



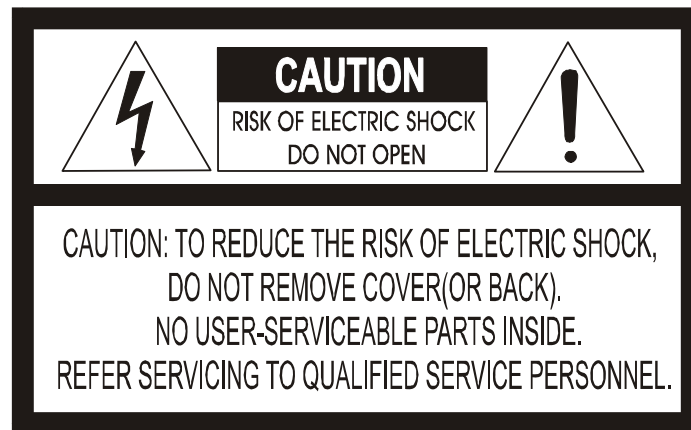
FASTRAX IV SPEED DOME CAMERA

Please read this manual thoroughly before use, and keep it handy for future reference.

WARNING

TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS PRODUCT TO RAIN OR MOISTURE. DO NOT INSERT ANY METALLIC OBJECTS THROUGH THE VENTILATION GRILLS OR OTHER OPENINGS ON THE EQUIPMENT.

CAUTION



EXPLANATION OF GRAPHICAL SYMBOLS



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instruction in the literature accompanying the product.

FCC COMPLIANCE STATEMENT

FCC INFORMATION: THIS EQUIPMENT HAS BEEN TESTED AND FOUND TO COMPLY WITH THE LIMITS FOR A CLASS A DIGITAL DEVICE, PURSUANT TO PART 15 OF THE FCC RULES. THESE LIMITS ARE DESIGNED TO PROVIDE REASONABLE PROTECTION AGAINST HARMFUL INTERFERENCE WHEN THE EQUIPMENT IS OPERATED IN A COMMERCIAL ENVIRONMENT. THIS EQUIPMENT GENERATES, USES, AND CAN RADIATE RADIO FREQUENCY ENERGY AND IF NOT INSTALLED AND USED IN ACCORDANCE WITH THE INSTRUCTION MANUAL, MAY CAUSE HARMFUL INTERFERENCE TO RADIO COMMUNICATIONS. OPERATION OF THIS EQUIPMENT IN A RESIDENTIAL AREA IS LIKELY TO CAUSE HARMFUL INTERFERENCE IN WHICH CASE THE USER WILL BE REQUIRED TO CORRECT THE INTERFERENCE AT HIS OWN EXPENSE.

CAUTION: CHANGES OR MODIFICATIONS NOT EXPRESSLY APPROVED BY THE PARTY RESPONSIBLE FOR COMPLIANCE COULD VOID THE USER'S AUTHORITY TO OPERATE THE EQUIPMENT.

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.

CE COMPLIANCE STATEMENT

WARNING

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 MEASURES.

CAUTION

DANGER OF EXPLOSION IF BATTERY IS INCORRECTLY REPLACED.
REPLACE ONLY WITH THE SAME OR EQUIVALENT TYPE.

IMPORTANT SAFEGUARDS

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
13. Unplug this apparatus during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been moisture, does not operate normally, or has been dropped.
15. **CAUTION – THESE SERVICING INSTRUCTIONS ARE FOR USE BY QUALIFIED SERVICE PERSONNEL ONLY. TO REDUCE THE RISK OF ELECTRIC SHOCK DO NOT PERFORM ANY SERVICING OTHER THAN THAT CONTAINED IN THE OPERATING INSTRUCTIONS UNLESS YOU ARE QUALIFIED TO DO SO.**
16. **Use Certified/Listed Class 2 power source only.**
17. Apparatus shall not be exposed to dripping or splashing and no object filled with liquids, such as vases, shall be placed on the apparatus.



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Chapter 1 — Introduction

1.1 Features

The Fastrax IV dome camera and the keyboard controller make up the building blocks for any surveillance/security system. Using multiple Keyboard Controllers and multiple dome cameras, no place is too large for monitoring. Extensible and flexible architecture facilitates remote control functions for a variety of external switching devices such as multiplexers and DVRs.

- Built-in optical power zoom camera with True Night Shot function.
- 240 Preset positions (Individual AE and Event).
- 8 Tours consist of Preset, Pattern, Auto-Scan and other Tours can be programmed with over 300 functions and Preset location. While moving, each Preset scan can be watched in smooth **Vector Scan** mode.
- 16 Auto Scans with the normal, the vector, and the **random** mode and the Endless Auto-Pan with 13 speed steps.
- 8 Patterns (up to 500 second) and 8 Privacy zones.
- Motion Detection (Bounding Box, Trace)
- Auto Tracking and Cross Tracking.
- Video Analytics Function (Cross, Enter, Abandon and Removal).
- DIS (Digital Image Stabilization) Function.
- Function Scheduling.
- 16 Area Titles.
- 8 Alarm inputs / 4 Aux outs (NC & NO).
- Variable speed from 0.1°/sec to 380°/sec.
 - Three Variable speed (SLOW, NORMAL, TURBO)
 - Turbo speed is Max 380°/sec with Ctrl key pressed.
- Pan / Tilt speed is inversely proportional to the zoom ratio with the option.
- Maximum speed is 380°/sec when preset command.
- Auto Calibration from 0.1° to 6° (Tilt range is 0° to 180°).
- Programmable user preferences (alarm, preset, title, etc.).
- 180° Digital Flip or 90° Auto Flip depended on the model.
- Up to 999 selectable camera addresses (3999 by software setting).
- Multi-language Menu Display, Password Confirmation.
- Function Run menu using DVR without function key (Pattern, SCAN,...)
- Coaxial Communication with Coaxitron of Pelco & Fastrax
- Built-in RS-485/422 receiver driver.
- Optional Clear bubble with black liner (shelter) for concealing the camera.

- Optional Tinted Bubble, Indoor & Outdoor pendant housing with heater & blower, Indoor Flush mount, Parapet mount & Roof Top mount.

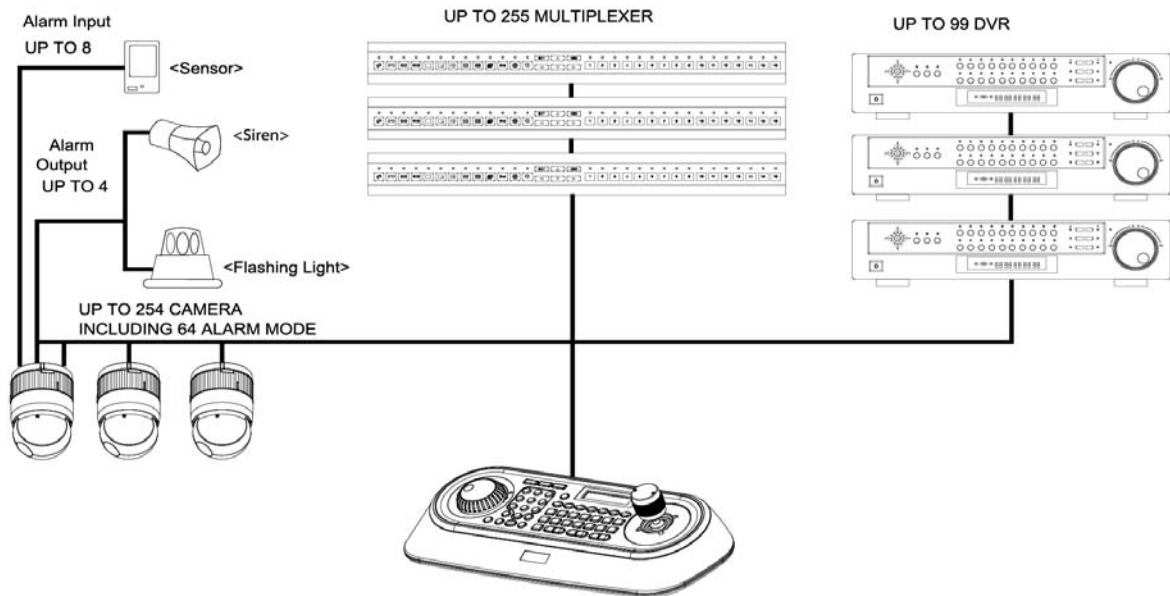


Figure 1 – Typical System Configuration

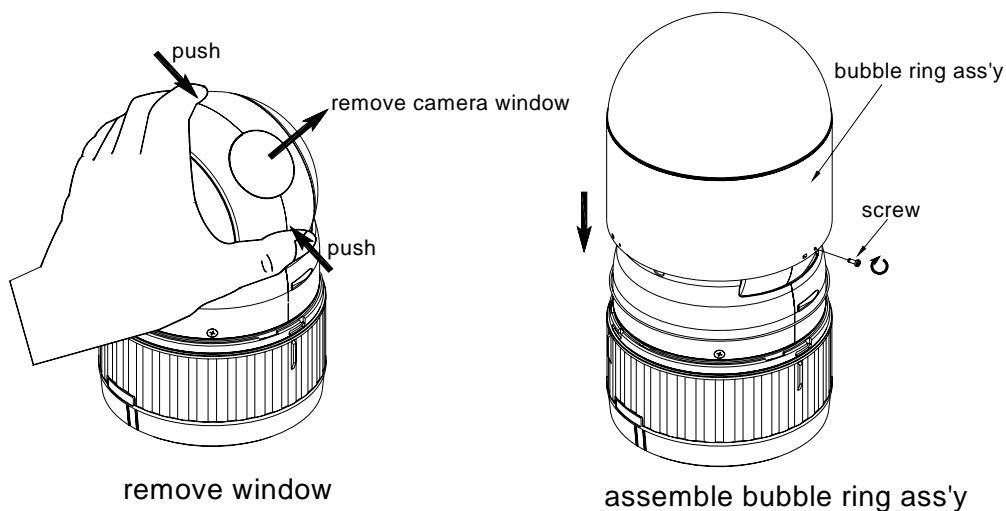


Figure 2 –Assemble bubble ring ass'y (Optional)

Note : *It is recommended to remove camera window for improving picture quality when you use bubble ring ass'y.*

CAUTION : When installing a Fastrax dome on a high pole outside, caution should be taken to avoid vibration and shaking of Fastrax dome due to windload or shock of passing heavy vehicles. If pole is not stable enough, it may cause malfunction in accurate tilt positioning.

Chapter 2 — Installation and Configuration

2.1 Package Contents

The package contains the following.

Fastrax IV (Dome Camera)1
Bubble Ring1(Optional)
Instruction Manual (This Document)1
Assembly Screws for Attaching Fastrax IV3
Plastic Anchor3
10Pin Connector1
12Pin Connector2

CAUTION : Be sure to have caution labels (E version only) on both the body and the base of the camera. Different version will not support input and output.

The dome camera is for use in surface mounting applications and the mounting surface should be capable of supporting loads up to 10lb (4.5kg).

The dome camera's base should be attached to a structural object, such as hard wood, wall stud or ceiling rafter that supports the weight of the dome camera.

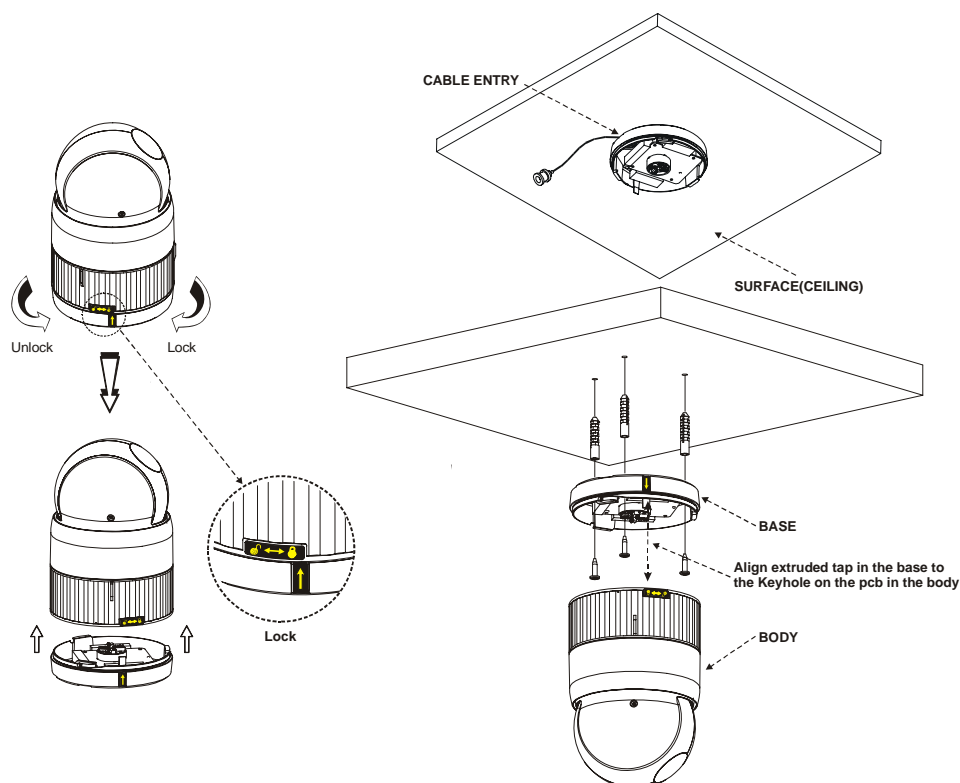


Figure 3 – Installation

2.2 Basic Configuration of Fastrax IV Dome Camera System

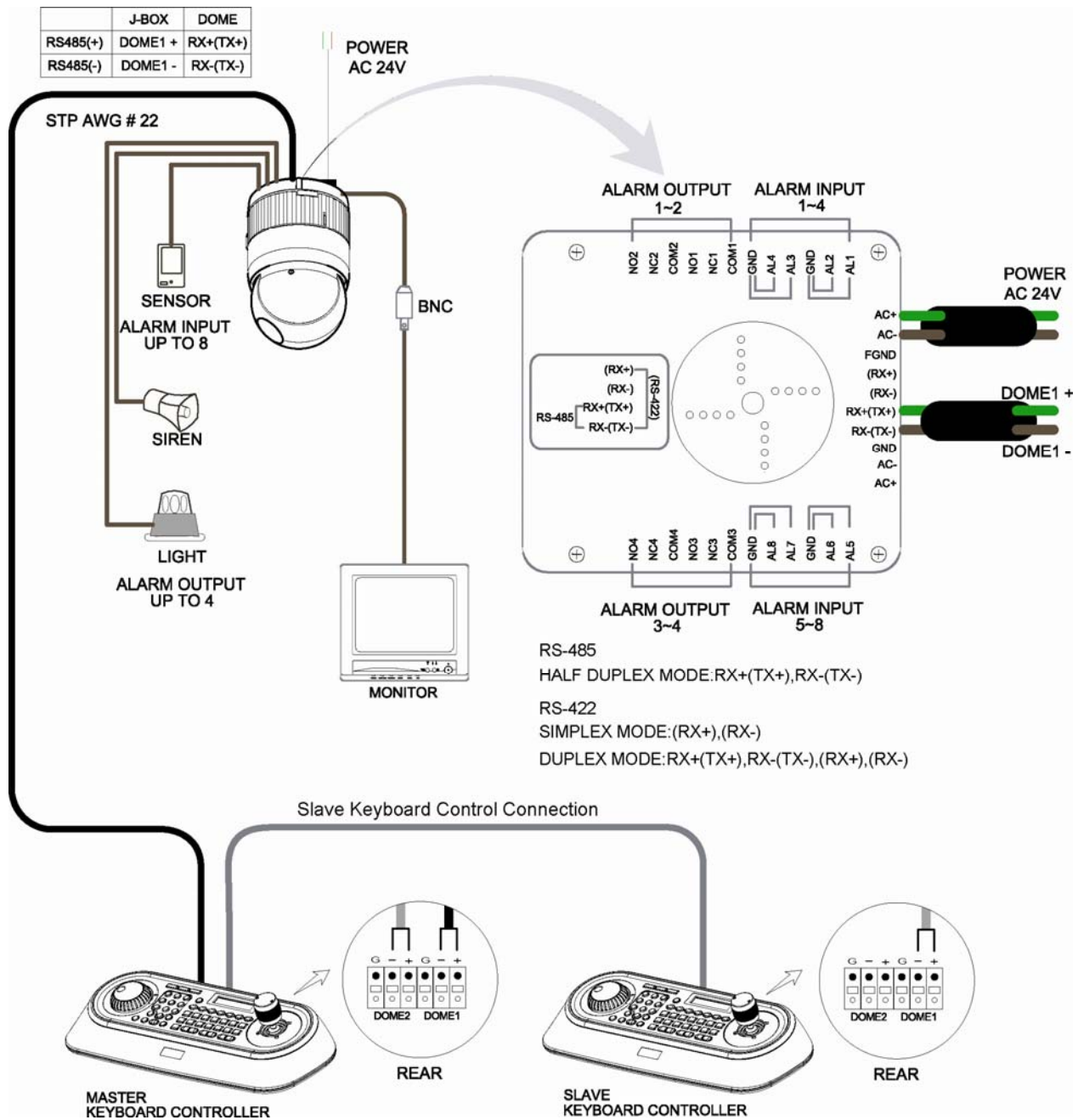


Figure 4 – Basic installation diagram

The dome camera must be installed by qualified service personnel in accordance with all local and federal electrical and building codes. The system should be installed according to Figures 4 through 9.

