Honeywell

10X True Day/Night PTZ Dome

Mini PTZ Dome Camera

HDT HDTX

User Guide

Document 800-06705 - Rev A - 12/10

Revisions

Issue	Date	Revisions
A	6/10	New document.
	12/10	This version is for Ver. 1.5 firmware.

Important Notice

The Mini PTZ Dome Camera only supports Pelco-D protocol.

When Mini PTZ Dome of Pelco-D protocol is controlled by a Honeywell RapidEye or Fusion Series DVR, please use Focus Near and Focus Far buttons instead of OSD operation buttons in DVR's user interface to select or close OSD menu items.

When Mini PTZ Dome of Pelco-D protocol is controlled by a Honeywell RapidEye Series DVR, please run pattern / swing / group functions only in the OSD menu.

When Mini PTZ Dome of Pelco-D protocol is controlled by a Honeywell HREP Series DVR, programming of pattern / swing / group functions is only available in the DVR's local user interface and not in the network web client.

The Privacy Zone mask function setting is reserved.

Contents

Figures

Tables

Warnings and Safeguards

Explanation of Warnings

WARNING!	**The exclamation point in an octagon is a WARNING.** **Failure to take or avoid a specific action could result in physical harm to a person or irreparable damage to equipment.**

Caution	The lightning flash with arrowhead symbol within an equilateral triangle alerts the user to the presence of un-insulated dangerous voltage within the enclosure of the product that may be of sufficient magnitude to constitute a risk of electric shock to persons.

Caution	The exclamation point in an equilateral triangle is a Caution. Failure to take or avoid a specified action could result in loss of data or damage to equipment and may contain important operating and maintenance servicing information.

FCC Compliance

Information to User: 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 expense**.**

Caution	Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Canadian Compliance Statement

This Class A digital apparatus complies with Canadian ICES-003.
Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada

European Compliance Statement

This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measure.

Important Safety Instructions

BEFORE OPERATING OR INSTALLING THE UNIT, READ AND FOLLOW ALL INSTRUCTIONS. After Installation, retain the safety and operating instructions for future reference.

1. **HEED WARNINGS** – Follow all warnings on the unit and in the operating instructions.
2. **ATTACHMENTS / ACCESSORIES** - Use only the attachments/accessories specified by the manufacturer.
3. **INSTALLATION**
   - Installation should only be performed by qualified personnel in accordance with the manufacturer's instructions and local codes. Improper installation can lead to serious injury and/or damage to the equipment.
   - Do not install near heat sources such as radiators, heat registers, or stoves, or other heat-producing devices (such as amplifiers).
   - Unless otherwise indicated by the manufacturer, the unit is designed for indoor use only and must not be exposed to rain or moisture.
   - Do not install in extremely hot or humid locations, in areas subject to dust or mechanical vibrations, or where radiation or strong electromagnetic signals are present.
4. **POWER SOURCE** - This unit should be operated only from the type of the power source indicated on the marking label.
5. **HANDLING**
   - Do not disassemble or tamper with the unit.
   - Do not drop the unit or subject it to shock or vibration.
   - Take special care that you do not scratch the dome cover when cleaning the unit.
6. **SERVICING**
   - Refer all servicing to qualified service personnel.
   - Use only replacement parts specified by the manufacturer. Using unauthorized parts may result in fire, electric shock, or other hazards.

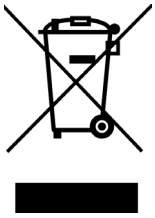
Warranty and Service

Subject to the terms and conditions listed on the Product Warranty Card, during the warranty period Honeywell will repair or replace, at its sole option, free of charge, any defective products returned prepaid.

In the event you have a problem with any Honeywell Video Systems product, please call Customer Service for assistance or to request a **Return Merchandise Authorization (RMA)** number. Be sure to have the model number, serial number, and the nature of the problem available for the technical service representative.

In the U.S.A. and Canada, call 1.800.796.2288.

Prior authorization must be obtained for all returns, exchanges, or credits. **Items shipped to Honeywell without a clearly identified Return Merchandise Authorization (RMA) number may be refused.**



WEEE (Waste Electrical and Electronic Equipment). Correct disposal this product (applicable in the European Union and the other European countries with separate collection systems). This product should be disposed of, at the end of its useful life, as per applicable local laws, regulations, and procedures.

Introduction

Features

❑ **Powerful Zoom Camera & Setup Options**

- Sony 1/4 inch Interline Transfer CCD image sensor
- 10x optical zoom/digital zoom (maximum 100x zoom magnification)
- True Day/Night (TDN) capability
- Auto-focus, manual focus, semi-auto focus modes available
- Multiple setup options using On-Screen Display (OSD)

❑ **Powerful Pan/Tilt Functions**

- High-speed pan/tilt motion up to 360° per second
- Vector Drive technology allows faster time to target view.
- Micro-Stepping Control technology provides sharp focus and natural-looking video at high zoom magnifications with zoom-proportional pan/tilt movement.

❑ **Preset, Pattern, Swing, Group and More…**

- Maximum 127 presets are programmable with Pelco-D protocol.
- Each preset can have its own parameter values independently from the other presets.
  For an example, refer to the below table.

Table 1-1 Example of Preset Parameter

Preset No.	White Balance	Auto Exposure	•••	Label	Remarks
Preset 1	Parameter A	Parameter 3		“ENTRANCE”	
Preset 2	Parameter C	Parameter 5		“WAREHOUSE”	
Preset 3	Parameter V	Parameter 2		“OFFICE”	
•••					
Preset 95	–	–	–	–	Reserved for OSD Menu
•••					
Preset 128	Parameter K	Parameter 9		“TERRACE”	

- Maximum 8 sets of Swing are programmable. The Swing function causes the camera to move repetitively between two preset positions at programmed speeds.
- Maximum 4 Patterns are programmable. The Pattern function causes the camera to memorize the path (curve path) created by the controller joystick and to duplicate it as closely as possible.
- Maximum 8 sets of Groups are programmable. The Group function causes the camera to memorize a combination of Presets, Patterns and/or Swings and to run them repetitively in sequence. A Group can consist of up to 20 Preset/Pattern/Swing functions.

❑ Pan/Tilt/Zoom (PTZ) Control

- Up to 255 cameras can be connected to a single controller using an RS-485 communication connection.
- Camera firmware supports Pelco-D control protocol.

❑ On-Screen Display (OSD) Menu

- OSD menu is provided to display the status of camera and to configure the functions interactively.
- Information displayed on screen includes camera ID, pan/tilt angle, direction, and presets.

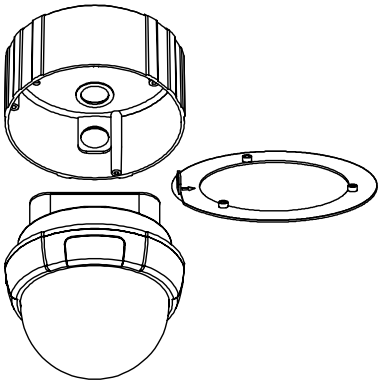
❑ Reserved Presets (Hot Keys)

- Most camera setup options can be set up easily and directly with the reserved presets (Hot Keys), without entering the OSD menu. For more information, refer to “Reserved Presets (Hot Keys)” in this manual.

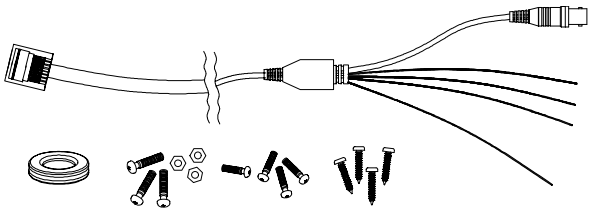
Parts List

❑ Product & Accessories

- Main Body, Surface Mount Bracket and In-Ceiling Plate

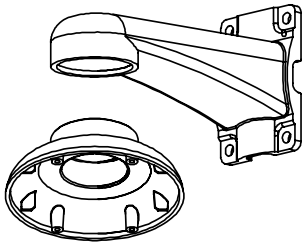


- Default Accessories
  [Main Cable, Rubber Gasket, Screws: Tapping M4×25, Machine M3×6, Machine M3×8, Machine M4×50, M4 Nut]

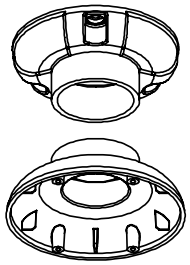


❑ Brackets (Optional)

- Wall Mount Bracket
  [Screws : Machine M3×8, Hex Lag #14×50]



