To Save	
		End Point	PT Move, To Save	
		Direction	**Right**, Left	
		Speed	**01** to 04	
		Run Autopan	ENTER	
2	CRUISE	Cruise Line	**1** to 8	

Main Menu No.	Menu	Sub menus and options			Option configured
		Record Start	ENTER		
		Record End	ENTER		
		Run Cruise	ENTER		
2	HOME SETTING	Enter	Home Function	On, **Off**	
			Select Mode	Preset	
				Sequence	
				Autopan	
				Cruise	
			Preset Point	**001** to 256	
			Sequence Line	**001** to 008	
			Autopan Line	**001** to 004	
			Cruise Line	**001** to 008	
			Return Time	001 to 128 min.	
			Go	ENTER	
3	IR FUNCTION	**Auto**	Threshold Mid, Hi, Low		
		Manual	IR Manual: On, Off		
3	ALARM SETTING	Alarm Pin	**1** to 4		
		Alarm Switch	On, **Off**		
		Alarm Type	**NO**, NC		
		Alarm Action	Preset		
			Sequence		
			Autopan		
			Cruise		
		Preset Point	**001** to 256		
		Sequence	**001** to 008		
		Autopan	**001** to 004		
		Cruise	**001** to 008		
		Dwell Time	001 to 127 sec., Always, **Off**		
		Alarm Priority	**001** to 004		
		Alarm Output	Off, 1, 2, Both		
3	ALARM DETECT	Detect Switch	On, Off		
		Detect Mode	Motion		
		Block Mode	None; Motion: On, Off		
		Frame Set	None; Motion: 01 to 04		

Main Menu No.	Menu	Sub menus and options			Option configured
		Frame Disable	None; Motion: 01 to 04		
		Threshold	None; Motion: 001 to 255		
3	WDR FUNCTION	On, Off			
3	PRIVACY MASK	Privacy Switch	On, **Off**		
		Transparency	On, **Off**		
		Color	**Black**, White, Red, Green, Blue, Cyan, Yellow, Magenta		
		Clear Mask	01 to 20		
		Set Mask	01 to 20	H Center: L/R	
				V Center: D/U	
				H Size 00 to 80, **10**	
				V Size 00 to 60, **10**	
3	TIME SETTING	Time Display	On, **Off**		
		Set Year	00 to 99		
		Set Month	01 to 12		
		Set Day	01 to 31		
		Set Hour	00 to 23		
		Set Minute	00 to 59		
3	SCHEDULE	Switch	On, **Off**		
		Point	**01** to 31	01	
		Hour	**00** to 23	00	
		Minute	**00** to 59	00	
		Mode	None	No Action	
			Preset	Preset Point 001 to 256	
			Sequence	Sequence 001 to 008	
			Autopan	Autopan 001 to 004	
			Cruise	Cruise 001 to 008	
			IR Func.	Auto, On, Off	

Main Menu No.	Menu	Sub menus and options			Option configured
3	EXIT OSD				

Appendix C
Contact information

Contacting support

For help installing, operating, maintaining, and troubleshooting this product, refer to this document and any other documentation provided. If you still have questions, contact us during business hours (Monday through Friday, excluding holidays) or contact your local supplier.

Table 28: Technical support

North America	
T	888.437.3287 Toll-free in the US, Puerto Rico, and Canada.
	+1 503.885.5700 outside of the toll-free area.
F	+1.888.329.0331, +1.888.329.0332
E	techsupport@interlogix.com

Index

A

AE mode, 44
Alarm inputs/outputs, 16
Alarm settings, 52
Alarms detection settings, 53
Aperture, 47
Area title
display, 36
settings, 36
Auto calibration, 49
Auto exposure
settings, 44
Auto focus, 44
Auto return settings, 41
Autopan
settings, 39

B

Backlight compensation
image quality, 43
Battery removal, 59

C

Cabling, 3
recommended cable gauge, 4
Camera communication protocols
set, 11
Camera defaults
reset, 43
Camera site ID
display, 35
set, 14
Checklist
menu settings, 61
Communication protocols
protocols supported, 11
Cruise settings, 40

D

Day/night settings, 51
Default settings
OSD menus, 61
Defaults
reset remotely, 43
Digital zoom, 47
DIP switches
location, 10
RS-485 communication block, 13
set camera communication protocol, 11

E

Exposure compensation, 44

F

Flush mount installation on a ceiling, 23

H

Home settings, 41

I

I/O box wiring, 17
Image flip, 49
Image freeze, 47
Installation environment, 5

K

Keyboard
navigate OSD menus, 33
use, 33
KTD-405 keyboard, 33

L

Language
change, 35