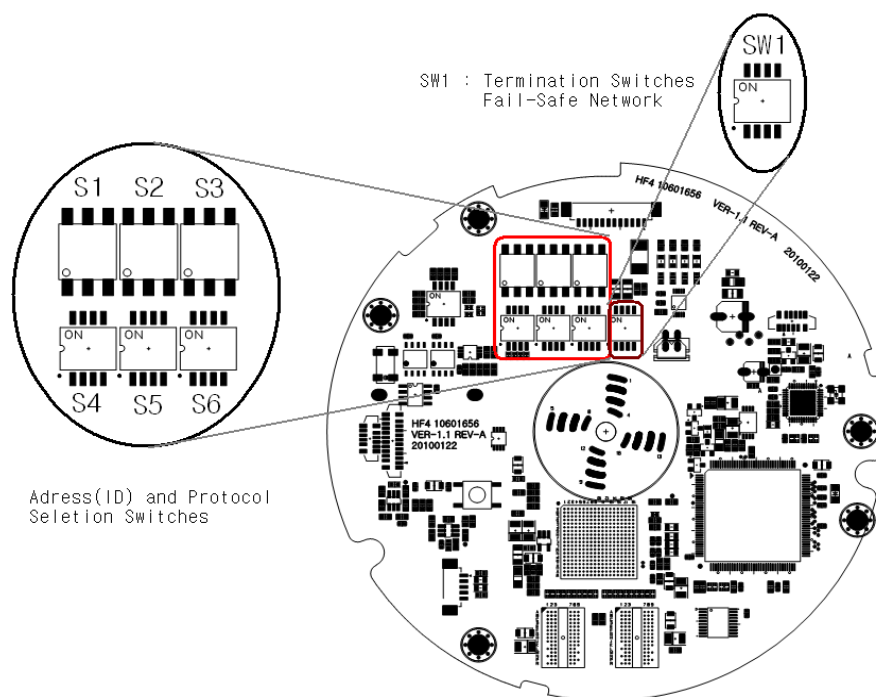
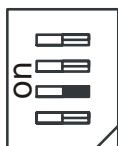


Figure 5 – Layout of Switches

2.3 Setting Dome Camera Termination

The device which is connected at end of line, whether it be a dome camera or keyboard controller, must have the cable for communication terminated by setting the appropriate DIP switch. Without proper termination, there is potential for control signal errors. Total length of the cable for communication should not exceed 4000ft (1.2km).

SW1



SW1	SW1-1	SW1-2
Terminated	ON	ON
Not terminated	OFF	OFF

Figure 6 – Setting Dome Camera Termination

2.4 Fail-safe Network

When you control the dome by the other device not own keyboard, some error may be existed in the serial communication. The reason is caused by the other device without the fail-safe network.

At this time, you solve the problem to set this DIP switch to ON of the nearest dome from the other device only.

SW1



SW1	SW1-3	SW1-4
ON	PULL-UP	PULL-DOWN
OFF	NONE	NONE

Figure 7 – Setting Dome Camera Termination

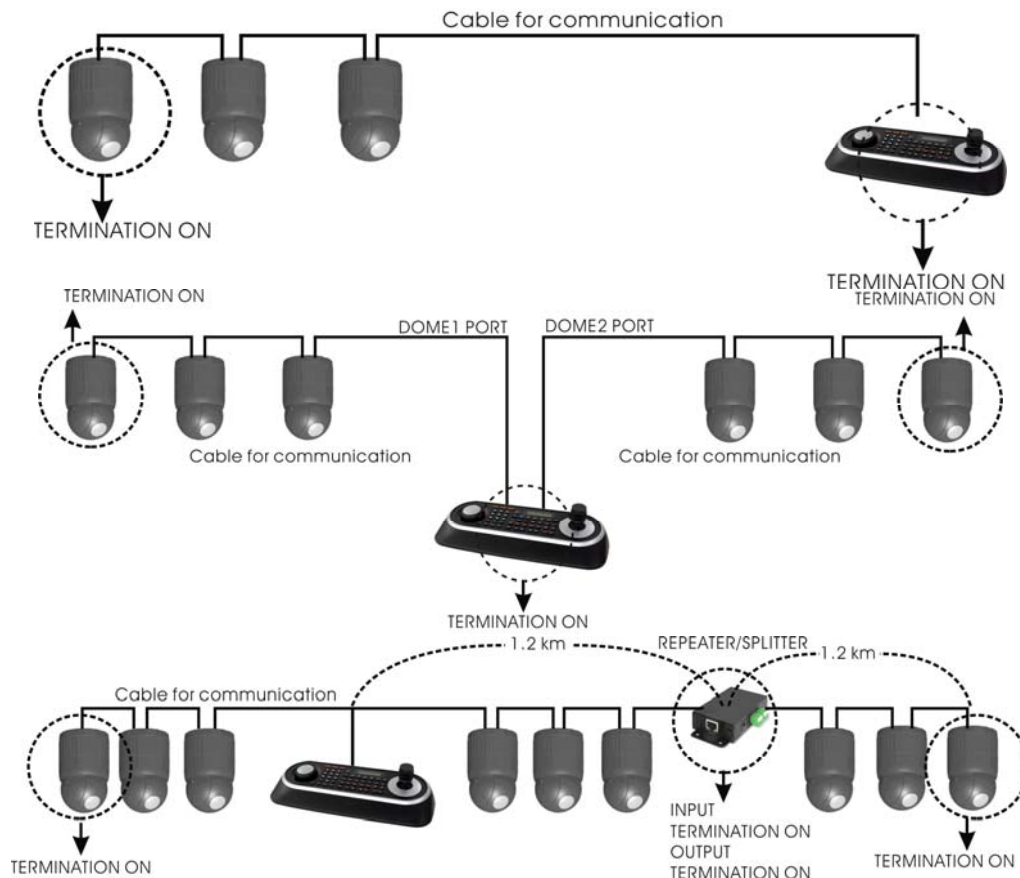


Figure 8- Termination Diagram

2.5 Setting Dome Camera Address (ID)

To prevent damage, each dome camera must have a unique address (ID). When installing multiple dome cameras using a multiplexer, it is suggested that the dome camera address match the multiplexer port number.

If you want to set the address more than 999, you should contact the service provider.

Example: Port 1 = Dome 1, Port 2 = Dome 2 ... Port 16 = Dome 16. If more than 16 dome cameras are installed using two or more multiplexers, ID of the dome camera should be ID of MUX x No. of camera IN. (e.g. multiplexer ID= n, Camera IN= m then ID of Dome =16x (n-1)+m)

Refer to Figures 4-5 for setting the dome camera address (ID) and protocol selection.

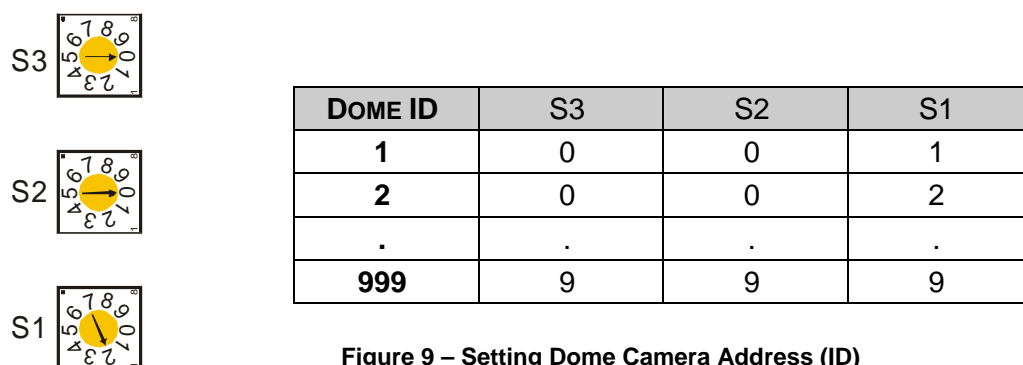


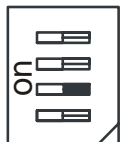
Figure 9 – Setting Dome Camera Address (ID)

2.6 Setting Dome Camera Protocol

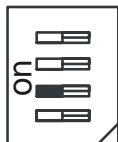
If a dome camera is to be installed with a Fastrax keyboard controller, select the default protocol.

Consult service personnel if a dome camera is installed with device other than a keyboard controller.

NTSC



PAL



S4

S4

S/W		On	Off	FUNCTION
D1	S4-1	Enable	Disable	Alarm
D2	S4-2	PAL	NTSC	NTSC/PAL
D3	S4-3			Reserved
D4	S4-4	RS-422	RS-485	RS-422/RS-485

D5	D6	D7	D12	PROTOCOL
S5-1	S5-2	S5-3	S6-4	
Off	Off	Off	Off	F2,F2E,Pelco-D,Pelco-P: default
Off	Off	On	Off	F2,F2E
Off	On	Off	Off	Sensormatic RS422
Off	On	On	Off	Pelco-D, Pelco-P
On	Off	Off	Off	Vicon
On	Off	On	Off	Ernitec
On	On	Off	Off	Reserved
On	On	On	Off	F2
Off	Off	Off	On	Philips(Bosch)
Off	Off	On	On	Reserved
Off	On	Off	On	Dynacolor
Off	On	On	On	Reserved

D8	D9	D10	BAUD RATE
S5-4	S6-1	S6-2	
Off	Off	Off	2400 bps
Off	Off	On	4800 bps
Off	On	Off	9600 bps (Default)
Off	On	On	19200 bps
On	Off	Off	38400 bps

D11	PARITY BIT
S6-3	
Off	None
On	Even

Figure 10 – Protocol Selection Switches

2.7 Connections

- **Connecting to the RS485/ 422**

The dome camera can be controlled remotely by an external device or control system, such as a control keyboard, using RS485 half-duplex, RS422 full duplex or simplex serial communications signals. Connect Marked Tx+, Tx- to Tx+(Rx+) and Tx-(Rx-) of the RS485 control system.

If control system is RS422, connect Rx+(Tx+), Rx+(Tx-) and Rx+, Rx- of the dome camera to Rx+, Rx- and Tx+, Tx- of the control device respectively.

- **Connecting Video out connector**

Connect the video out(BNC) connector to the monitor or video input.

- **Connecting Alarms**

AL1 to 8 (Alarm In)

You can use external devices to signal the dome camera to react on events. Mechanical or electrical switches can be wired to the AL (Alarm In) and GND (Ground) connectors. See Chapter 3 — Program and Operation for configuring alarm input.

GND (Ground)

NOTE: All the connectors marked GND are common.

Connect the ground side of the Alarm input and/or alarm output to the GND connector.

NC(NO)1 TO 4 (Normal Close or Normal Open : Alarm Out)

The dome camera can activate external devices such as buzzers or lights. Connect the device to the NC(NO) (Alarm Out) and COM (Common) connectors. See Chapter 3 — Program and Operation for configuring alarm output.

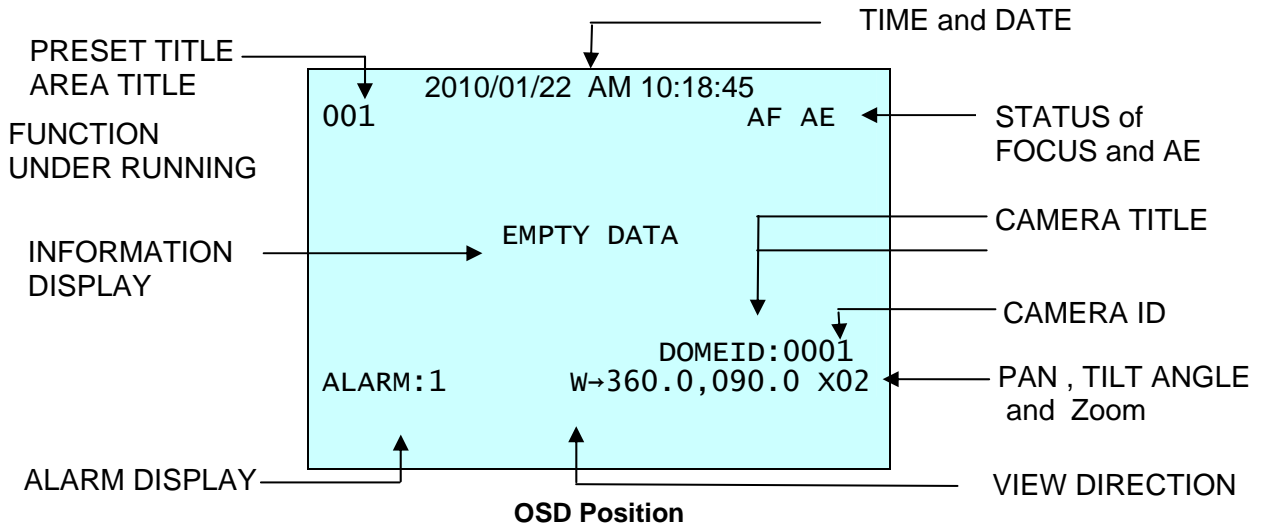
- **Connecting the Power**

Connect the power of AC 24V 850mA to the dome camera.