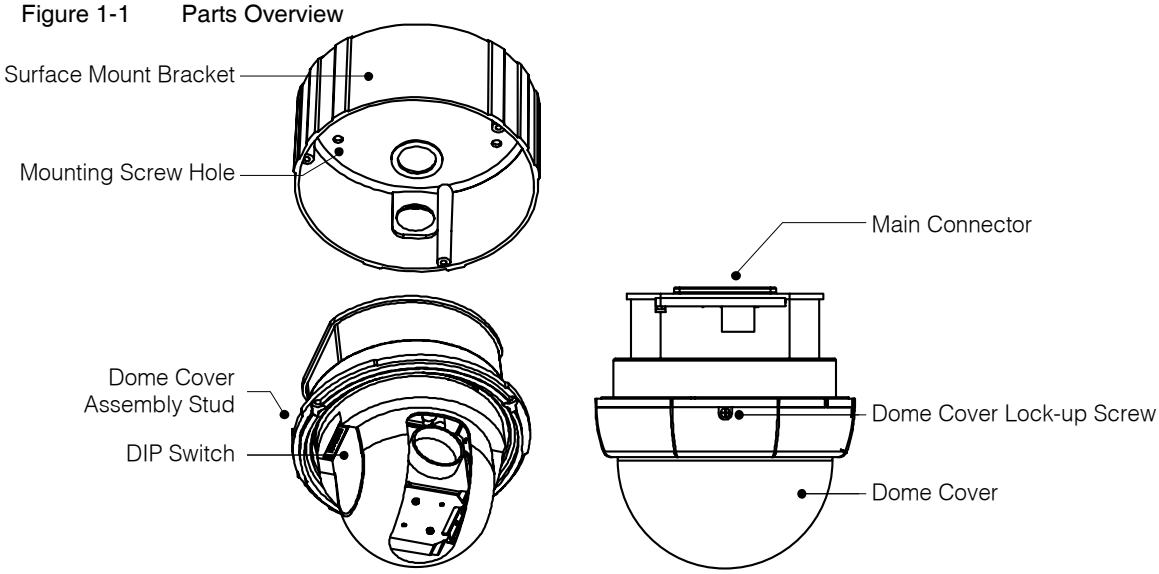
- Ceiling Mount Bracket
  [Screws : Machine M3×8, Tapping M4×25]



Mounts	Description
● HDTW	10× True Day/Night PTZ Wall Mount Bracket
● HDTC	10× True Day/Night PTZ Ceiling Mount Bracket

Main Part Description

Figure 1-1 Parts Overview



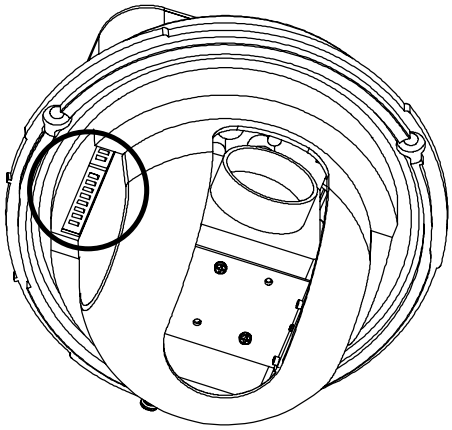
● Dome Cover	To protect the dome cover from scratches and dust, do not remove the protective vinyl from the dome cover until the installation is complete.
● Dome Cover Lock-up Screw	Used to lock up the dome cover after attaching the dome cover to the main body.
● Dome Cover Assembly Stud	Used to line up the stud on the main body and the stud on the dome cover when attaching the dome cover to the main body.
● DIP Switch	Used to set up camera IDs and protocols.
● Surface Mount Bracket and Mounting Screw Hole	Used for surface mount type, wall mount type and ceiling mount type. They are not used for in-ceiling mount type.
● Main Connector	Used for the power wire, the video cable and the RS-485 communication cable connection.

Installation

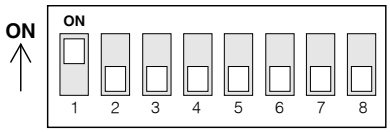
DIP Switch Setup

Before installing the camera, set up the DIP switch to configure the camera ID and the communication protocol.

Figure 2-1 Location of DIP Switch



❑ Camera ID Setup



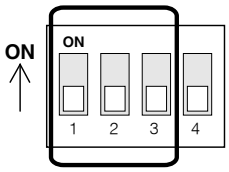
- ID numbers of cameras are set up with binary numbers. See the examples shown below.

Table 2-1 Example of Camera ID Setup

Pin	1	2	3	4	5	6	7	8
Digit	Bit 0	Bit 1	Bit 2	Bit 3	Bit 4	Bit 5	Bit 6	Bit 7
Binary Value	1	2	4	8	16	32	64	128
ex) DIP Switch Value=5	ON	OFF	ON	OFF	OFF	OFF	OFF	OFF
ex) DIP Switch Value =10	OFF	ON	OFF	ON	OFF	OFF	OFF	OFF
Pelco-D	Camera ID = DIP Switch Value Range: 1~255							

- The camera ID range is “1~255”. **Camera ID must not be “0”!**
- The factory default of the camera ID is “1”.
- Match the camera ID with the Cam ID setting of your DVR or controller to control the camera.
- If you are connecting a single camera to a controller, and the cable you are using to connect the camera to the controller is so long that the camera is out of control, terminate the camera. When connecting more than one camera to a single controller, terminate the last camera on the communication line. The last camera means the camera farthest in cable length from the controller.
- Note that the total length of the communication cable between a controller and the camera(s) on the same communication line must be less than 4,000 feet (1,200 meters).

❑ Communication Protocol Setup



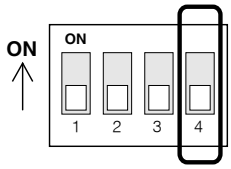
- Select an appropriate protocol using one of the following DIP switch combinations.

Table 2-2 Communication Protocol Setup

Switch Mode			Protocol
P0 (Pin 1)	P1 (Pin 2)	P2 (Pin 3)	
OFF	OFF	OFF	PELCO-D, 2400 bps
ON	OFF	OFF	PELCO-D, 9600 bps
Others			Reserved

- Match the camera protocol with the camera protocol in the setting of your DVR or controller to control the camera.
- Adjust the DIP switch after turning off the camera. If you changed the camera protocol by changing the DIP switch, the change will be effective after you reboot the camera.
- The factory default protocol is “Pelco-D, 2400 bps”.

❑ Terminal Resistor Setup



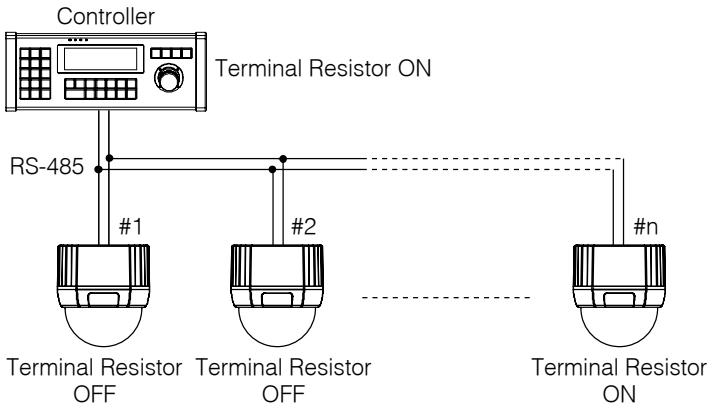
The terminal resistor is used in the following cases:

- **Case 1: The control cable length between a camera and a controller is very long (1:1 Connection)**
  If the communication cable length is over 300m with one shielded twisted pair cable or CAT5 cable (this distance may vary when using different impedance cables), the electrical signal will bound in the terminal point. This reflected signal causes distortion of original signal. Accordingly, the camera can be out of control. In this case, the terminal resistor on the camera must be set to ON.

- **Case 2: Multiple cameras are connected to a controller.**
  The terminal resistor of the camera furthest away from the controller must be set to ON. Do not turn on the terminal resistor of all the cameras on the same communication cable (see Figure 2-2).

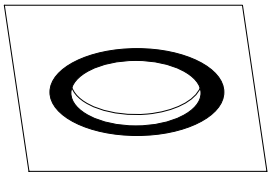
  [Note] : If the terminal resistor is set to ON at the camera dome, it must also be set to ON at the controller/DVRs. Some controllers/DVRs having built-in impedance matching may not have a terminal resistor switch. Please refer to your controller/DVR user's manual.

Figure 2-2 Terminal Resistor Setup for Multi-Drop Connection

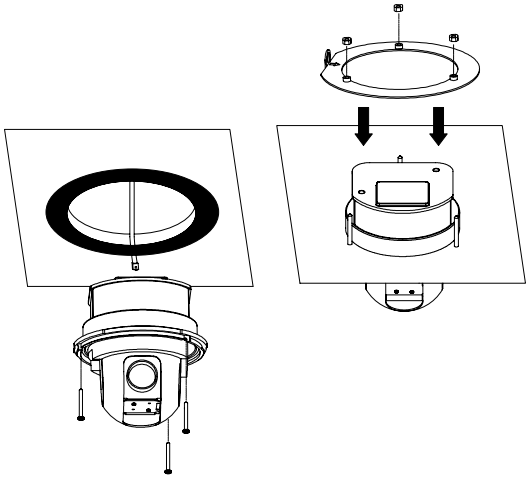


In-Ceiling Mount Installation

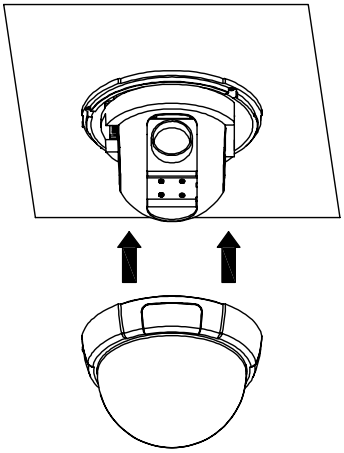
① Remove the ceiling tile from the ceiling and attach the Guide Pattern to the ceiling tile. Then cut a hole whose diameter is 116 mm and three holes for M4x30 on the ceiling tile.