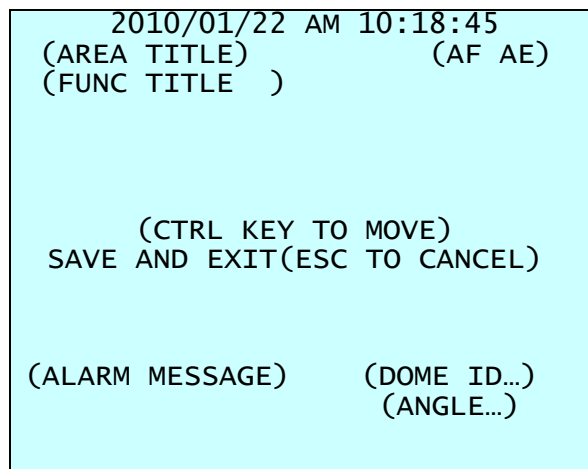
Use certified / Listed Class 2 power source only.

2.8 Getting Started

Once installed apply power to the dome camera. The dome camera will start a configuration sequence.



The dome can move the OSD position in the OSD position setup.



OSD Position Setup

Chapter 3 — Program and Operation

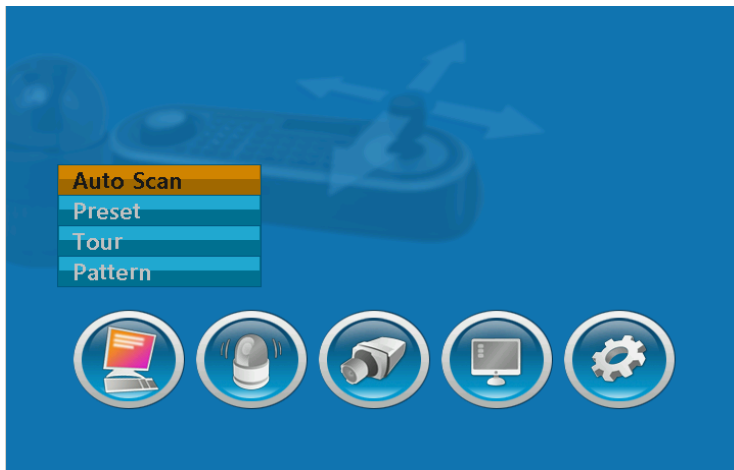
3.1 Dome Camera Selection

Before you program or operate a dome camera, you must select the dome camera by pressing the dome camera **No.** + **CAM**

Example: Pressing **1** , **0** and **CAM** key sequentially will select dome camera 10. The selected dome camera ID will be displayed on the LCD monitor of the keyboard controller.

3.2 Accessing the On-Screen Menu Utility

You can call up the On-screen menu utility on your monitor by pressing **MENU** key on the keyboard controller, the following On-screen menu utility will appear:



3.3 How to control the On-Screen Menu Utility

Function	Button
Call the On-screen menu utility	MENU
Navigate through the menu items.	Joystick up or down
Go into the sub-menu items.	Zoom handle twist
Change value. Enter the editing title mode.	Joystick left or right or Zoom handle twist
Change value of angle	CTRL + Joystick
Enter the changing angle mode.	IRIS Open
Exit the changing angle mode.	IRIS Close
Escape (EXIT)	ESC

3.4 Auto Scan (Shortcut: **SCAN**)

The Auto scan supports up to 17 programmed angles at user-programmable speeds.

Auto Scan

Number	1
Title	A01
Mode	Normal
Scan Direction	CCW
Swap	Off
Start Angle	-----
End Angle	-----
Speed	04 Step
Dwell	03 Sec

Save Cancel

NUMBER : 01 -08, 10-17, **09**:AUTO PAN mode

TITLE : up to 12 characters.

MODE : NORMAL, VECTOR, RANDOM (AUTO PAN Mode: NORMAL, RANDOM only)

NORMAL : Move from start point to end point in panning only.

VECTOR : Move from start point to end point including tilt and zoom simultaneously and linearly. In some model, the zoom is fixed at wider angle and the zoom magnification information is not displayed.

RANDOM : Move randomly between the start point and the end point.

SCAN DIR : Set the scan direction, CCW (Counter Clock Wise), CW (Clock Wise)

SWAP : Swap the start point for the end point.

START ANGLE : Set the start angle.

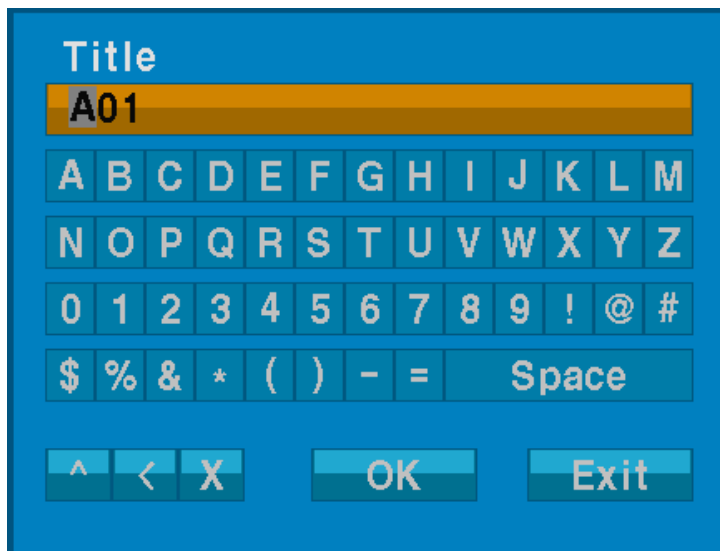
END ANGLE : Set the end angle.

SPEED : 1 - 17 steps, the lower number means the slower speed.

DWELL : Set the dwell time at the both end, 01 – 99 seconds

Follow these steps to program Auto Scan:

1. Press the **SCAN** key to enter the auto scan menu directly. Or press the **MENU** key to display the main menu on the monitor. Scroll to Auto Scan and then twist the **Joystick**.
2. Select the "NUMBER" and set the desired number by pushing the **Joystick** left or right.
3. Select the "TITLE" and twist the **Joystick** to enter the title edit mode.
4. Select the " ^ " to the characters table(an upper case & lower case) or select the " < " to delete at the desired character then the cursor position moves to the left. Or select the "X" to delete the desired character without move. Push the **Joystick** left or right at the "Exit" field to finish title edit menu without save or select the "OK" to finish title edit menu with save.



5. Select "MODE".
6. Set "Scan Direction" to CCW or CW.
7. Select "SWAP" Set to ON, to exchange the start angle and the end angle.
8. Select "Start Angle" and Push the **Joystick** left or right. Hold down the **CTRL** key while selecting the start position using the **Joystick**. Current panning position will be displayed. Release **CTRL** key to complete the selection of the start position. Or press **IRIS Open** then the "CTRL" displays. Move the desired position and the zoom position. Press **IRIS Close** then the "CTRL" disappears. To adjust at the 0.1 degree interval, twist the **Joystick** at the pan field and the tilt field. To adjust at the one zoom interval, twist the **Joystick** at the zoom field. Push the **Joystick** left or right at the "Exit" field to finish "auto scan start angle" menu.
9. Select "End Angle." and Push the **Joystick** left or right. Hold down the **CTRL** key while moving the Joystick to select the end position. The end position angle should be larger than start position. Release the **CTRL** key to complete the selection of the end position. Or press **IRIS Open** then the "CTRL" displays. Move the desired position and the zoom position. Press **IRIS Close** then the "CTRL" disappears. To adjust at the 0.1 degree interval, twist the **Joystick** at the pan field and the tilt field. To adjust at the one zoom interval, twist the **Joystick** at the zoom field. Push the **Joystick** left or right at the "Exit" field to finish "auto scan end angle" menu.
10. Select "SPEED".
11. Set "DWELL TIME".
12. Select Save and Exit and push the **Joystick** to the right or press **IRIS Open**. Press **ESC** or **IRIS Close** to exit the program without saving.

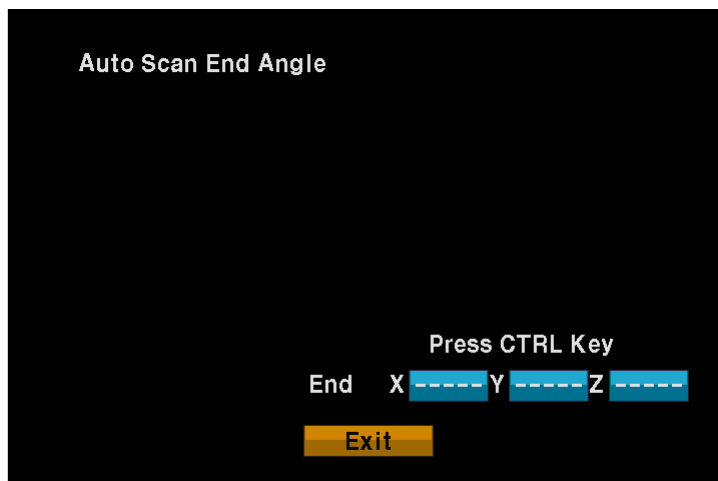
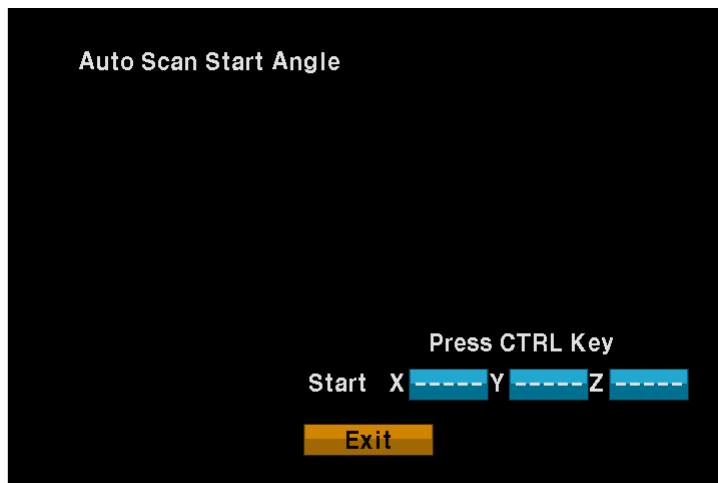
Pressing the **HOME** key delete stored data at the angle field.

To set the position using the preset position:

- a. Before entering the Auto Scan menu, select a preset position as a starting point for Auto Scan.

Example: **2** + **PRST** and do step 1 to 7. In step 8, just press the **Ctrl** key at the start angle position, the current position will be displayed as a start position.

- b. Save and exit from the menu.
- c. In normal mode, call a preset to be the end point of scan. Press **3** + **PRST** then press **Scan** key to enter the Auto Scan menu. Move the cursor position to END ANGLE. Just press **CTRL** key at the end angle position. Save and exit from the menu.



The setting procedure is the same as above.

Note : 09: AUTO-PAN mode (Endless panning)



3.5 Preset (Shortcut: **PRST**)

If you need to view specific places routinely, you should program presets. A preset is a programmed video scene with automatic pan, tilt, zoom, focus, and AE settings. Once programmed, placing the number position and pressing a **PRST** button on your controller calls up that preset automatically. In addition, presets may be assigned to alarm actions or as the “home” position for the dome camera. As many as 240 presets, whose positions are saved in the dome’s firmware, may be programmed.

Preset	
Number	001
Title	001
Dwell Time	03 Sec
Focus	Auto
Preset Position	Set Preset
Event Function	Set Function
Auto Exposure	Set AE
Preset List	View
Save Cancel	

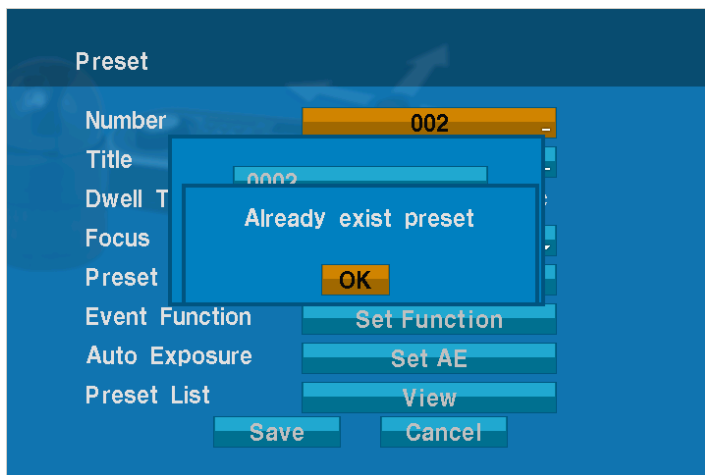
Number : 001 -240,
Title : up to 12 characters.
Dwell Time : Set the dwell time at the both end, 01 – 99 seconds

Focus : Auto, Manual, One Push
Auto : Auto Focus at continuous.
Manual : Camera goes into manual mode
One Push : Held the auto focus at one times only with a pan/tilt/zoom action occurred.

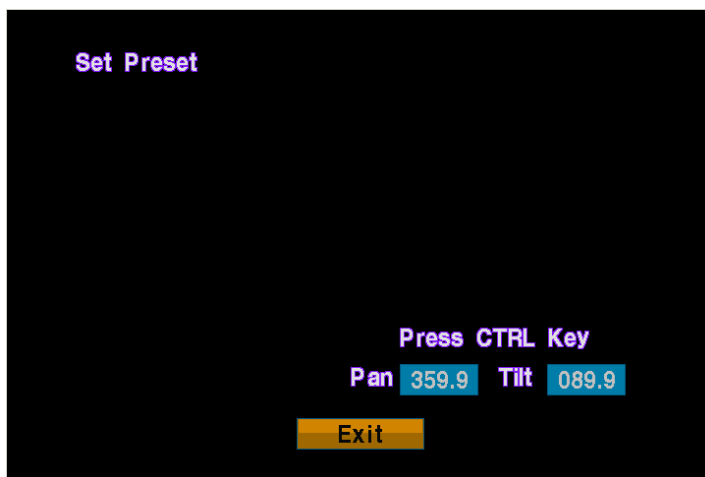
Preset Position : Set the preset position with view direction and lens control..
Event Function : Set the desired function.
Auto Exposure : Set the auto exposure of the desired preset..
Preset List : Show the stored preset list.

Follow steps below to store the Preset positions:

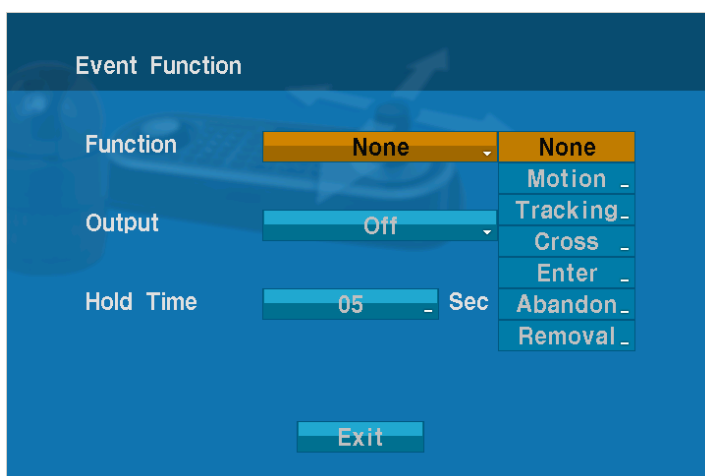
1. Press the **PRST** key to enter the preset menu directly. Or press the **MENU** key to display the main menu on the monitor. Scroll to preset and push the **Joystick** to the right.
2. Select the “Number” and select the preset position to be stored by pushing the **Joystick** up, down, right, or left.
3. Follow the procedure of the auto scan above to edit titles.
4. If selected preset number is not empty, “*Already exist preset*” message will be displayed on the monitor and select the “OK” and push the **Joystick** to the right to overwrite.