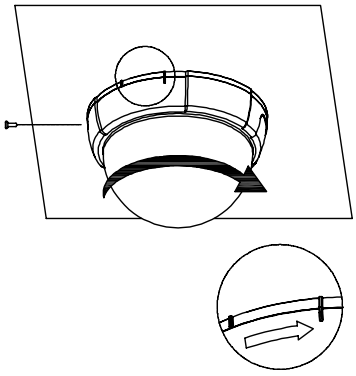
② Install the main body with the In-Ceiling Plate, the three screws (M4x50) and the three nuts (M4). Then install the ceiling tile to the ceiling and connect the main cable to the main port.



③ Align the dome cover stud with the stud on the main body and slightly push the dome cover to the ceiling tile.



④ Turn the dome cover clockwise and install the dome cover lock-up screw. Then remove the protective vinyl from the dome cover. (Machine M3×6)

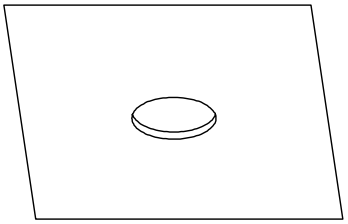


Important Notice

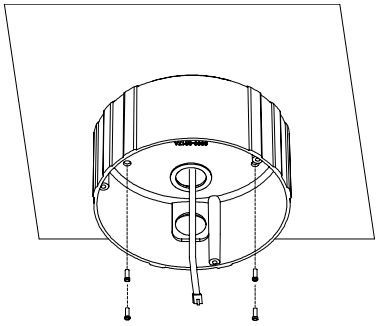
- Before starting the installation, make sure that the camera ID and protocol are set up properly.

Installation with Surface Mount Bracket

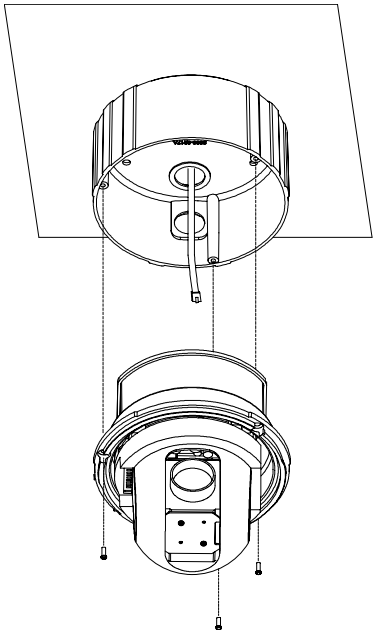
① Remove the ceiling tile from the ceiling and cut a hole whose diameter is 30-40mm on the ceiling tile to pass the wires and cables through to the upside of the ceiling. (In case of wiring and cabling through the ceiling tile only)



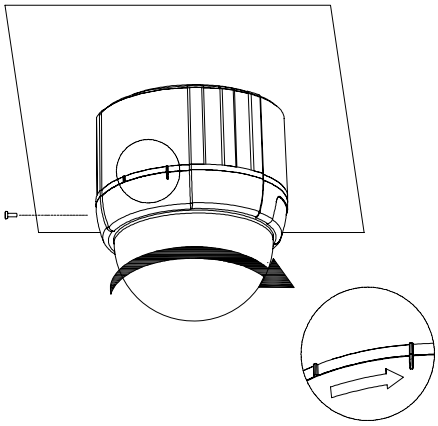
② Prepare the surface mount bracket. Pull the main cable for the system as below. Attach the surface mount bracket to the mounting surface. (Tapping M4×25)



③ Connect the main cable to the ports and install the main body. (Machine M3×8)



④ Align the dome cover stud with the stud on the main body and slightly push the dome cover to the ceiling. Turn the dome cover clockwise and install the dome cover lock-up screw. Then remove the protective vinyl from the dome cover. (Machine M3×6)

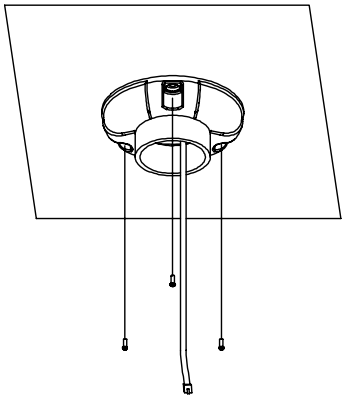


Important Notice

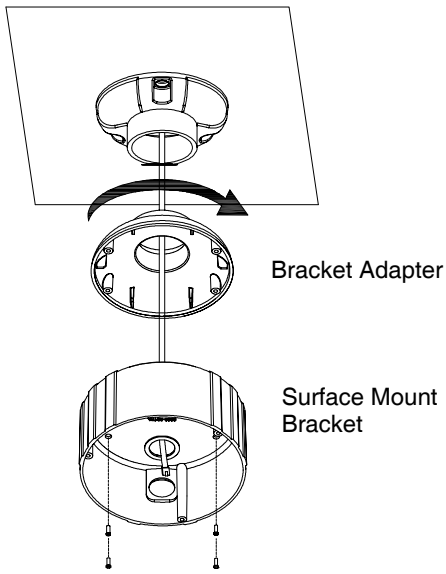
- Before starting the installation, make sure that the camera ID and protocol are set up properly.
- When the wiring access hole on the side of the surface mount bracket is not used, make sure that the hole is properly sealed with the supplied rubber gasket.

Installation with Ceiling Mount Bracket

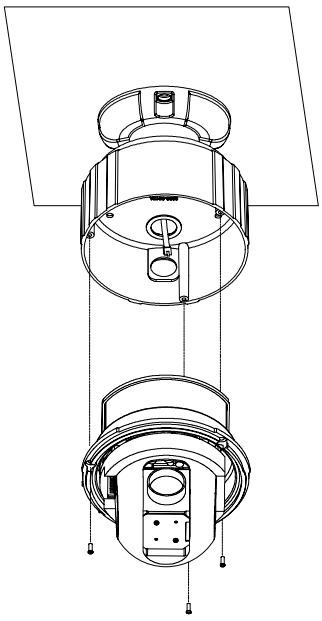
① Remove the ceiling tile from the ceiling and cut a hole whose diameter is 30—40 mm on the ceiling tile and attach the ceiling mount bracket on it. (Tapping M4×25)



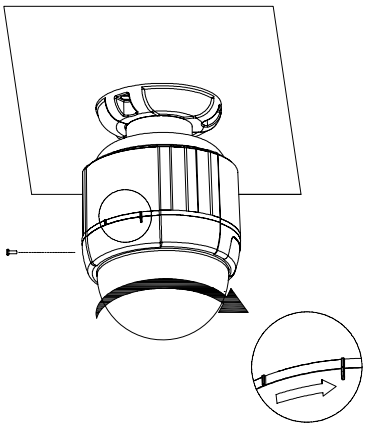
② Pull the main cable for the system as below. Turn the bracket adapter on its axis in a clockwise direction until it stops and then attach the surface mount bracket. (Machine M3×8)



③ Connect the main cable to the ports and install the main body. (Machine M3×8)



④ Align the dome cover stud with the stud on the main body and slightly push the dome cover to the ceiling. Turn the dome cover clockwise and install the dome cover lock-up screw. Then remove the protective vinyl from the dome cover. (Machine M3×6)

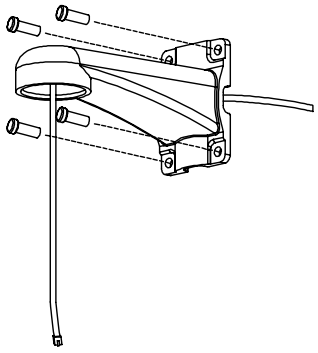


Important Notice

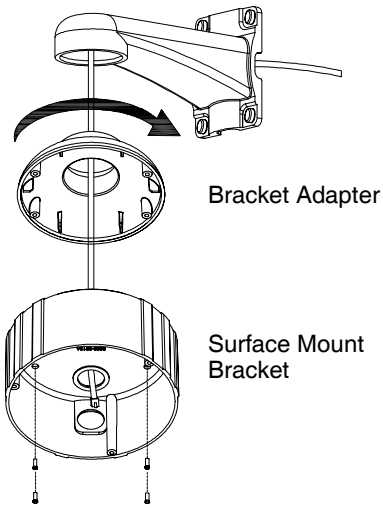
- Before starting the installation, make sure that the camera ID and protocol are set up properly.
- When the wiring access hole on the side of the surface mount bracket is not used, make sure that the hole is properly sealed with the supplied rubber gasket.
- To adjust the installation height from the mounting surface, a pipe and coupler are needed between the surface mount part of the ceiling mount bracket and the camera mount part of the ceiling mount bracket. Note that they are not supplied by the manufacturer.