5. After selecting a preset position, press and hold **CTRL**, Use the **Joystick** to control the direction of the camera and lens.

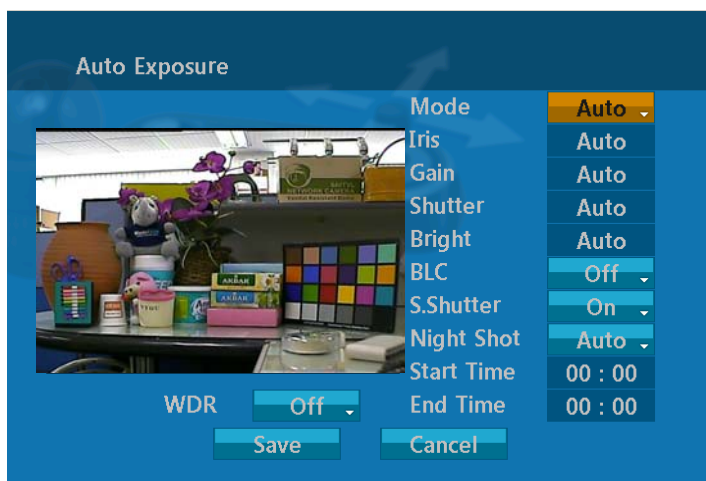


6. After aiming the camera (view direction and lens control), release **CTRL**.
7. Select "Event Function" and pushing the **Joystick** left or right. Then the event function setup displays.



* Please refer to the below (3.5.1 Event Function) for more details.

8. Set the “Auto Exposure”

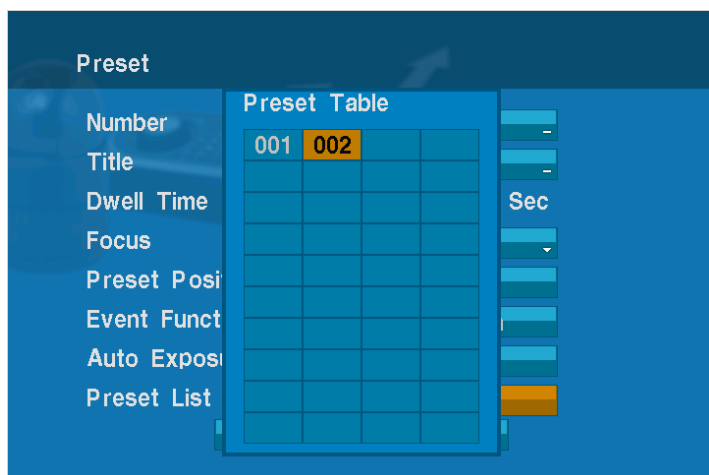


Refer to the AE SETUP in the camera setup.

9. Repeat steps 2 through 8 for each additional preset position.

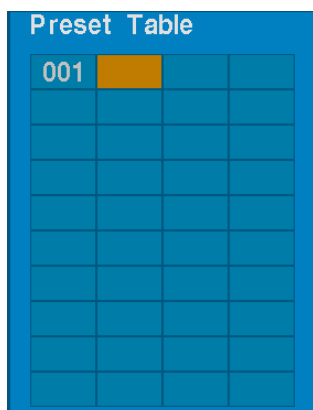
10. Select Save by pushing the Joystick to the right. Press Cancel to exit the Preset menu without saving.

11. Select the preset list, then the stored preset list displays.



Select the desired preset then the desired preset setup displays.

Note : Press the **HOME** key at desired preset in preset table to delete a programmed preset .



3.5.1 Event Function

You can set a preferred function in specified preset position.

All available functions are like below.

- Motion** : You can detect a moving object in specified preset position.
Tracking : You can make a camera follow the moving object automatically (In case of catching more than 1 moving objects at the same time, a bigger object will be tracked).
Cross : You can detect a moving object crossing a specified virtual line in a preset position.
Enter : You can detect a moving object that newly enters in a specified area (enter box).
Abandon : You can detect an object abandoned in a specified area.
Removal : You can detect an object removed in a specified area..

Event Function

Function: None (Motion, Tracking, Cross, Enter, Abandon, Removal)

Output: Off

Hold Time: 05 Sec

Exit

- Function** : Choose a function (None, Motion, Tracking, Cross, Enter, Abandon, Removal).
Output : Set the alarm output. (Off, Out1~Out4)
Hold Time : Set the hold time of alarm signal for chosen function, (Off, 03 – 99 seconds)

3.5.2 Motion

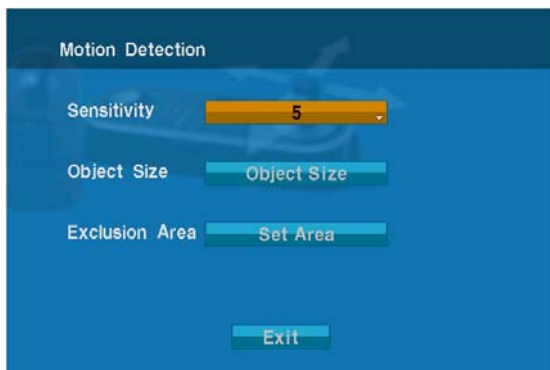
You can detect moving objects in specified preset position.

You can see the results by either “Bounding Box” or “Trace”.

As a result of motion, screen will display the bounding box or trace.

(“Bounding box” means you can see a virtual rectangle on moving object. In prior of this, you make sure that you set “On” in display and Bounding box in OSD Setup.

“Trace” means you can see a trace on moving object. In prior of this, you make sure that you set “On” in display and Bounding box in OSD Setup.)



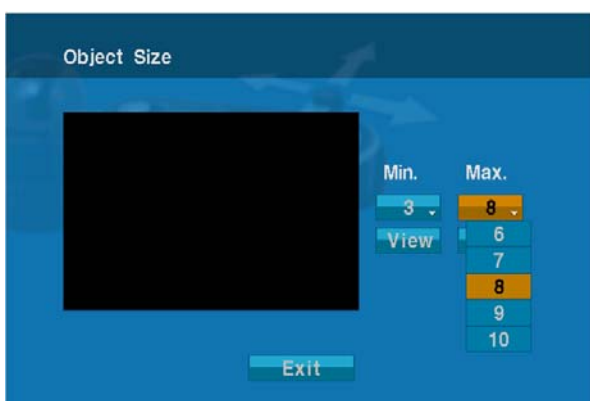
Sensitivity : Set the sensitivity step. 1-8 step, the lower number means the lower sensitivity (dull).

Object Size : Set the min/max size.

Exclusion Area : Set the exclusion area.

Follow steps as below to set the Motion Detection:

1. Select the function in the event function. Scroll to Motion and push the **Joystick** to the right.
2. Select the “Sensitivity” and Set the object size..



3. Select “Exclusion Area”.

(Viewing image will be positioned to the selected preset automatically when user enter this Menu)



Exclusion Area:

You can set inactive area of Motion detection on this Menu.

To avoid false alarm, we recommend you to exclude areas like trees with swaying branches or street with walking people.

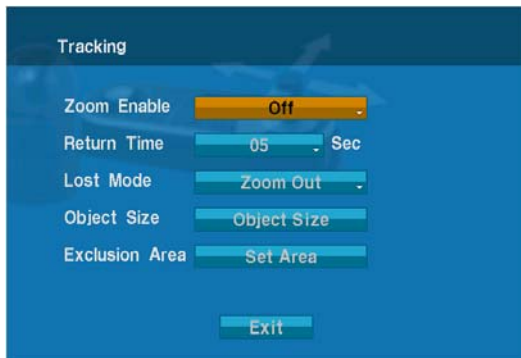


- Set Area** : Locate the cursor on the “Set Area” and then twist Joystick and then move Green grid to the position. Change the color of grid to disable Motion Detection by twisting Joystick. Then disabled Grid will be changed to Yellow color. (Default color of grid is Blue)
- Clear Area** : Locate the cursor on the “Clear Area” and then twist Joystick and then move Green grid to the position. Change the color of grid to enable Motion Detection by twisting Joystick. Then enabled grid will be changed to Blue color.
- All Set** : Select All grids and change to Motion Detection disabled grid.
- All Clear** : Select All grids and change to Motion Detection enabled grid.

Note : *We recommend setting Exclusion Areas for certain zones with unwanted motion. (For example, swaying branches or leaves of tree, flickering monitor screen)*

3.5.3. Tracking

You can make a camera follow the moving object automatically (In case of catching more than 1 moving objects at the same time, a bigger object will be tracked)



- Zoom Enable** : Set to enable or disable linked zoom capability during tracking.
Return Time : Set the dwell time before move to previous position once tracking is inactive. (Off, 3~99 seconds.)
Lost Mode : Choose "Stop" or "Zoom Out" when object has been lost.
 Stop : Stop Tracking in current position when object lost.
 Zoom Out : "Zooming Out" will be activated in 3 seconds after object was lost.
 However this can not work if you switched off "Zoom Enable".
Object Size : Set the min/max size.
Exclusion Area : Set the exclusion area.

Follow steps as below to set the Tracking:

1. Set the Zoom Enable.
2. Set the lost mode.
3. Select the object size and the exclusion area.
 Follow the procedure of the detection above to the object size and the exclusion area.
4. Select the Exit (with saving) and push the **Joystick** to the right. Press **ESC** to exit the program without saving.

Note : If you set to the sensitivity of tracking, select the motion in event function. Then set to the sensitivity of motion. Select to the tracking in event function again.

Note : Auto tracking will be activated with an indicator (+) focused on the center of the object

Note : Malfunctions in Auto Tracking might occur for the following cases:

- The object brightness is almost identical to the background luminance or in environments with extreme low light conditions
- Water drop or damp on the Dome's Bubble
- An environment with extreme changes in illumination
- An environment where there is excessive other non-target movement
- An environment where there is extreme twinkling or lambency on the object
- Movement too close to the camera optical axis
- Movement of the target in the vicinity directly below the camera

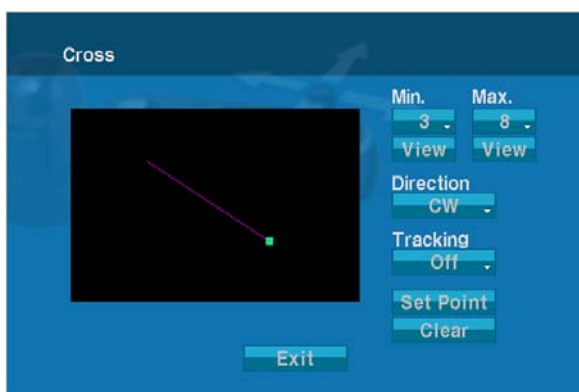
- **Target movement that is very fast or very slow**
- **When the moving objects are either large or small in comparison to the preconfigured object size**
- **When the camera is unsteady due to improper installation**

3.5.4 Cross

You can detect a moving object crossing a specified virtual line (cross line) in a watch area.

You can see current status of moving object by “Bounding Box”.

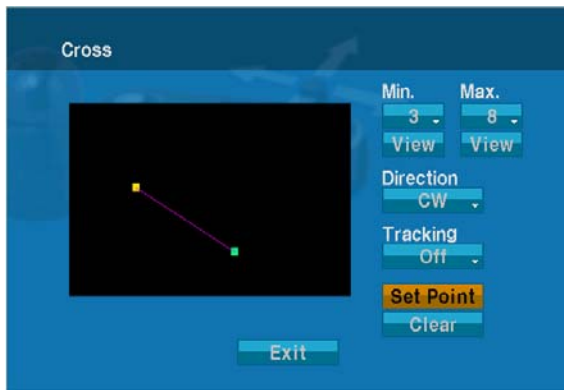
(“Bounding box” means you can see a virtual rectangle on moving object. In prior of this, you make sure that you set “On” in display and Bounding box in OSD Setup)



- Min.** : Set the min size of object while object crossed.
Max. : Set the max size of object while object crossed.
Direction : Set the direction while object cross.
 CW : CW (Clock Wise)
 CCW : CCW (Counter Clock Wise)
 Both : CCW (Counter Clock Wise), CW (Clock Wise),
Tracking : Set the tracking use while object crossed.
Set Point : Set the cross line.
Clear : Remove the cross line.

Follow steps as below to set the Cross:

1. Set the min size of the enter object and set the max size.
2. Select the cross direction.
3. Select the tracking use while object crossed.
4. Select the “Set Point” for cross line.



Use the **Joystick** to set the location of the start point(yellow mark). Move the cursor (green mark) by pushing the **Joystick**, up, down, right or left. Select the location of the end point.

Draw a cross line to end point from start point.

5. Select the Exit (with saving) and push the **Joystick** to the right. Press **ESC** to exit the program without saving.

Note : *To minimize failure rate of “Cross”, you are recommended to draw horizontal Cross line than vertical line. Also cross line should be placed on the position where object is passing fast.*

Note : *Malfunction might occur or the cross will be deactivated if the moving object reaches the edge of the Cross-line.*

3.5.5 Enter

This can detect a moving object that newly enters in a specified area (enter box).

You can see current status of moving object by “Bounding Box”.

(“Bounding box” means you can see a virtual rectangle on moving object. In prior of this, you make sure that you set “On” in display and Bounding box in OSD Setup.



Min. : Set the min size of object while object entered.

Max. : Set the max size of object while object entered.

Base : Set the reference point while object entered.

It occurs a event when reference point enters in a specified enter box.

Top : Reference point is the top of object.

Bottom : Reference point is the bottom of object.

Both : Reference point is the top of object and bottom of object.

Set Point : Set the enter box.

Clear : Remove the enter box.

Follow steps below to set the Enter:

1. Set the min size of the enter object and set the max size.
2. Select the enter base.
3. Select the “Set Point” for enter box.
4. Select the Exit (with saving) and push the **Joystick** to the right. Press **ESC** to exit the program without saving.

3.5.6 Abandon

This can detect an object abandoned in a specified area.

You can see current status of moving object by “Bounding Box”.

Once moving object is fixed as “Abandon”, color of “Bounding box” will be changed to complementary color of ROI line.

(“Bounding box” means you can see a virtual rectangle on moving object. In prior of this, you make sure that you set “On” in display and Bounding box in OSD Setup.



- Min.** : Set the min size of object while object abandoned.
Max. : Set the max size of object while object abandoned.
Event Time : Set the event time.
10s,20s,30s,40s,50s,60s,70s,80s,90s,100s,120s,180s,240s
Set Point : Set the abandon box.
Clear : Remove the abandon box.

Follow steps below to set the Abandon:

1. Set the min size of the enter object and set the max size.
2. Select the event time.
3. Select the “Set Point” then draw a box for two point.
4. Select the Exit (with saving) and push the **Joystick** to the right. Press **ESC** to exit the program without saving.