Installation with Wall Mount Bracket

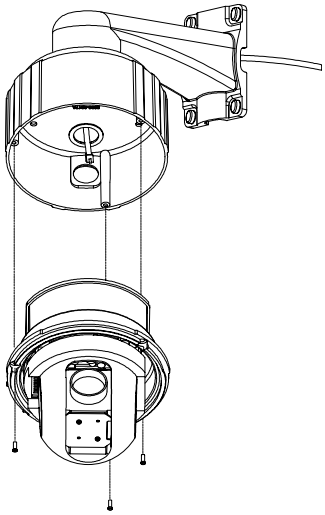
① Make a hole whose diameter is 30-40 mm on the mounting surface. Then prepare the wall mount bracket. Pull the main cable for the system as below. Attach the wall mount bracket to the mounting surface. (Hex Lag #14×50)



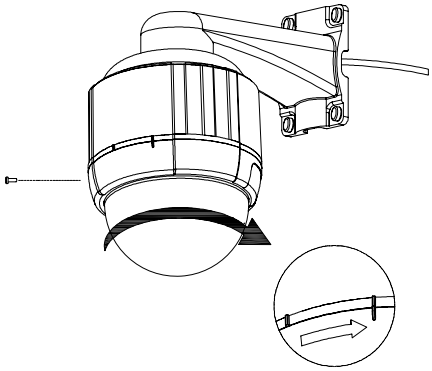
② Pull the main cable for the system as below. Turn the bracket adapter on its axis in a clockwise direction until it stops and then attach the surface mount bracket. (Machine M3×8)



③ Connect the main cable to the ports and install the main body. (Machine M3×8)



④ Align the dome cover stud with the stud on the main body and slightly push the dome cover. Turn the dome cover clockwise and install the dome cover lock-up screw. Then remove the protective vinyl from the dome cover. (Machine M3×6)

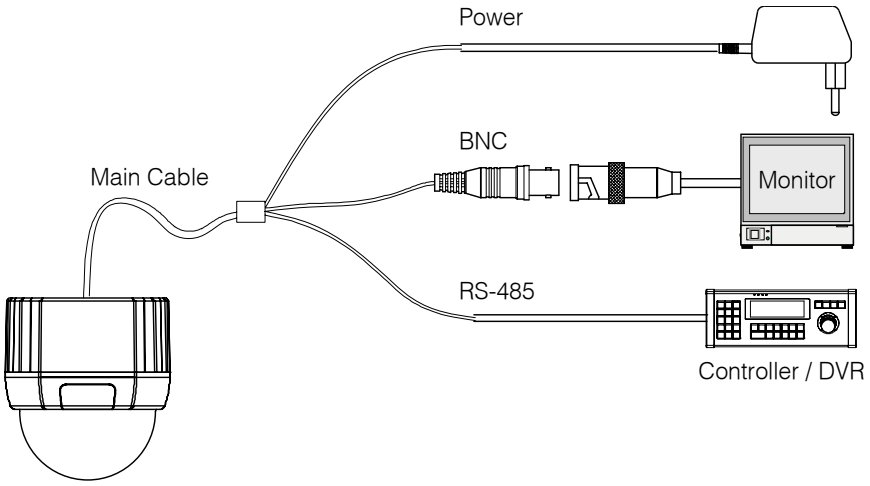


Important Notice

- Before starting the installation, make sure that the camera ID and protocol are set up properly.
- When the wiring access hole on the side of the surface mount bracket is not used, make sure that the hole is properly sealed with the supplied rubber gasket.

Wiring and Cabling

Figure 2-3 Typical Connection Diagram



❑ Port Description

Table 2-3 Pin Description of Main Cable

Port Pin Number (RJ45)	Connector / Wire Color	Signal
1	BNC Connector	
2,4		
5	Red	RS-485 +
3	Yellow	RS-485 –
7	Power Jack (Orange)	Power +
6,8	Power Jack (White)	Power -

❑ Power Description

- Carefully check the voltage and current capacity of the rated power. The rated power is indicated in the back of main unit.

Table 2-4 Power Consumption

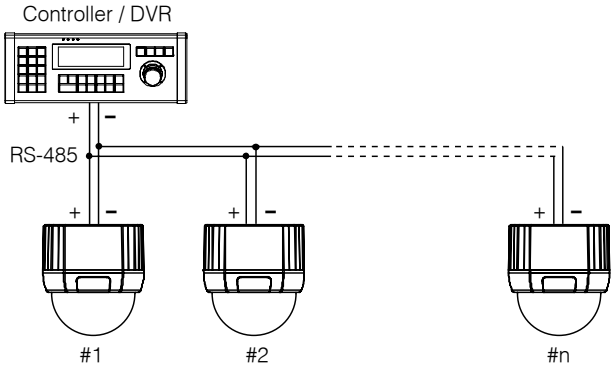
Model		Input Voltage Range	Current Consumption
Dual Power Model	HDT	DC 11V ~ 18V or AC 17V ~ 29V	DC 12V, 0.8 A / AC 24V, 0.4A
	HDTX		

- For the DC input, be careful with the polarity of DC power. The system could be permanently damaged by wrong DC input.
- If the DC power wire is very long, there may be a voltage drop and the system may not work properly. Make the length of the power wire as short as possible.

❑ RS-485 Communication

- For PTZ control, connect the cable(s) to your keyboard or DVR. Note that the total length of the communication cable between a controller and the camera(s) on the same communication line must be less than 4,000 feet (1,200 meters).

Figure 2-4 Connection of RS-485 Communication



❑ Video

- Use BNC coaxial cable only.

Operation

Checking Points before Operation

- Before turning on the system, check if the wire(s) and cable(s) are connected properly.
- Check if the camera ID on the controller is properly selected. The camera ID must be identical to that of the target camera. The camera ID can be checked by reading the DIP switch of the camera or the OSD.
- If your controller supports multiple protocols, the protocol must be changed to Pelco-D protocol.
- Adjust the DIP switch after turning off the camera. If you changed the camera protocol by changing the DIP switch, the change will be effective after you reboot the camera.
- Since the operation method can be different depending on the controller, refer to your controller manual if the camera cannot be controlled properly. The operation method described in this manual is based on a standard Pelco® controller.
- Using the Hot Keys with preset numbers for Pattern/Swing/Group. For more information, refer to "**Reserved Presets(Hot Keys)**"in this manual.

OSD Menu

- Function Using the OSD menu, the system can be properly configured for each application.
- Entering into OSD Go Preset [95]

Reserved Presets (Hot Keys)

Some Preset numbers are reserved to change some parameters without entering the OSD menu.

Pelco-D protocol

- Hot Keys

Go Preset [95]	: Enters OSD menu
Go Preset [131~134]	: Runs Pattern functions 1 ~ 4
Go Preset [141~148]	: Runs Swing functions 1 ~ 8
Go Preset [151~158]	: Runs Group functions 1 ~ 8
Go Preset [167]	: Sets Zoom Proportional functions to ON
Set Preset [167]	: Sets Zoom Proportional functions to OFF
Go Preset [170]	: Sets Camera BLC mode to OFF
Go Preset [171]	: Sets Camera BLC mode to ON
Go Preset [174]	: Sets Camera Focus mode to AUTO
Go Preset [175]	: Sets Camera Focus mode to Manual
Go Preset [176]	: Sets Camera Focus mode to SEMI-AUTO
Go Preset [177]	: Sets Day & Night mode to AUTO
Go Preset [178]	: Sets Day & Night mode to NIGHT
Go Preset [179]	: Sets Day & Night mode to DAY
Go Preset [190]	: Sets OSD Display mode to AUTO
Go Preset [191]	: Sets OSD Display mode to OFF
Go Preset [192]	: Sets OSD Display mode to ON

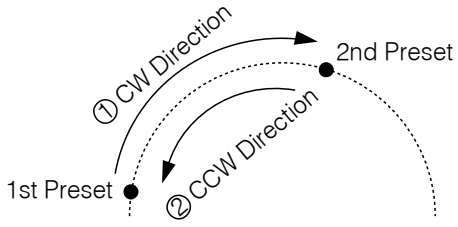
Note) When the Zoom Proportional function is enabled, the jog speed of the pan/tilt motion is determined by the zoom magnification ratio.

Preset

- Function — Maximum 127 positions are programmable. Any number between 1 and 128 can be assigned to a Preset, except 95. Preset 95 is reserved for entering the OSD menu. Camera parameters such as White Balance, Auto Exposure and others can be set up independently and each preset can have its own parameter values independently from other presets. When setting up presets with a controller, Label should be blank and "Camera Adjust" should be set to "GLOBAL" as the default. To change the parameters, enter the OSD menu.
- Setting Presets — Set Preset [1~128]
- Running Presets — Go to Preset [1~128]
- Deleting Presets — Use the OSD menu to delete Presets.

Swing

- Function — This function causes the camera to move repetitively between two preset positions at programmed speeds. When the Swing function is enabled, the camera moves from the Preset assigned as the first point to the Preset assigned as the second point in a clockwise direction. Then the camera moves from the Preset assigned as the second point to the Preset assigned as the first point in a counterclockwise (CCW) direction.

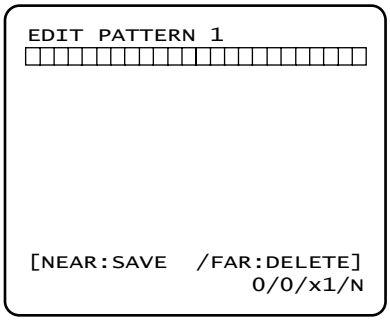


  Where the Preset assigned as the first point and the Preset assigned as the second point are same, the camera turns on its axis by 360° in a clockwise direction and then it turns back on its axis by 360° in a counterclockwise direction. The Swing speed is defined from 1°/sec to 180°/sec.
- Setting Swings — To set a Swing, enter the OSD menu.
- Running Swings — Method 1) <Run Pattern> [Swing no. + 10] For example, Run Swing 3: <Run Pattern> [13]
  Method 2) <Go Preset> [Swing no. + 140] For example, Run Swing 3: <Go Preset> [143]
- Deleting Swings — To delete a Swing, enter the OSD menu.

Pattern

- Function — This function causes the camera to memorize the curve path created by the controller joystick and to duplicate that trajectory as closely as possible.
  Maximum four Patterns are programmable and maximum 1,200 communication commands can be programmed in a pattern.
- Setting Patterns — A Pattern can be created by the following methods:

  Method 1) <Set Pattern> [Pattern no.]
  - ○ The Pattern programming window appears on the monitor as below.



  - ○ The joystick movement and the Preset movement can be memorized in a pattern.
  - ○ After a Pattern is programmed, the amount of storage remaining is displayed in a progress bar on the screen.
  - ○ To save the recording, press the **NEAR** key and to cancel, press the **FAR** key.

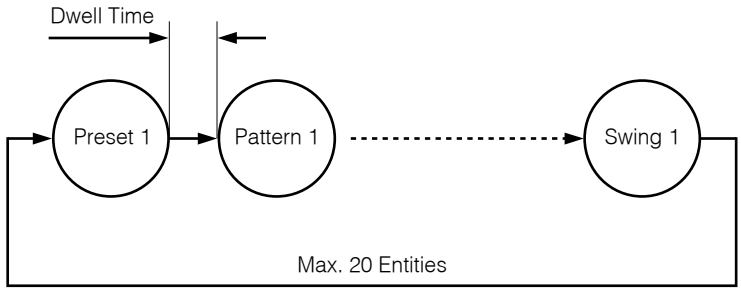
  Method 2) Program using the OSD menu. See the section “OSD Menu”.

- Running Patterns — Method 1) <Run Pattern> [Pattern no.] For example, Run Pattern 2: <Run Pattern> [2]
  Method 2) <Go Preset> [Pattern no. + 130] For example, Run Pattern 2: <Go Preset> [132]
- Deleting Patterns — To delete a Pattern, enter the OSD menu.

Note) When the system memorizes Patterns, the joystick commands are stored in the memory rather than the specific pan/tilt/zoom positions of the camera. As a result, there may be small differences between the original path and the path used by the Pattern. Note that it is not a problem of position precision.

Group

- Function — This function causes the camera to memorize a combination of Presets, Patterns, and/or Swings, and to run them repetitively in sequence. Maximum eight sets of Groups are programmable. Each Group can have up to 20 actions combining Presets, Patterns, and Swings. Dwell time between actions, Preset speeds, and the number of times Patterns and Swings are repeated, can be set up for each Group.



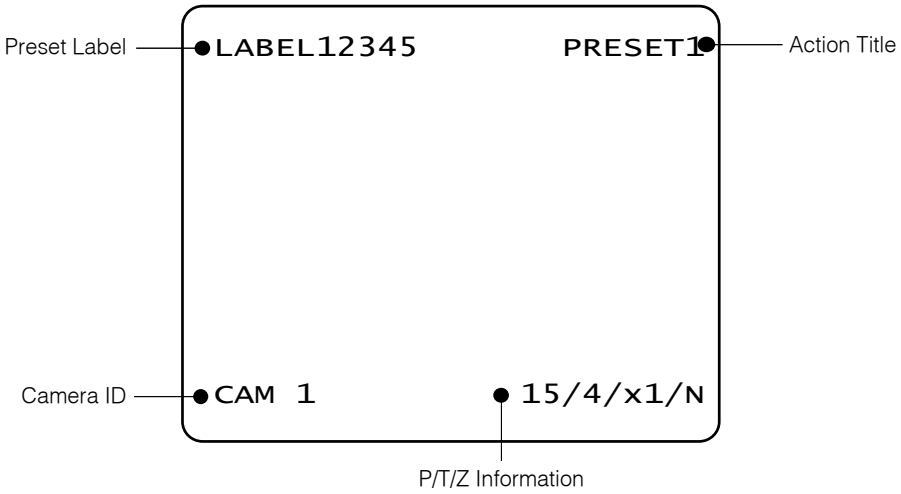
- Setting Groups — To set a Group, enter the OSD menu.
- Running Groups — Method 1) <Run Pattern> [Group no. + 20] For example, Run Group 7: <Run Pattern> [27]
  Method 2) <Go Preset> [Group no. + 150] For example, Run Group 7: <Go Preset> [157]
- Deleting Groups — To delete a Group, enter the OSD menu.

Other Functions

- Power Up Action — This setting defines a specific activity (Preset, Pattern, Swing, Group) to be performed in the event that the power to the camera is cycled. This function enables the user to resume, after turning on power, the last action being executed before turning off the power. Please note that jog actions are not available to resume.
- Auto Flip — In the event that tilt angle arrives at the top of the tilt orbit (90°), the zoom module camera turns on its axis by 180° at the top of the tilt orbit and moves to the opposite tilt direction (180°) to keep tracing targets.
- Parking Action — This feature allows the camera to begin a specified operation after a programmed time of inactivity. This function makes the camera automatically run a pre-defined action if there is no command from controller for a pre-defined time period. “Wait Time” means how long a camera should wait from the most recent command before running the pre-defined action. It can be set from 1 second to 3 hours.
- GLOBAL/LOCAL Image Setup — White Balance (WB) and Auto Exposure (AE) can be set up independently for each Preset. There are two modes: Global mode and Local mode. In Global mode, WB and/or AE are set up simultaneously for all Presets. Global WB/AE parameters are set up in the Zoom Camera Setup menu. In Local mode, WB and/or AE are set up separately for each Preset. Local WB/AE parameters are set up in each Preset setup menu. The settings are activated when the camera arrives at the Preset position. During jog operation, Global WB/AE values should be applied. Note that Local mode settings have priority over Global mode settings. Local WB/AE values do not change when Global WB/AE values are change.
- Semi-Auto Focus — This mode automatically exchanges focus modes between Manual Focus mode and Auto Focus mode by operation. Manual Focus mode activates in Preset operation and Auto Focus mode activates during jog operation. In Manual Focus mode, focus data is memorized for each Preset in advance. When the camera arrives at a Preset, the camera remembers the focus data for that Preset, shortening the focus time. The focus mode automatically changes to Auto Focus mode when jog operation starts.

OSD Display

Figure 3-1 OSD display in main screen



- P/T/Z Information — Displays the amount of pan from zero degrees vertical, the amount of tilt from zero degrees horizontal, the current compass direction, and the amount of zoom magnification.
- Camera ID — Displays the selected camera ID (address).
- Action Title — Identifies actions

"SET PRESET xxx"	When Preset xxx is memorized.
"PRESET xxx"	When the camera reaches Preset xxx.
"PATTERN x"	When Pattern x is in action.
"SWG×/PRESET xxx"	When Swing x is in action. Displays both of Swing number and Preset number.
"UNDEFINED"	When a undefined function is called to run

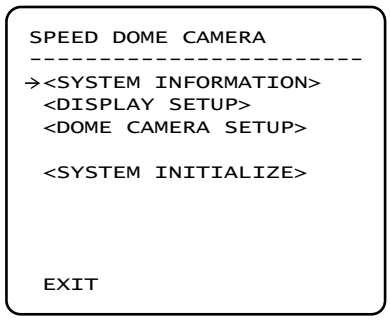
- Preset Label — Displays Preset labels when the camera arrives at Preset.

OSD Menu

Quick Programming Guide

- The menu items with < > always have sub-menus.
- To go to sub-menus or make the cursor move to the right, press the **NEAR** key.
- To go to previous upper level menus, press the **FAR** key.
- To make a selection, press the **NEAR** key
- To cancel a selection, press the **FAR** key
- To move the cursor in the menu, move the joystick to move in an **Up/Down** direction or in a **Left/Right** direction.
- To change a value, move the joystick up or down.
- To save changes, press the **NEAR** key.
- To cancel changes, press the **FAR** key.

Main Menu



- System Information — Displays the system information and configuration. The system setting can not be changed using the OSD menu and the information is for reference only.
- Display Setup — Enables the user to program how labels are displayed on the monitor.
- Dome Camera Setup — Enables the user to configure various functions of the camera.
- System Initialize — Initializes all system configurations and all data to the factory default parameters.

Display Setup

```
DISPLAY SETUP
------------------------
→CAMERA ID            ON
 PTZ INFORMATION      AUTO
 ACTION TITLE         AUTO
 PRESET LABEL         AUTO
 ALARM I/O            AUTO
 <SET NORTH DIRECTION>
 <PRIVACY ZONE>

 BACK
 EXIT
```

Display setup allows you to program how labels are displayed on the monitor. In case of AUTO, the labels are displayed on the monitor when there are any changes in parameters.

- Camera ID [ON/OFF]

  Displays the selected camera ID (address).

- PTZ Information [ON/OFF/AUTO]

  Displays the amount of pan from zero degrees vertical, the amount of tilt from zero degrees horizontal, the current compass direction, and the amount of zoom magnification.

- Action Title [ON/OFF/AUTO]

  Identifies actions.
  "SET PRESET xxx"
  "PRESET xxx"
  "PATTERN x"
  "SWG/PRESET xxx"
  "UNDEFINED"

- Preset Label [ON/OFF/AUTO]

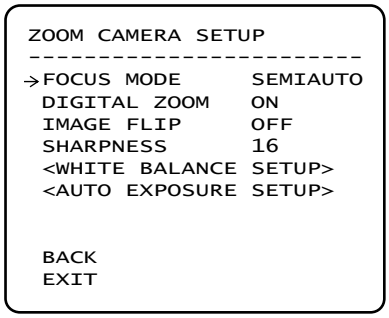
  Displays the preset labels when the camera arrives at presets.

❑ Compass Direction Setup

```
SET NORTH DIRECTION
------------------------




MOVE TO TARGET POSITION
[NEAR:SAVE   /FAR:CANCEL
```

Move the camera to a target position and press the **NEAR** button to save the direction as North. The direction is the reference direction to assign other compass directions.

Camera Setup



The Zoom Camera Setup menu sets the general functions of the zoom camera module.