Note : There might be malfunction of Removal for the following cases:

- The object brightness is almost identical to the background luminance
- When the objects are either large or small in comparison to the preconfigured Object size

- **Environments where there is strong direct/indirect light shining onto the object or Background**
- **The abandoned object is not fixed.**

3.5.7 Removal

This can detect a object removed in a specified area.

You can see current status of moving object by “Bounding Box”.

Once moving object is fixed as “Removal”, color of “Bounding box” will be changed to complementary color of ROI line.

(“Bounding box” means you can see a virtual rectangle on moving object. In prior of this, you make sure that you set “On” in display and Bounding box in OSD Setup.



- Min.** : Set the min size of object while object removed.
Max. : Set the max size of object while object removed.
Event Time : Set the event time.
Set Point : Set the area for removal.
Clear : Remove the area.

Follow steps below to set the Removal:

1. Set the min size of the enter object and set the max size.
2. Select the event time.
3. Select the “Set Point”, then draw a box for two point.
4. Select the Exit (with saving) and push the **Joystick** to the right. Press **ESC** to exit the program without saving.

Note : There might be malfunction of Removal for the following cases.

- **The object brightness is almost identical to the background luminance**
- **When the objects are either large or small in comparison to the preconfigured Object size**
- **Environments where there is strong direct/indirect light shining onto the object or Background**

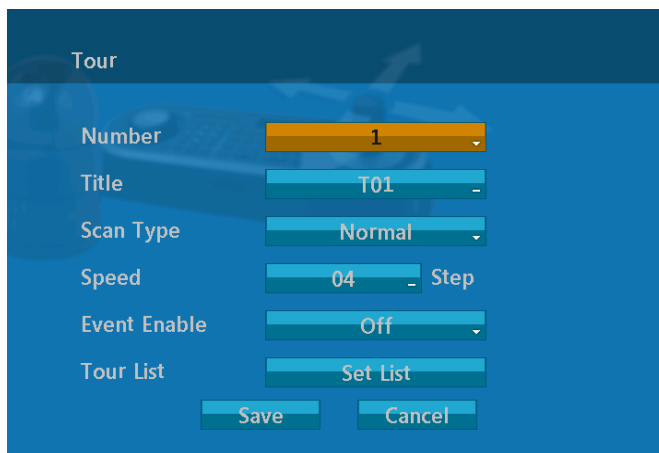
3.6 Shortcut of Preset Program

After selecting the desired scene, press No. (1 to 240), and press **CTRL** and **PRST** subsequently. The current view will be stored to the selected preset number if the preset number is empty. If selected preset number is not empty, “Do you want to overwrite preset?” message will be displayed on the monitor and select the “OK” and push the **Joystick** to the right to overwrite.

Example: **1**, **0**, **1** + **CTRL** + **PRST** will store current view as preset No. **101**. In this case, focus will be programmed as Auto, dwell time will be set to 3 second, and the current AE mode will be programmed.

3.7 Tour (SHORTCUT: **TOUR**)

There are 8 programmable Tours. Each Tour consists of up to 42 Preset positions, Patterns, Scans or other Tours (second-level). Using second-level tours, it can be expanded to over 300 functions in a single tour.



Number : 01 -08

Title : up to 12 characters.

Scan Type : Normal, Vector

Normal : Move from start point to end point in panning only.

Vector : Move from start point to end point including tilt and zoom simultaneously and linearly. In some model, the zoom is fixed at wider angle and the zoom magnification information is not displayed.

Speed : 1 - 13 steps, the lower number means the slower speed.

Event Enable : ON / OFF

ON : Enable all events except abandon and removal preconfigured in preset.

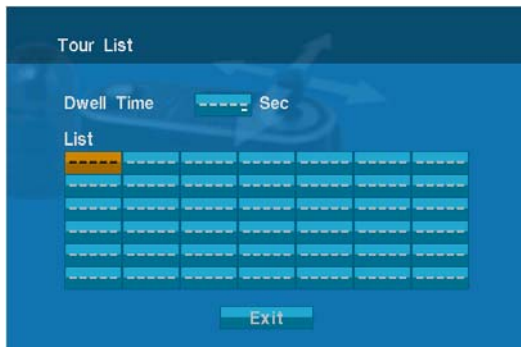
OFF : Disable all events preconfigured in preset.

Tour List : Display the stored function list (Preset, Pattern, Auto Scan, Tour List) or you will set the desire function list.

Follow the steps below to program the Tours:

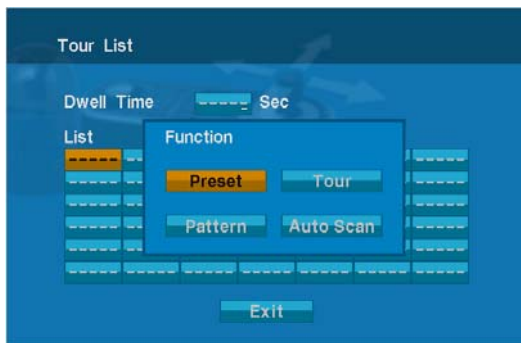
1. Press **MENU** to display the main menu on the monitor. Scroll to Tour and push the **Joystick** to the right to enter the Tour menu. Or just press the **TOUR** key on the keyboard.
2. Select the "NUMBER" and set the desired number by pushing the **Joystick** left or right.

3. Select the “Scan Type” and if you have to choose vector type then you will apply the speed.
4. Select the “Tour List”, then display the tour list..



Dwell : Set the dwell time at the both end, 01 – 99 seconds

5. Blank position mark (---) will be displayed and selected, then twist the **Joystick**.



To add functions, select the preset, tour, pattern, and auto scan respectively.



6. You can also overwrite the programmed number and to remove a stored number from the Tour, press the **HOME** key on the stored number, a blank position mark (---) will be displayed.

7. Repeat Step 2 through 5 for each desired position. Each title will be displayed on top of the line.
8. To edit the title, follow the procedure of the auto scan above to edit titles
9. Select Save and Exit and push the **Joystick** to the right. Press **ESC** to exit the program without saving.

You can expand the Tour sequence by calling other programmed tours.

Note : *The speed applies in the vector mode only.*

Note : *In the Tour mode, in conjunction with preset and Auto Scan, you can make the camera travel from a preset position to another preset position at a specific speed.*

Example: Preset 001>002>003>004>005>006, Auto Scan 01 starts at preset 002, ends at preset 003, Auto Scan 02 starts at preset 005, ends at preset 006; Tour 001, 002, A01, 004, A02.

1 → 2 2~3 → 4 → 5~6, repeat
 where → : Quick move, ~ : Programmed speed

To change the dwell time of the preset in the tour:

Use the **Joystick** to move the cursor to a stored preset position. By pressing **PRST** key, the camera will move to the stored Preset view and the cursor moves to the dwell time field. After changing the dwell time, press **PRST** key and the cursor moves to the preset number.

To assign the functions other than preset in the tour when the function key is not existed:

Use the **Joystick** to move the cursor to a stored preset position. Pressing **CTRL** key or **IRIS OPEN** key will change the preset number to other function (auto scan, pattern, field, preset) with the first programmed number. To change the number, twist the joystick or press **Tele** or **Wide** key.

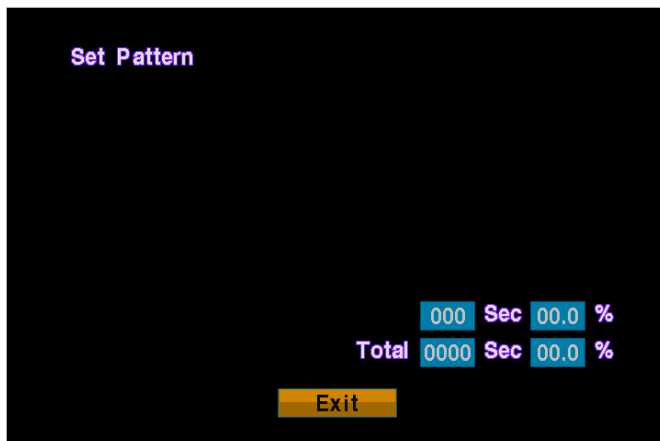
3.8 Pattern (Shortcut: **PTRN**)

The Pattern feature records user control of the selected dome camera. Up to four 8 patterns can be stored and played back by pressing No.+ **PTRN** keys subsequently.

Pattern					
No.	Title	Pattern	Sec	%	X
1	P01	Set	000	00.0	X
2	P02	Set	000	00.0	X
3	P03	Set	000	00.0	X
4	P04	Set	000	00.0	X
5	P05	Set	000	00.0	X
6	P06	Set	000	00.0	X
7	P07	Set	000	00.0	X
8	P08	Set	000	00.0	X
Total	0000	Sec	00.0	%	
			Save	Cancel	

Follow steps below to program the Pattern:

1. Press **MENU** to display the main menu on the monitor. Scroll to Pattern and push the **Joystick** to the right to enter the pattern menu. Or just press the **PTRN** key on the keyboard.
2. To edit the pattern title, follow the procedure of the auto scan above to edit titles.
3. Select the desired pattern to be programmed by pushing the **Joystick** up or down. If the "Sec" is not 000, a pattern has already been recorded. Patterns can be overwritten.
4. Select the desired pattern (Set) then twist the **Joystick**.
5. Display the "set pattern".

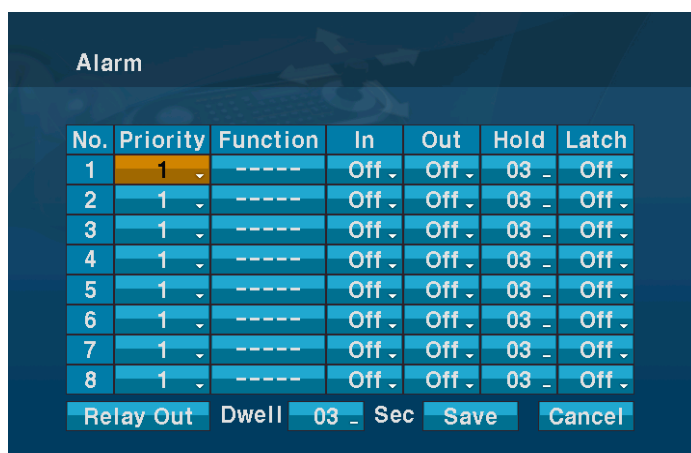


6. Press and hold down the **CTRL** key while controlling the camera direction and zoom with the **Joystick**. The dome will be automatically recorded until you release the **CTRL** key. Or press **IRIS Open** then the "CTRL" displays. Move the position and the zoom position. Press **IRIS Close** then the "CTRL" disappears.
7. Select Save and Exit and push the **Joystick** to the right. Press **ESC** to exit the program without saving.

Note : Press the **HOME** key at any programmed position to delete the pattern.

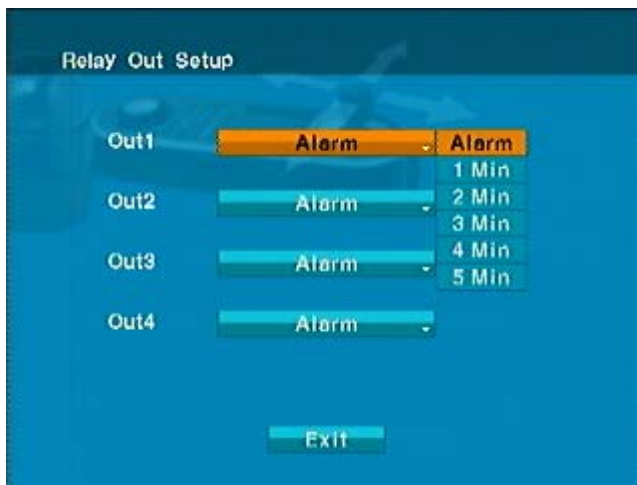
Note : If total recording time reaches 500 seconds, it will automatically stop for a moment.

3.9 Alarm



No : Alarm input number
Priority : The lower number has higher priority. (1-8)
Function : Stored function number to be called by alarm.
In : NO/NC - normally open /Closed OFF - ignore
Out : OUT1~OUT4 - Relay out 1,2,3,4, OFF - No output.
Hold : Alarm will be held for programmed time (03 to 99 seconds)
Latch : ON - Shows all alarms including past alarm.
 OFF - Shows activated alarms only.
Dwell : means the dwell time during multiple alarms, 03 to 99 seconds.

The RELAY OUT setup is helpful when the outdoor housing is used with the dome.
 Ex.) When you connect the relay output of the dome to the heater connector of the outdoor housing, the relay output can operate during the setting time only.



Alarm: the relay output is operated during an alarm operation or by the short key of our keyboard.

1-5 MIN (minute): the relay output is operated during this setting time only by the function run of the dome menu or the short key of our keyboard.

Note : *This 1-5 MIN setting is not operated by an alarm.*

Note : *If you disable Alarm by dip switch, Alarm menu will be displayed following screen.*



There are 8 levels of priority. The function can be selected by Preset, Auto scan, Pattern or Tour and “0” is the highest priority. Lower priority alarms won’t be serviced until the higher priority alarm is completed. Equal priority alarms will be serviced repeatedly with the dwell time.

3.10 Schedule

No.	Day	Start time	Function	Enable	X
1	Mon	21 : 00	Auto Pan	Off	X
2	Wed	17 : 00	Origin	Off	X
3	All	10 : 50	Origin	Off	X

+ < > Clear Save Cancel

You can set the schedule of Preset, Pattern, Tour, Auto Scan, Auto Pan, Origin, DIS On, DIS Off on this menu.

Selected Function will be effective per selected start time and day (of the week) range.

Follow below steps to set schedule.

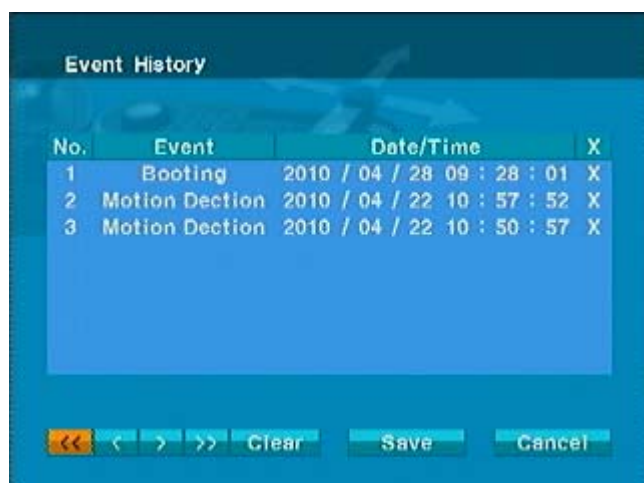
1. Locate cursor on the “+” and then, twist Joystick (keyboard) to add a new schedule.
2. To choose day (of the week) range, locate cursor on the relevant “Day” and then twist Joystick (keyboard) to set one of 10 ranges.
(All, Mon, Tue, Wed, Thu, Fri, Sat, Sun, S-S, M-F)
3. To choose start time, locate cursor on the relevant “Start time” and then twist Joystick (keyboard) to set time.
4. Choose one function to work on this schedule.

Note : *In prior of this setting, the functions need to be set on menu.*

Enable	Choose to enable or disable selected function.
X	Delete the relevant schedule.
<	Return to the previous page in the schedule list.
>	Return to the next page in the schedule list.