- Focus Mode [AUTO/MANUAL/SEMIAUTO]

  Sets camera focus mode.

  ○ SEMIAUTO mode

  This mode automatically exchanges focus modes between Manual Focus mode and Auto Focus mode by operation. Manual Focus mode activates in preset operation and Auto Focus mode activates during jog operation. In Manual Focus mode, focus data is memorized for each Preset in advance. When the camera arrives at a Preset, the camera remembers the focus data for that Preset, shortening the focus time. Focus mode automatically changes to Auto Focus mode when jog operation starts.

- Digital Zoom [ON/OFF]

  Enables or disables the Digital Zoom function. When this is set to OFF, the optical zoom function runs but stops at the end of optical zoom magnification.

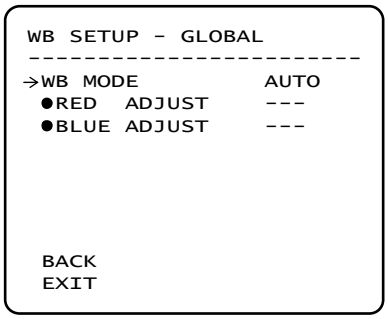
- Image Flip [ON/OFF]

  Enables or disables Image Flip function. When the camera is installed as Desktop type, set to ON to get proper images.

- Sharpness [0~31]

  Sets image sharpness to enhance pictures.

❑ White Balance Setup



- WB Mode [AUTO/MANUAL]

  Retains color balance over a color temperature range. In Auto mode, this feature automatically processes the viewed image. In Manual mode, red and blue levels can be set up manually.

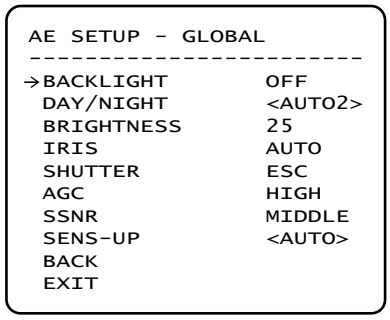
- Red Adjust [10~50]

  Adjusts the picture output in the red range.

- Blue Adjust [10~60]

  Adjusts the picture output in the blue range.

❑ Auto Exposure Setup



- Backlight [ON/OFF]

  Enables or disables Backlight Compensation. If bright backlighting is present, the subjects in the picture may appear dark or as a silhouette. Backlight compensation enhances objects in the center of the picture. The camera uses the center of the picture to adjust the iris. If there is a bright light source outside of this area, it will wash out to white. The camera will adjust the iris so that the object in the sensitive area is properly exposed.

- Day/Night [AUTO1/AUTO2/DAY/NIGHT]

  Day and Night mode. You can increase sensitivity in low-light conditions by switching to black/white mode (removing the IR cut filter or turning on DSS). Color mode is preferred in normal lighting conditions. The time to change a mode is 10 sec.

  # AUTO1 mode: The sensitivity to change a mode is fixed.

  # AUTO2 mode: The sensitivity to change Night mode to Day mode is adjustable. The sensitivity range is 1~255. The higher the numeric value selected, the lower the light levels at which Night mode changes to Day mode. If this is set to AUTO2 mode, ACG is fixed to HIGH.

- Brightness [0~100]

  Adjusts the brightness of the images. Iris, Shutter Speed, and Gain are adjusted automatically.

- IRIS [AUTO/MANUAL(0~100)]

  Sets Iris to operate automatically or at a user-defined level. Auto Iris is the lens function that automatically opens or closes the iris in response to changing light conditions. If Iris is set to Auto, Iris has higher priority in adjusting Auto Exposure, and Shutter Speed is fixed.

  If Iris is set to Manual, Iris is fixed and has lower priority in adjusting Auto Exposure. The Iris level range is 0 ~ 100.

- Shutter Speed [ESC/A.Flicker/Manual(×128~1/120000 sec)]

  Sets Shutter Speed. Shutter Speed is the duration of the electronic shutter. If Iris is set to Manual and Shutter Speed is set to ESC, Shutter Speed has higher priority. If Shutter Speed is set to A.Flicker, to remove Flicker, Shutter Speed should be set to 1/100 sec. for NTSC and 1/120 for PAL.

- AGC [OFF/NORMAL/HIGH]

  Sets Auto Gain Control (AGC). This setting enhances image brightness automatically in the event that the luminance level of the image signal is too low.

- SSNR [OFF/LOW/MIDDLE/HIGH]

  Sets Samsung Super Noise Reduction (SSNR). This setting enhances the images by deducting noises when the gain level of the images is too high.

- SENS-UP [AUTO(2~128)/OFF]

  Sets Sens-up. This setting activates the Slow Shutter function when the luminance of the image (signal) is too dark.

  It is possible to set up the maximum number of frames piled one upon another by using the Slow Shutter function.

Motion Setup

```
MOTION SETUP
------------------------
→MOTION LOCK      OFF
 PWR UP ACTION    ON
 AUTO FLIP        ON
 JOG MAX SPEED    120/SEC
 JOG DIRECTION    INVERSE
 FRZ IN PRESET    OFF
 <PARKING ACTION SETUP>

 BACK
 EXIT
```

Sets the general functions of pan/tilt motions.

- Motion Lock [ON/OFF]

  If Motion Lock is set to ON, it is impossible to set up or delete Preset, Swing, Pattern and Group. It is only possible to run those functions

- Power Up Action [ON/OFF]

  Refer to “Other Functions" section.

- Auto Flip [ON/OFF]

  Refer to “Other Functions" section.

- Jog Max Speed [1°/sec ~360°/sec]

  Sets the maximum jog speed. The Jog speed is inversely proportional to the zoom magnifications. As the zoom magnification increases, the pan/tilt speed decreases.

- Jog Direction [INVERSE/NORMAL]

  Sets the jog direction. If this is set to INVERSE, the view direction displayed on the screen is same as the direction of joystick. If the jog direction is set to NORMAL, the view direction in the screen is the reverse direction of joystick.

- Freeze in Preset [ON/OFF]

  Sets Frame Freeze function. This feature freezes the scene on the monitor when going to a Preset. At the start point of a Preset movement, the camera starts freezing the image of the start point. The camera keeps displaying the image of the start point during Preset movement and does not display the images acquired during the movement. As soon as camera stops at the Preset end point, the camera begins displaying live images acquired during the movement. This feature reduces bandwidth when working with digital systems or digital network systems.

❑ Parking Action Setup

```
PARKING ACTION SETUP
------------------------
→PARK ENABLE    OFF
 WAIT TIME      00:10:00
 PARK ACTION    HOME




 BACK
 EXIT
```

This feature allows the camera to begin a specified action after a programmed time of inactivity.

- Park Enable [ON/OFF]

  If Park Enable is set to ON, the camera runs an assigned function automatically if no PTZ command is received during the programmed Wait Time.

- Wait Time [1~59 sec. / 1~180 min.]

  Wait Time can be programmed from 1 second to 180 minutes.

- Park Action [HOME/PRESET/PATTERN/SWING/GROUP/PREV ACTION]

  This feature defines the activity when the camera parks. If Park Action is set to HOME, the camera moves to the home position which is memorized when the system boots. If Park Action is set to PREV. ACTION, the camera runs the most recent action.

Preset Setup

```
PRESET SETUP
------------------------
→PRESET NO.     1

 CLR PRESET     CANCEL
 <EDIT SCENE>
 <EDIT LABEL>   LABEL123
 CAM ADJUST     GLOBAL


 BACK
 EXIT
```

- Preset Number [1~128]

  Selects a Preset number to set up. If a selected Preset is already defined, the camera moves to the pre-defined position and parameters such as Label and Cam Adjust show on the monitor. If a selected Preset is not defined, UNDEFINED shows on the monitor.

- Clear Preset [CANCEL/OK]

  Deletes the data of the selected Preset.

- Edit Preset Scene Redefines the scene position of the selected Preset.

- Edit Preset Label Edits the label of the selected Preset to show on the monitor when the Preset runs. Maximum 10 alphanumeric characters are allowed.

- Cam Adjust [GLOBAL/LOCAL]

  White Balance (WB) and Auto Exposure (AE) can be set up independently for each Preset. There are two modes: Global mode and Local mode. In Global mode, WB and/or AE are set up simultaneously for all Presets. Global WB/AE parameters are set up in the Zoom Camera Setup menu. In Local mode, WB/AE are set up separately for each Preset. Local WB/AE parameters are set up in each Preset setup menu. The settings are activated when the camera arrives at the Preset position. During jog operation, Global WB/AE values should be applied.

  Note that Local mode settings have priority over Global mode settings. Local WB/AE values do not change when Global WB/AE values are change.

❑ Preset Scene Setup

```
EDIT SCENE - PRESET 1
-----------------------




MOVE TO TARGET POSITION
[NEAR:SAVE  /FAR:CANCEL]
```

① Use the Joystick to move the camera to a desired position.

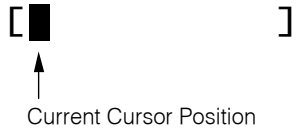
② Save the Preset position by pressing the **NEAR** key

③ Press the **FAR** key to cancel targeting the Preset position.

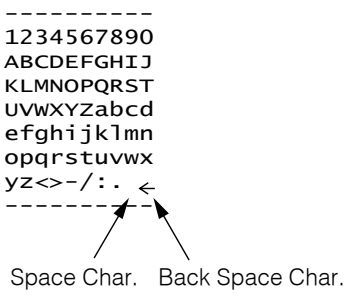
❑ Preset Label Setup

```
EDIT LABEL - PRESET 1
-----------------------
  [          ]
   ----------
   1234567890      OK
   ABCDEFGHIJ      CANCEL
   KLMNOPQRST
   UVWXYZabcd
   efghijklmn
   opqrstuvwx
   yz<>-/:. ←
   ----------
```

Enter/edit the text that will show on the monitor when the camera arrives at the selected Preset.



Using the Left/Right/Up/Down movements of the joystick, scroll to the letter or number you want and press the **NEAR** key.



If you want to enter a blank space, select the double quotation mark (" "). If you want to delete a letter or number, select the backspace character ("←").

After you finish entering text, move the cursor to OK and press the **NEAR** key to save the completed label. To cancel the current change, move the cursor to CANCEL and press the **NEAR** key.

Swing Setup

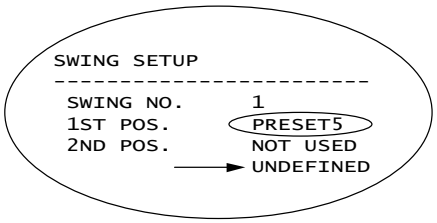
```
SWING SETUP
------------------------
→SWING NO.      1
 1ST POS.       NOT USED
 2ND POS.       NOT USED

 SWING SPEED    30/SEC
 CLEAR SWING    CANCEL
 RUN SWING

 BACK
 EXIT
```

- Swing Number [1~8]

  Selects a Swing number to edit. If the selected Swing is not defined, NOT USED is displayed in the 1st Position and the 2nd Position.

- 1st Position [PRESET 1~128]

  2nd Position Sets the two positions for a Swing function. If the selected Preset is not defined, UNDEFINED is displayed as shown below.



When a Swing function runs, the camera moves from the Preset assigned as the first point to the Preset assigned as the second point in a clockwise direction. Then the camera moves from the Preset assigned as the second point to the Preset assigned as the first point in a counterclockwise direction. Where the preset assigned as the first point and the Preset assigned as the second point are same, or only one Preset position is assigned, the camera turns on its axis by 360° in a clockwise direction and then it turns on its axis by 360° in a counterclockwise direction.

- Swing Speed [1°/sec. ~180°/sec.]

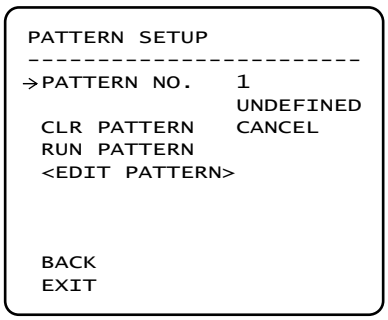
  Defines Swing speed between the two Preset positions from 1°/sec to 180°/sec

- Clear Swing [CANCEL/OK]

  Deletes the data of the selected Swing.

- Run Swing Runs Swing for test purposes to check if it works properly.

Pattern Setup



- Pattern Number [1~4]

  Selects a Pattern number to edit. If the selected pattern number is not defined, UNDEFINED is displayed under the selected Pattern number.

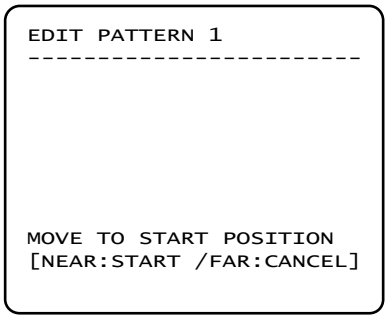
- Clear Pattern [CANCEL/OK]

  Deletes the data of the selected Pattern.

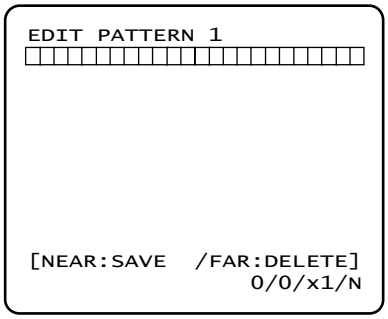
- Run Pattern Runs the Pattern for test purposes to check if it works properly.

- Edit Pattern Edits the selected Pattern.

❑ Pattern Edit



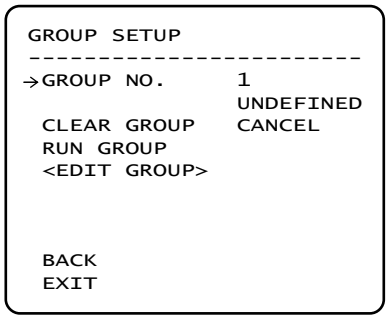
① With the joystick of your controller, move the camera to the start position at an appropriate zoom magnification. To start recording the Pattern, press the **NEAR** key. To exit, press the **FAR** key.



② Move the camera with the joystick of controller or run a Preset function to program the Pattern. The path created by joystick or Preset movement will be memorized by the camera. After a Pattern is programmed, the remaining storage is displayed in a progress bar at the top of the screen.

③ To save the data and exit, press the **NEAR** key. To cancel saving the data, or to delete the data, press the **FAR** key.

Group Setup



- Group Number [1~8]

  Selects a Group number to edit.

  If the selected Group number is not defined, UNDEFINED is displayed under the selected Group number.

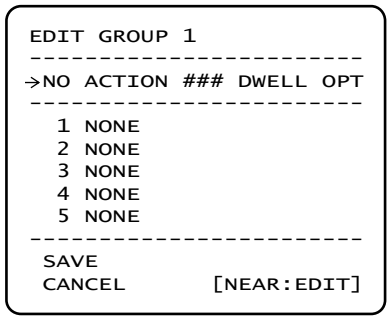
- Clear Group [CANCEL/OK]

  Deletes the data of the selected Group.

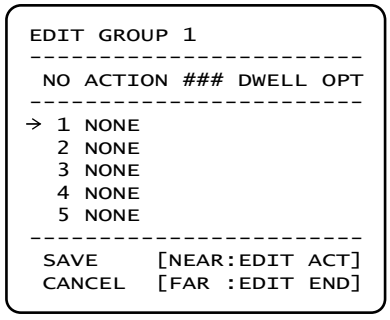
- Run Group Runs the Group for the test purposes to check if it works properly.

- Edit Group Edits the selected Group.

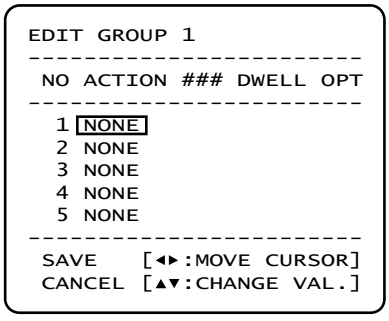
❑ Group Edit



① Press the **Near** key when the cursor is at "NO" to start editing the selected Group.



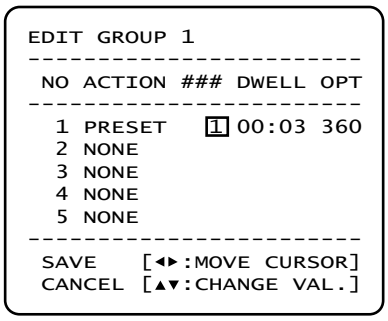
② Note that maximum 20 actions are allowed in a Group. Move the cursor up/down to select an Action. Press the **Near** key to edit the Action.



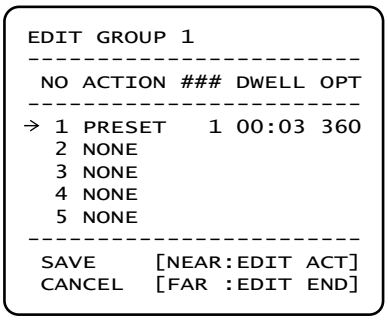
③ Define Action, Dwell Time and Option. Move the cursor using the Left/Right arrow buttons of your controller to select an item. Move the cursor using the Up/Down arrow buttons on your controller to change each parameter.

- ACTION [NONE/PRESET/SWING/PATTERN]
- DWELL [0 SEC. ~ 4 MIN.]

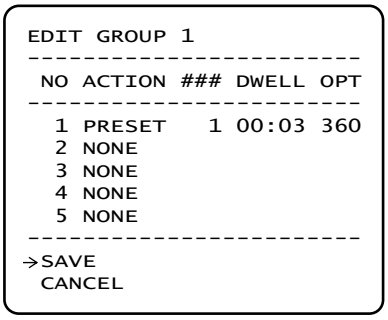
  Sets the Dwell Time between functions.
- OPT Option. It is the Preset speed when the selected action is a Preset. It is the number of repeats when the selected action is a Pattern or Swing.



④ Edit the Action, Dwell and Option by moving the cursor.



⑤ After you have finished editing an Action, press the **Near** key to go to the previous upper-level menu (Step ②). Move the cursor **Up**/**Down** to select an Action number and repeat Step ② ~ Step ④ to keep editing the selected Group.



⑥ After you have finished editing the selected Group, press the **FAR** key to exit. The cursor will then move to SAVE. Press the **Near** key to save the data.

System Initialization

```
SYSTEM INITIALIZE
-----------------------
→CLEAR ALL DATA      NO
 ●CLR DISPLAY SET    NO
 ●CLR CAMERA SET     NO
 ●CLR MOTION SET     NO
 ●CLR EDIT DATA      NO
 REBOOT CAMERA       NO
 REBOOT SYSTEM       NO

 BACK
 EXIT
```

- Clear All Data — Deletes all configuration data and resets the system is set to the factory default.
- Clear Display Set — Initializes all the configuration data for Display.
- Clear Camera Set — Initializes all the configuration data for Camera.
- Clear Motion Set — Initializes all the configuration data for Motion.
- Clear Edit Data — Deletes all the configuration data for Preset, Swing, Pattern and Group.
- Reboot Camera — Reboots the zoom camera module.
- Reboot System — Reboots the system.