Note : *Origin check in Schedule will not be activated when the camera is operating under Auto Scan, Pattern, Tour and Event function per other schedule.*

3.11 Event History



The screenshot shows a menu titled "Event History" with a table of events. The table has four columns: "No.", "Event", "Date/Time", and "X". There are three rows of data. Below the table are navigation buttons: "<<", "<", ">", ">>", "Clear", "Save", and "Cancel".

No.	Event	Date/Time	X
1	Booting	2010 / 04 / 28 09 : 28 : 01	X
2	Motion Dection	2010 / 04 / 22 10 : 57 : 52	X
3	Motion Dection	2010 / 04 / 22 10 : 50 : 57	X

You can see list of Event (Alarm1, Alarm2, Alarm3, Alarm4, Alarm5, Alarm6, Alarm7, Alarm8, Cross, Tracking, Abandon, Removal, Motion, Booting) on this menu.

This device can memorize 256 events at maximum.

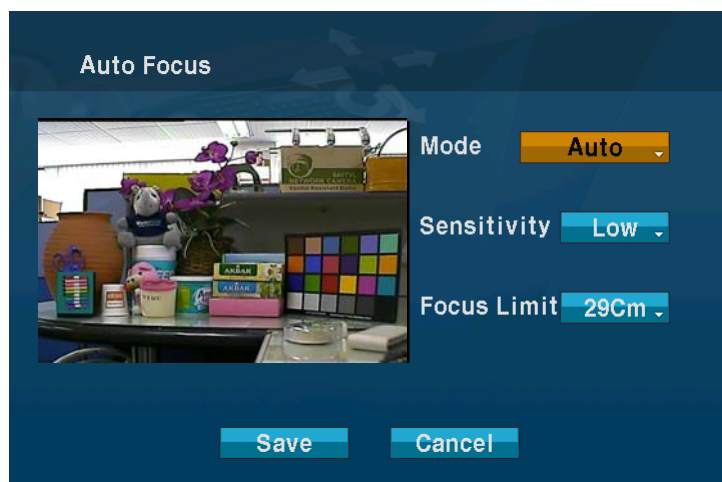
(Over 256 events, the oldest event will be erased one by one)

<<	Return to the first page in the history list.
<	Return to the previous page in the history list.
>	Proceed to the next page in the history list.
>>	Proceed to the last page in the history list.
Clear	Delete all the information in the history list.

3.12 Camera Menu Type 1

Note : The features will vary depending on the camera module installed in your dome camera.

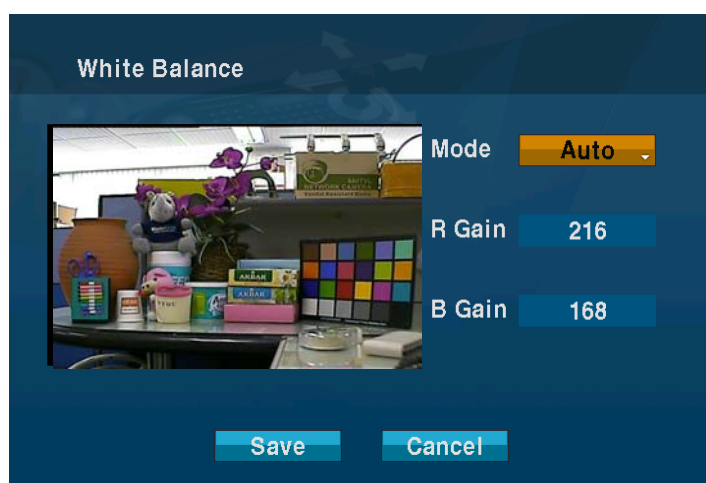
3.12.1 Auto Focus



- MODE** AUTO / MANUAL / ONE PUSH / CONSTANT MANUAL
Use manual mode in normal use.
- AF SENSITIVITY** NORMAL / LOW
NORMAL: Use this option when shooting fast motion.
LOW : Offers better focus stability. In low luminance conditions, Auto Focus stops operation even when brightness changes, enabling stable images of moving objects.
- FOCUS LIMIT** 9.5Cm / 32Cm / 1.5M / 2M / 3M / 5M / 10M / 20M
This distance is approximate value and the focus operate from the setting value.

CAUTION : Avoid continuous, 24-hour use of the auto focus. This will shorten the lifespan of the lens.

3.12.2 WB (White Balance) Control

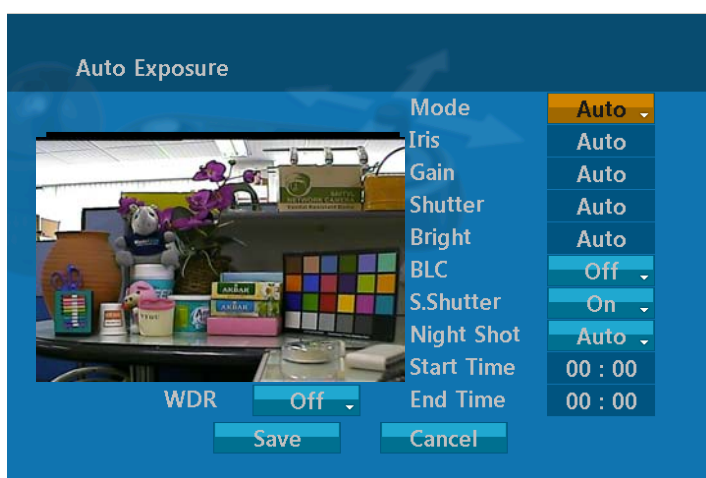


- MODE** AUTO / INDOOR / OUTDOOR / ONE PUSH / ATW / MANUAL

MANUAL	Control of R and B gain
AUTO	Computes the white balance value output using color information from the entire screen automatically. (3000 to 7500 °K)
INDOOR	3200 K base mode.
OUTDOOR	5800 K base mode
ONE PUSH	One push white balance mode is a fixed WB mode that may be automatically readjusted at the stop after moving.
ATW	Auto tracing white balance. (2000 to 10000° K)
RGAIN	0 ~ 255
BGAIN	0 ~ 255

RGAIN / BGAIN modes are controllable only in MANUAL Mode

3.12.3 Auto Exposure



MODE	AUTO / MANUAL / IRIS PRIO / SHUTTER PRIO / BRIGHT
AUTO	Auto Iris and Gain, Fixed Shutter speed (NTSC: 1/60 sec, PAL: 1/50 sec)
MANUAL	Variable Shutter, Iris and Gain.
IRIS PRIO	Variable Iris, Auto Gain and Shutter speed.
SHUTTER PRIO	Variable Shutter speed, Auto Iris and Gain.
BRIGHT	Variable Iris and Gain
IRIS	F1.6 / F2 / F2.4 / F2.8 / F3.4 / F4 / F4.8 / F5.6 / F6.8 / F8 / F9.6 / F11 / F14 / F16 / F19 / F22 / F28 / CLOSE
GAIN	-3 DB / 0 / 2 / 4 / 6 / 28
SHUTTER	1/1, 1/2, 1/3, 1/6. ... 1/3500, 1/6000, 1/10000
BRIGHT	0, 1, 2, 3, 4 29, 30, 31
BACK LIGHT	Objects in front of bright backgrounds will be clearer with BLC ON.
SLOW SHUTTER	ON / OFF
NIGHT SHOT	AUTO, ON, OFF, GLOBAL, TIME
Start Time	
End Time	
WDR	ON / OFF

Note : Values in () are for PAL Camera.

Note : The Back Light operates in AUTO mode only.

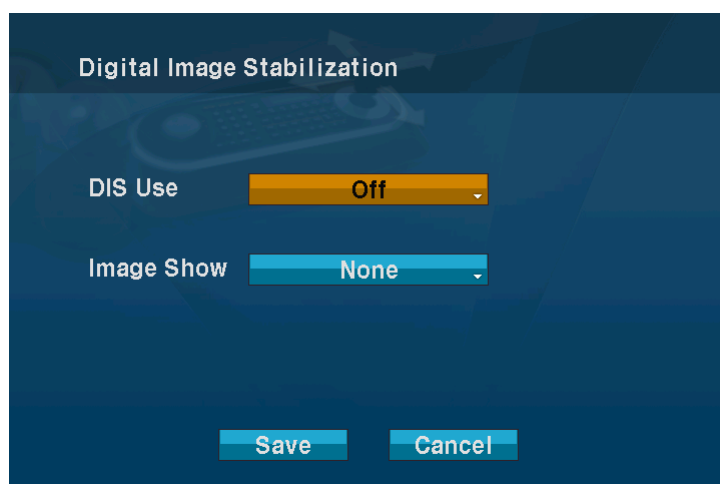
For example, if you change the back light to ON, the camera will change AE mode to “AUTO”.

The NIGHT SHOT option removes the IR cutoff filter of the camera and makes the camera sensitive to near infrared.

AUTO	Camera goes in to B&W mode at low light.
GLOBAL	Controlled by the keyboard. The operator can enable NIGHT SHOT for all dome cameras at the same time. If the NIGHT SHOT mode is set to GLOBAL, "999" + ENTER will turn Off the NIGHT SHOT mode and "888" + ENTER will turn On the NIGHT SHOT mode.
ON	B/W mode.
OFF	Color mode.
START TIME	Set time to change from "Color mode" to "B/W mode"
END TIME	Set time to change from "B/W" to "Color mode"

Note : *Selecting the Night Shot to Auto mode will change AE mode to "AUTO".*

3.12.4 DIS (Digital Image Stabilization)



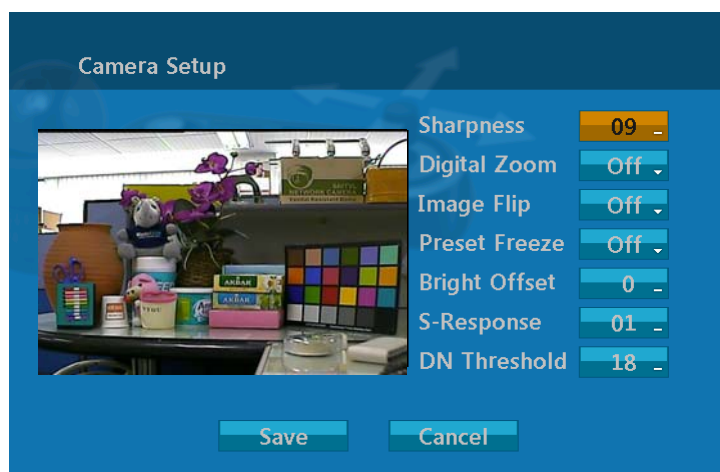
DIS USE	ON / OFF Choose to enable or disable DIS
IMAGE SHOW	NONE / PIP / PDP
NONE	Only viewing DIS Active image.
PIP	View original image (small) and DIS active image (big) as picture in picture.
PBP	View original image (left) and DIS active image (right) as picture in picture.

Note : *There might be malfunction of DIS for the following cases.*

- *The camera is operating under extremely low light condition.*
- *The object brightness is almost identical to the background luminance*
- *The object is moving very fast*
- *The camera is unsteady due to improper installation*

Note : *DIS will be deactivated if the camera is operating under Event function or PAN/TILT/ZOOM/FOCUS commands.*

3.12.5 Camera Setup



SHARPNESS The higher the value, the more edges in the picture will be enhanced (0~15)

Digital ZOOM OFF: Zoom range is limited to the optical.
2X: Zoom is extendable up to 2x of digital range.
4X: Zoom is extendable up to 4x of digital range.
MAX: Zoom is extendable Max digital zoom range.

IMAGE FLIP This function turns the video output from the camera upside down and reverses it horizontally.

This option is helpful to install in the opposite side.

PRESET FREEZE ON / OFF
ON The image is frozen during calling preset.

BRIGHT OFFSET -7,...,0(default),...7
Adjust the brightness level (AUTO, SHUTTER PRIO, IRIS PRIO mode only)

SLOW RESPONSE

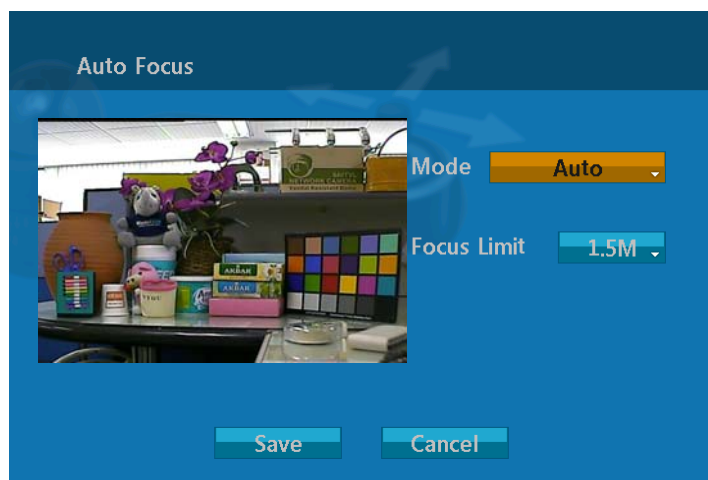
The slow response function allows you to lengthen the automatic exposure response speed from 1 up to 32 times. For example, with the normal setting (about 1 second), if the headlights of a car are caught by the camera, the camera automatically adjusts the exposure so that it can shoot a high-intensity subject (in this case, the headlights). As a result, images around the headlights, that is, the rest of the subject, except the headlights, becomes relatively dark, and poorly distinguished. However, using the slow response function can still easily distinguish the portions of the image surrounding the headlights.

DN THRESHOLD 5, ... 18 (default),..., 28
Adjusts the level of light at which the camera automatically switches out of night mode (B/W) operation.

3.13 Camera Menu Type 2

Note : The features will vary depending on the camera module installed in your dome camera.

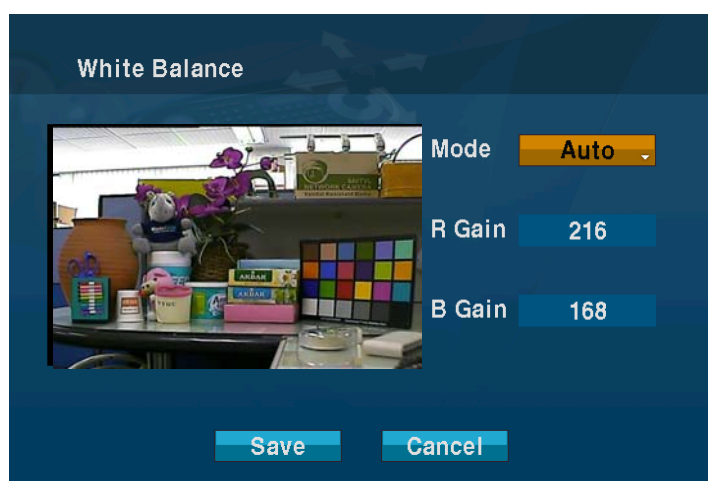
3.13.1 Auto Focus



MODE	AUTO / MANUAL / ONE PUSH / CONSTANT MANUAL Use manual mode in normal use.
FOCUS LIMIT	1.0M / 1.5M / 2.5M / 6.0M This distance is approximate value and the focus operate from the setting value.

CAUTION : Avoid continuous, 24-hour use of the auto focus. This will shorten the lifespan of the lens.

3.13.2 WB (White Balance) Control



MODE	AWB / WAWB / INDOOR / OUTDOOR / MANUAL
AWB	Computes the white balance value output using color information from the entire screen automatically. (2500 to 9500 °K)
WAWB	Wide range auto white balance mode. (1800 to 10500 °K)
INDOOR	Indoor white balance mode.
OUTDOOR	Outdoor white balance mode.

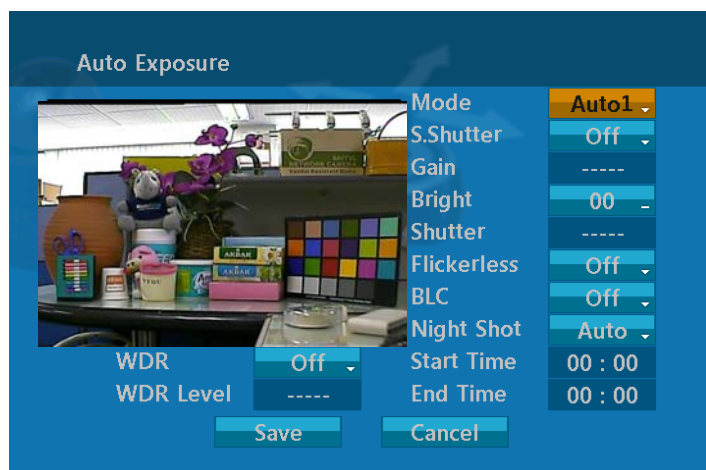
MANUAL Manual mode. You can change R and B Gain manually

RGAIN 0 ~ 255

BGAIN 0 ~ 255

RGAIN / BGAIN modes are controllable only in MANUAL Mode

3.13.3 Auto Exposure



MODE AE1 / AE2 / SHUTTER PRIO / MANUAL

AE1 Auto exposure mode1. (Use to normal surroundings: indoor)

AE2 Auto exposure mode2. (Use to high brightness surroundings: outdoor)

SHUTTER PRIO Variable Shutter speed, Auto Gain.

MANUAL Variable Shutter speed, Gain.

SLOW SHUTTER ON / OFF

GAIN MIN / LOW / MID / HIGH

BRIGHT 0, 1, 2, 3, 4 68, 69, 70

SHUTTER 1/60(50), 1/100(120), ..., 1/2000, 1/10000, 1/100000

FLICKERLESS ON / OFF

BACK LIGHT ON / OFF (**NOTE: When ON, WDR will be disabled.**)

WDR ON / OFF (**NOTE: When ON, BACKLIGHT will be disabled.**)

WDR LEVEL 10~50

Note : Values in () are for PAL Camera.

Note : The Back Light operates in AUTO mode only.

For example, if you change the back light to ON, the camera will change AE mode to "AUTO".

The NIGHT SHOT option removes the IR cutoff filter of the camera and makes the camera sensitive to near infrared.

AUTO Camera goes in to B&W mode at low light.

GLOBAL Controlled by the keyboard.

The operator can enable NIGHT SHOT for all dome cameras at the same time.

If the NIGHT SHOT mode is set to GLOBAL, "999" + **ENTER** will turn Off the NIGHT SHOT mode and "888" + **ENTER** will turn On the NIGHT SHOT mode.

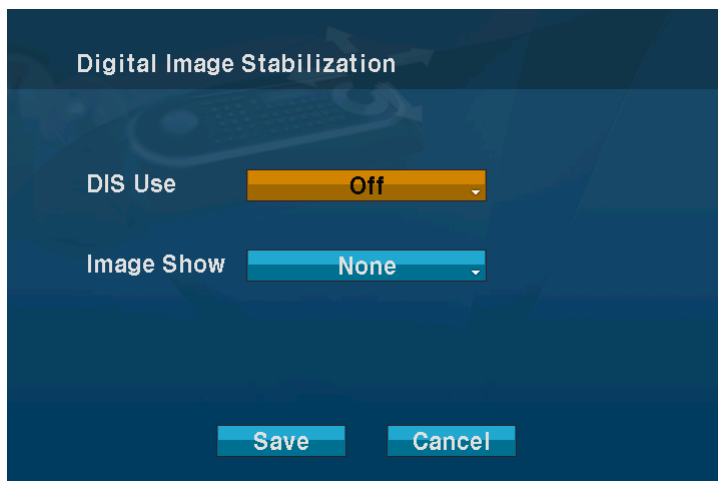
ON B/W mode.

OFF Color mode.

START TIME	Set time to change from “Color mode” to “B/W mode”
END TIME	Set time to change from “B/W” to “Color mode”

Note : Selecting the Night Shot to Auto mode will change AE mode to “AUTO”.

3.13.4 DIS (Digital Image Stabilization)



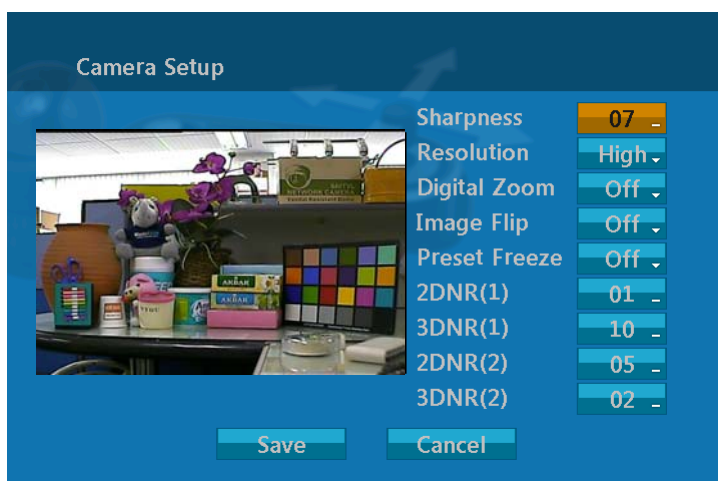
DIS USE	ON / OFF
	Choose to enable or disable DIS
IMAGE SHOW	NONE / PIP / PDP
NONE	Only viewing DIS Active image.
PIP	View original image (small) and DIS active image (big) as picture in picture.
PBP	View original image (left) and DIS active image (right) as picture in picture.

Note : There might be malfunction of DIS for the following cases.

- *The camera is operating under extremely low light condition.*
- *The object brightness is almost identical to the background luminance*
- *The object is moving very fast*
- *The camera is unsteady due to improper installation*

Note : DIS will be deactivated if the camera is operating under Event function or PAN/TILT/ZOOM/FOCUS commands.

3.13.5 Camera Setup



SHARPNESS

The higher the value, the more edges in the picture will be enhanced (0~15)

RESOLUTION

Select high resolution mode. (LOW / MID / HIGH)

DIGITAL ZOOM

OFF: Zoom range is limited to the optical.

2X: Zoom is extendable up to 2X of digital range.

4X: Zoom is extendable up to 4X of digital range.

8X: Zoom is extendable up to 8X of digital range.

MAX: Zoom is extendable Max digital zoom range.

IMAGE FLIP

This function turns the video output from the camera upside down and reverses it horizontally.

This option is helpful to install in the opposite side.

PRESET FREEZE

ON: the image is frozen during calling preset.

2DNR(1), 2DNR(2)

Select 2D noise reduction level (OFF / 001~007)

3DNR(1), 3DNR(2)

Select 3D noise reduction level (OFF / 001~031)

Note : DNR(1) applied when motor stopped. DNR(2) applied when motor moving.

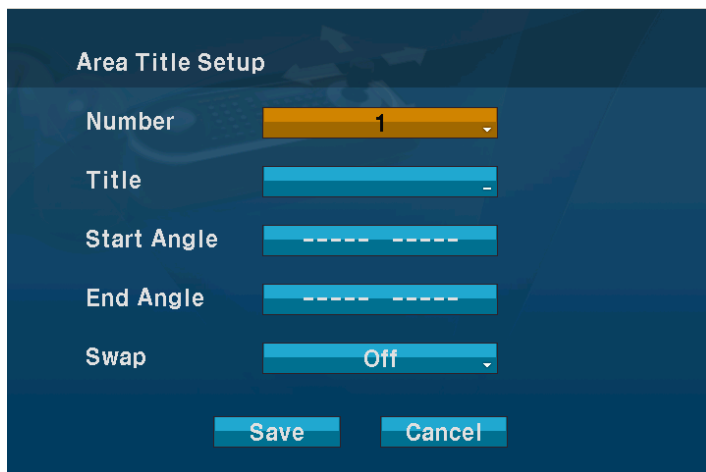
3.14 OSD Setup

On Screen Display

Display	On	Preset Title	Constant
Trace	Off	Line Color	Red
Bounding Box	Off	View A-Title	Off
Blending	Off	AF/AE	On
Time/Date	On	View Direction	Off
Cam Title	DomelD		
Area Title	Set Area Title		
OSD Position	Set Position		

Save Cancel

Display	ON / OFF All display or title will disappear when DOME OSD DISPLAY sets OFF
Trace	ON / OFF Choose to enable or disable Trace. (Only Detection Mode)
Bounding Box	ON / OFF Choose to enable or disable Bounding Box.
Blending	ON / OFF Choose to enable or disable Alpha Blending.
Time/Date	ON / OFF Choose to enable or disable Time and Date display.
Preset Title	CONSTANT / OFF / 3, 30, 60, 120, 180 second Set the preset title display time.
Line Color	White / Black / Red / Green / Blue / Yellow / Violet / Orange Set the ROI color.
View A-Title	ON / OFF Choose to enable or disable Area-Title display.
AF/AE	ON / OFF Choose to enable or disable AE/AF display
View Direction	ON / OFF "ON" sets current direction as N(north) and the coordinate angle to 000. "OFF" hides the directional title. Every 90 degrees of clockwise rotation will change the title to E(East), S(South), W(West). If using the ON/OFF option frequently, it is recommended that you set "North" as a Preset. Recall the "North" Preset before enabling the directional title. up to 6 characters.
Cam Title	
Area Title	Enter a specific name on programmed angle between START and END. For the screen below, when the camera points at an angle between 124.3° (PAN), 30.7° (TILT) to 359.5° (PAN), 45.4° (TILT), Title will be displayed on the screen.



NUMBER :01 - 16
TITLE :up to 12 characters.
SWAP : Swap the start point for the end point.

1. Select the "NUMBER" and set the desired number by pushing the **Joystick** left or right.
2. To edit the title, follow the procedure of the auto scan above to edit titles.
3. Select "START ANGLE". Hold down the **CTRL** key while selecting the start position using the **Joystick**. Current panning position will be displayed. Release **CTRL** key to complete the selection of the start position. Or press **IRIS Open** then the "CTRL" displays. Move the desired position. Press **IRIS Close** then the "CTRL" disappears. To adjust at the 0.1 degree interval, twist the **Joystick** at the pan field and the tilt field.
4. Select "END ANGLE." Hold down the **CTRL** key while moving the Joystick to select the end position. Release the **CTRL** key to complete the selection of the end position. Or press **IRIS Open** then the "CTRL" displays. Move the desired position. Press **IRIS Close** then the "CTRL" disappears. To adjust at the 0.1 degree interval, twist the **Joystick** at the pan field and the tilt field.
5. Select "SWAP". Set to ON, to exchange the start angle and the end angle.
6. Select Save and Exit and push the **Joystick** to the right or press **IRIS Open**. Press **ESC** or **IRIS Close** to exit the program without saving.

OSD POSITION Select the OSD option with **Joystick** up and down, press **CTRL** and adjust the position by **Joystick**



3.15 Privacy Zone

Hide up to 8 unwanted scenes in a camera.

No.	Title	Zone	Method	Set	X
1				Set	
2				Set	
3				Set	
4				Set	
5				Set	
6				Set	
7				Set	
8				Set	

All Clear Save Cancel

1. Place the cursor at the set field.
Twist the **Joystick** handle then privacy area menu displays.
2. Holding down the **CTRL** key displays the privacy area menu while selecting the position using the **Joystick**. Current position will be displayed. Release **CTRL** key to complete the selection of the position. Or press **IRIS Open** then the privacy area menu displays. Move the desired position. Press **IRIS Close** then the "CTRL" disappears and twist the **Joystick** handle then returns to the previous menu.

Privacy Area Menu

Press CTRL KEY

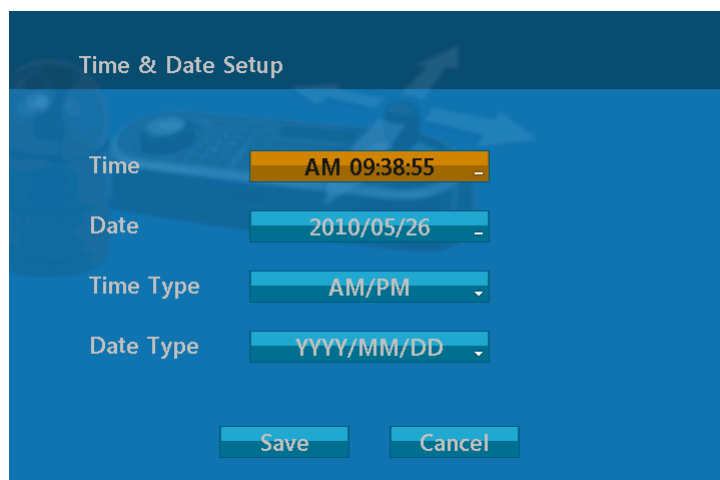
X 000.0 Y 000.0

Exit

3. Place the cursor at the title field. Twist the **Joystick** to enter the title edit mode. Follow the procedure of the auto scan above to edit titles.
 4. To turn the stored zone On or Off, twist the **Joystick** handle or press **Tele** or **Wide** Key.
 5. Set the method, "BLOCK" or "V.OFF (video off)"
 6. Select the Save option by pushing the **Joystick** up or down. Save and exit the program by twist the **Joystick**. Press **ESC** or select the Cancel to exit the program without saving.
- Place the cursor at the X field, twist the **Joystick** to delete programmed privacy zone.

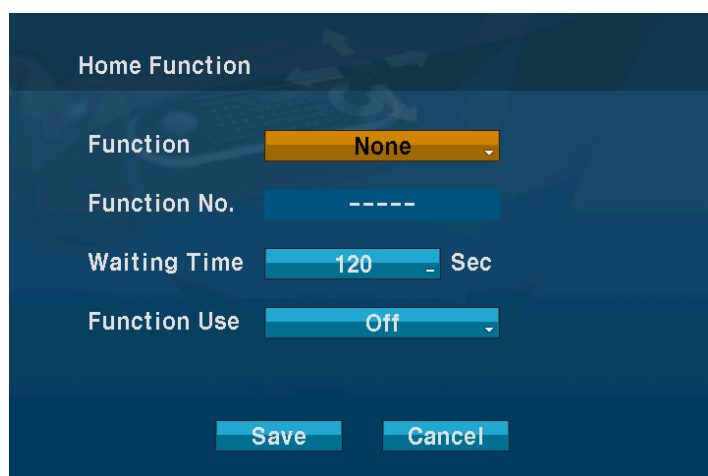
3.16 Time & Date Setup

Set the Time, Date, Time Type and Date Type on this menu



Time : Use Joystick (Keyboard) to change the time.
Date : Use Joystick (Keyboard) to change the Date.
Time Type : Supports two formats. (12hours, 24hours)
Date Type : Supports three formats. (YYYY/MM/DD, MM/DD/YYYY, DD/MM/YYYY)

3.17 Home Function Setup



HOME FUNCTION : None/ Tour/ Pattern / Auto Scan / Preset
FUNCTION NUMBER : - - -
WAITING TIME : 10~240 Seconds
FUNCTION ENABLE : ON/ OFF

The Home function can be set so that the camera automatically goes to Preset, Tour, Pattern, Auto Scan after the keyboard controller has been idle for certain time. For example, if the controller is idle for 120 seconds, the camera goes to preset 1.