Table 4-1 Factory Default Setting

● Display Parameters	
Camera ID	ON
PTZ Information	AUTO
Action Title	AUTO
Preset Label	AUTO
North Direction	Pan 0°

● Motion Parameters	
Motion Lock	OFF
Power Up Action	ON
Auto Flip	ON
Jog Max Speed	120°/sec
Jog Direction	INVERSE
Freeze In Preset	OFF
Park Action	OFF

● Camera Parameters	
Focus Mode	Semi-Auto
Digital Zoom	ON
Image Flip	OFF
Sharpness	16
White Balance	AUTO
Backlight	OFF
Day/Night	AUTO2
Night→Day Level	176
Brightness	25
Iris	AUTO
Shutter	ESC
AGC	HIGH
SSNR	MIDDLE
SENS-UP	AUTO (4 Frame)

● User-Defined Data	
Preset 1~128	Undefined
Swing 1~8	Undefined
Pattern 1~4	Undefined
Group 1~8	Undefined

Appendix A Specifications

CAMERA PART		
Video Signal Format	NTSC	PAL
Image Sensor	1/4" Interline Transfer CCD	
Total Pixels	811(H)×508(V) 410K	795(H)×596(V) 470K
Effective Pixels	768(H)×494(V) 380K	752(H)×582(V) 440K
Horizontal Resolution	470 TV Lines (Color), 540 TV Lines (B/W)	
Video Signal-to-Noise	50 dB (AGC Off)	
Zoom	×10 Optical Zoom, ×10 Digital Zoom	
Focal Length	F1.8, f=3.8~38mm	
Angle of View	H: 51.2°(Wide)~5.58°(Tele) / V: 39.3°(Wide)~4.27°(Tele)	
Zoom Speed	1.67 sec (Wide to Tele)	1.75 sec (Wide to Tele)
Minimum Illuminance	0.7 Lux (Color) / 0. 02 Lux (B/W), 50 IRE	
Day/Night	Auto / Day / Night (ICR)	
Focus	Auto / Manual / Semi-Auto	
Iris	Auto / Manual	
Shutter Speed	×128 ~ 1/120000 sec	
AGC	Normal / High / Off	
White Balance	Auto / Manual (Red, Blue Gain Adjustable)	
BLC	Low / Middle / High / Off	
Flickerless	Selectable	
SSNR	Low / Middle / High / Off	

MECHANISM PART		
Movement Range	Pan	360° (Endless)
	Tilt	90°
Speed	Preset	360°/sec.
	Jog	0.05 ~ 360°/sec. (Proportional to Zoom)
	Swing	1~ 180°/sec.
Preset Accuracy		± 0.2°
Preset		127 Presets (Label, Independent Camera Parameter Setting)
Pattern		4 Patterns [1200 Commands (Approx. 5 Minutes) / Pattern]
Swing		8 Swings
Group		8 Groups (Max. 20 Actions with the Combination of Preset, Pattern and Swing)
Other Pan/Tilt Functions		Auto Flip, Auto Parking, Power Up Action, etc.
Communication		RS-485
Protocol		Pelco-D
OSD		English, Menu / PTZ Information, etc.
Rated Power		DC 12V / 0.8A or AC 24V / 0.4A (Dual Power)
Operation Temperature		0°C ~ 40°C

MOUNTS	Description
HDTW	Performance PTZ Wall Mount Bracket
HDTC	Performance PTZ Ceiling Mount Bracket

MECHANICAL			
	Surface Mount	Ceiling Mount	Wall Mount
Dome Size	∅107.5 mm / ∅ 4.2”		
Dimensions	129.5×142.5 mm	129.5×200.5 mm	210.8×220.5 mm
Weight	Approx 0.78 kg	Approx 0.87 kg	Approx 0.91 kg

[Note]

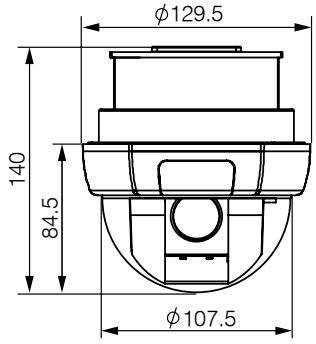
1) Specifications and features are subject to change without prior notice.

2) Specifications and features are different by model.

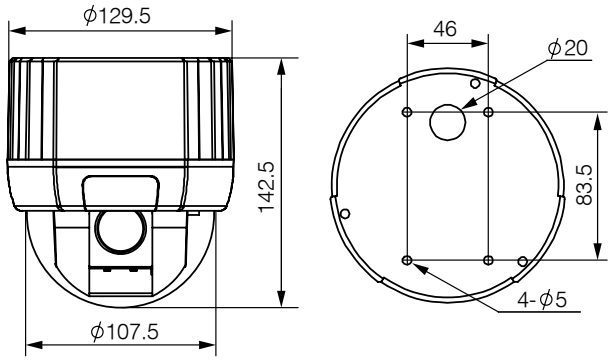
3) Check the voltage and current capacity of rated power carefully.

Appendix B Dimensions

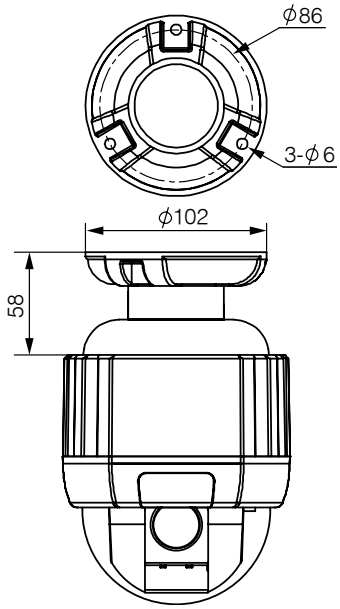
● Main Body



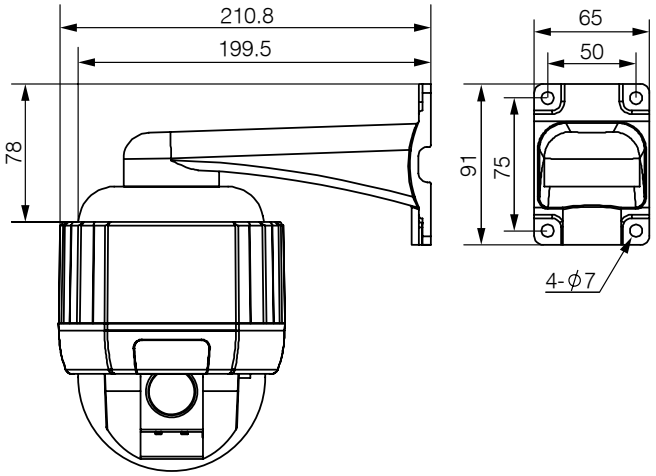
● Surface Mount Type



● Ceiling Mount Type



● Wall Mount Type



[Unit: mm]

Honeywell Security Group (Head Office)
2700 Blankenbaker Pkwy, Suite 150
Louisville, KY 40299, USA
www.honeywellvideo.com
☎ +1.800.796.2288

Honeywell Security Group Europe/South Africa
Aston Fields Road, Whitehouse Industrial Estate
Runcorn, Cheshire, WA7 3DL, UK
www.honeywell.com/security/uk
☎ +44.01928.754028

Honeywell Security Group Caribbean/Latin America
9315 NW 112th Ave.
Miami, FL 33178, USA
www.honeywellvideo.com
☎ +1.305.805.8188

Honeywell Security Group Pacific
Level 3, 2 Richardson Place
North Ryde, NSW 2113, Australia
www.honeywellsecurity.com.au
☎ +61.2.9353.7000

Honeywell Security Group Asia
35F Tower A, City Center, 100 Zun Yi Road
Shanghai 200051, China
www.asia.security.honeywell.com
☎ +86 21.5257.4568

Honeywell Security Group Middle East/N. Africa
Post Office Box 18530
LOB Building 08, Office 199
Jebel Ali, Dubai, United Arab Emirates
www. honeywell.com/security/me
☎ +971.04.881.5506

Honeywell Security Group Northern Europe
Ampèrestraat 41
1446 TR Purmerend, The Netherlands
www.honeywellvideo.com/security/nl
☎ +31.299.410.200

Honeywell Security Group Deutschland
Johannes-Mauthe-Straße 14
D-72458 Albstadt, Germany
www.honeywell.com/security/de
☎ +49.74 31.8 01.0

Honeywell Security Group France
Immeuble Lavoisier
Parc de Haute Technologie
3-7 rue Georges Besse
92160 Antony, France
www.honeywell.com/security/fr
☎ +33.(0).1.40.96.20.50

Honeywell Security Group Italia SpA
Via della Resitenza 53/59
20090 Buccinasco
Milan, Italy
www.honeywell.com/security/it
☎ +39.02.4888.051

Honeywell Security Group España
Avenida de Italia, n° 7
P.I. – C.T.C. Coslada
28820 Coslada, Madrid, Spain
www.honeywell.com/security/es
☎ +34.902.667.800

Honeywell

www.honeywellvideo.com
+1.800.796.CCTV (North America only)
HVSsupport@honeywell.com

Document 800-06705 – Rev A – 12/10