Follow these steps to program the Home position:

1. Select Home Function by pushing the **Joystick** up or down to scroll through the None, Tour, Pattern, Auto Scan or Preset functions.

2. Select Function Number and push the **Joystick** to the up or to the down. The recorded function number will list.
3. Select WAITING Time and push the **Joystick** to the up or to the down to select from 10 to 240 seconds.
4. Select Function Enable and turn to ON or OFF by pushing the **Joystick** to the up or to the down.

3.18 View Angle



FLIP: OFF, 90°, 100°, 110°, 120°, AUTO

OFF: The dome camera moves until 90° vertically.

90°, 100°, 110°, 120°: allows the image to flip digitally when the camera moves over the setting angle vertically.

AUTO: When the camera reaches the floor directly above the moving object, it will stop. At that time, release the **Joystick** handle instantly and pull it down again to run the auto-flip function. When you use the panning range, we recommend using the flip mode to AUTO.

TILT OVER ANGLE:

This option is used to set the limit of the horizontal view angle so that the trim ring or ceiling does not obstruct the horizontal image when zooming out (wide angle).

ON: In some installations it is desirable for the dome camera to be able to see above the horizon. When this option is chosen, the dome will tilt up over the horizon (About -10 degrees). When the lens is zoomed out, you can see the ceiling line. But when the lens is zoomed in, the viewing angle is narrower, and the ceiling line disappears.

Without Bubble: The tilt range of the camera is limited to see the horizon so the picture shows part of the ceiling line.

With Bubble: The tilt range of the camera is limited to see below the horizon (10 degrees).

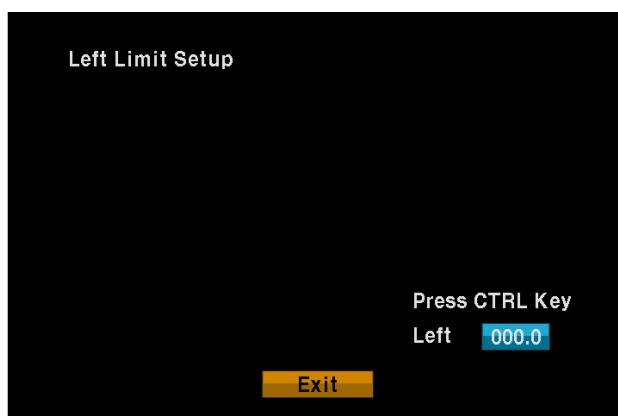
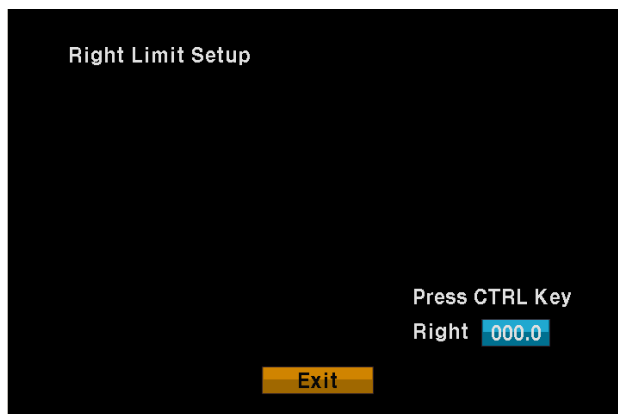
Over Angle is not sufficient enough to avoid ceiling obstructions, please adjust Origin Offset of tilt angle as described below.

PANNING RANGE

When the dome camera is installed near a wall, panning range can be limited by user.



Enable : ON / OFF
Swap : ON / OFF
Auto Pan : ON / OFF
Right Limit : Set 0.0 ~ 359.9



1. Place the dome camera under 90 degree vertically.
2. Set the right limit by pushing the **Joystick** to the right.
3. Set the left limit by pushing the **Joystick** to the left.
4. Set ENABLE to ON to use

To exchange the right and the left limit, set SWAP to ON.
 To apply limits on the auto pan (endless panning), set AUTO PAN to ON.

Note : When you use the panning range, we recommend using the flip mode to AUTO. When the flip mode is 90°, 100°, 110° or 120° and you moves over 90° vertically, the panning range operates in opposite side.

3.19 Origin Offset

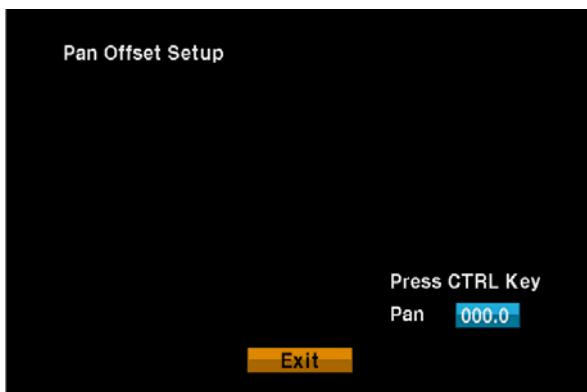


This feature is useful to align a new dome camera exactly the same as the previously installed dome camera.

Dome camera's origin set and all data initialize option do not overwrite offset values. Only the default set option in this menu will set the offset value to zero. This can be used to avoid ceiling obstructions.

Enable: ON (Use Offset value of Origin) / OFF (Do not use Offset value of Origin)

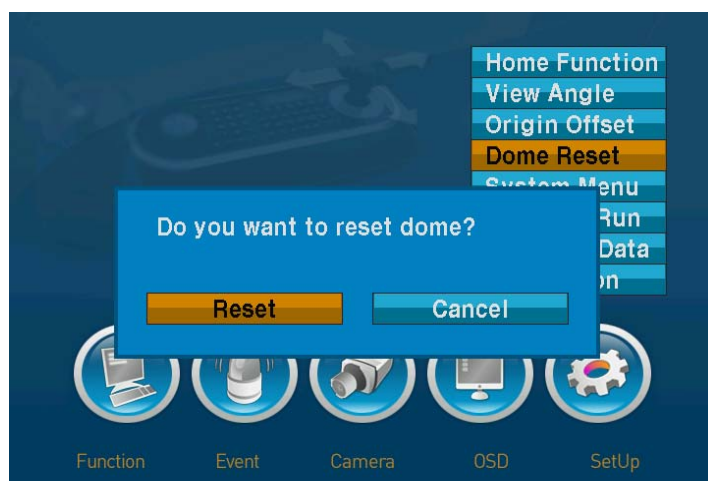
Pan Offset: Set on the viewing image of Pan Offset in Origin menu.



Tilt Offset: Set on the viewing image of Tilt Offset in Origin menu.

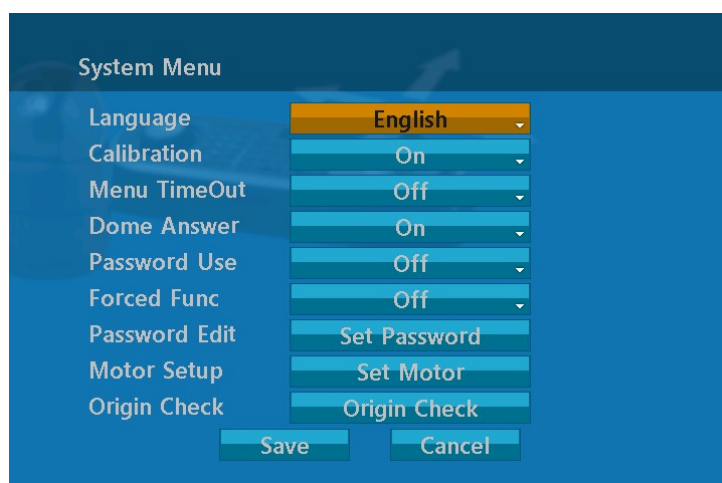


3.20 Dome Reset



This feature is used to re-calibrate the orientation of a selected dome camera. Origin offset value is not affected by this function. (Offset is still valid after origin set)

3.21 System Menu



LANGUAGE : English / French / German / Italian / Polish / Portuguese / Spanish / Russian / Korean / Japanese / Chinese

CALIBRATION : ON (Auto origin check) / OFF

MENU TIME OUT : ON(5mintues) / OFF(always menu display)

DOMES ANSWER ; ON / OFF(no acknowledge command from the dome)

This option is helpful to escape the collision of the command using some DVR.

PASSWORD USE ON (requires the password to enter menu) / OFF

FORCED FUNC : ON (User can force the initialization of a new function like preset, pattern, tour, scan without the need to exit the ongoing operation (pattern, tour, scan) first) / OFF

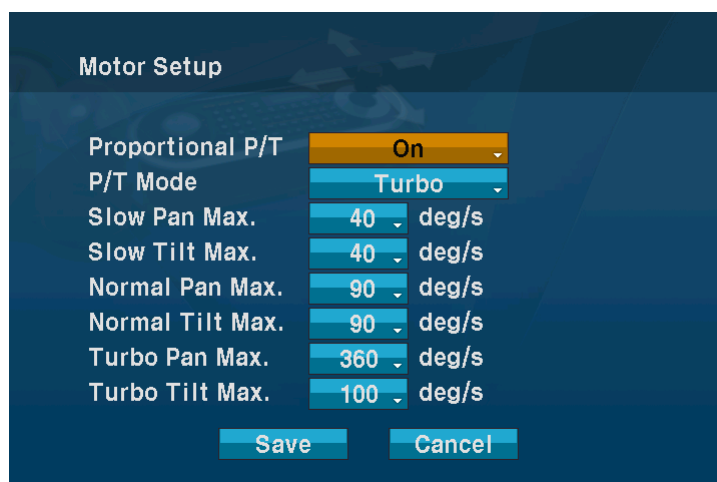
PASSWORD EDIT

You can change the password with 6 digit character in this menu. The default password is 555555. When the PASSWORD USE is ON, the new window will be displayed for editing new password. Move cursor on the character you want to use and push **CTRL** or **IRIS Open** button to select it.

MOTOR SETUP

Motor Setup menu provides the pan and tilt speed of a camera. User can set the desired speed with twist the **Joystick** up or down. During operation, pressing **153** + **ON** will change the speed to the SLOW mode and pressing **153** + **OFF** will change the speed to the Normal mode.

Holding and pressing **CTRL** and moving the joystick will operate with the TURBO speed mode.



PROPOTIONAL P/T	: ON / OFF
P/T MODE	: SLOW / NORMAL / TURBO
SLOW PAN MAXIMUM	: 19° - 90°/second
SLOW TILT MAXIMUM	: 19° - 90°/ second
NORMAL PAN MAXIMUM	: 40° - 360°/second
NORMAL TILT MAXIMUM	: 40° - 200°/second
TURBO PAN MAXIMUM	: 200° - 380°/second
TURBO TILT MAXIMUM	: 90° - 300°/second

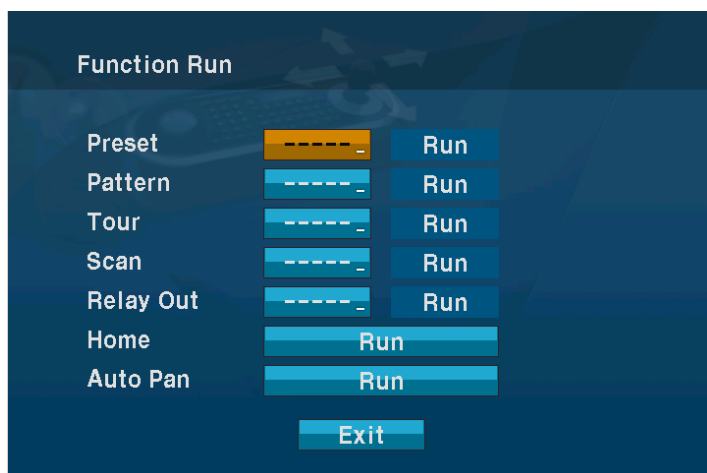
ORIGIN CHECK

When you find the wrong position of the dome during operation, execute this origin check and the dome camera will arrange the right position after the origin check operation.

Pressing **151** + **ON** will execute will origin check.

3.22 Function Run

This Function Run menu allows you to execute the function when you use a keyboard or a DVR without the function keys (Preset, Pattern, Tour and scan).



1. Select the desired Function by pushing **Joystick** up or down.
2. Select the number by twist the **Joystick** in PRESET, PATTERN, TOUR, and SCAN.
3. Press **CTRL** or **IRIS Open** to execute.

Note : To execute the function, you should save the function (PRESET, PATTERN, TOUR, and SCAN) first.

- HOME

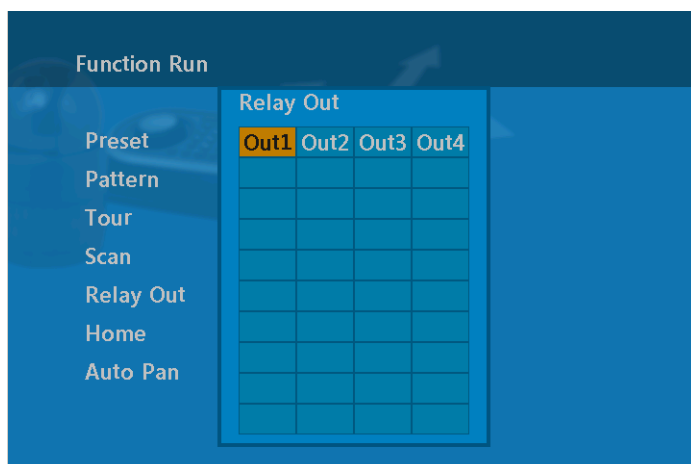
Select the HOME menu and press **CTRL** key. Then dome camera goes to the default position to which the dome camera returns after an assigned period of inactivity passes. The default position may be a Preset, Tour, Pattern or no action.

- AUTO PAN

You can execute the endless auto pan which is to turn one direction continuously by select the Auto Pan.

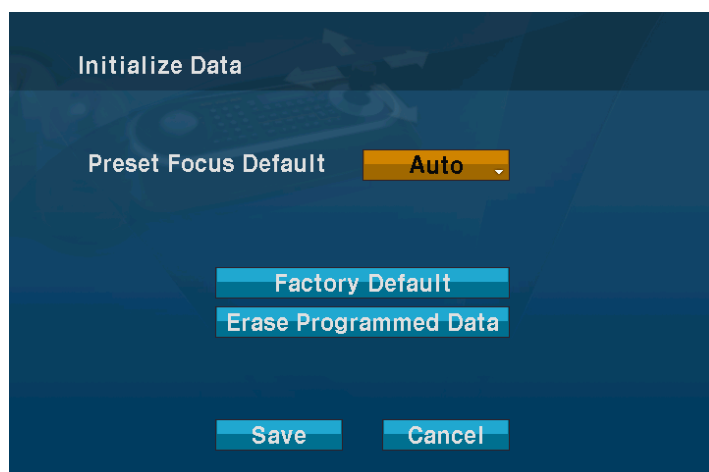
- RELAY OUT

This function can operate only when the relay output setup has the time in the alarm menu.



You can select OUT1, 2, 3, 4 and press **CTRL** or **IRIS Open** then that relay operates during the setting time only.

3.23 Initialize Data



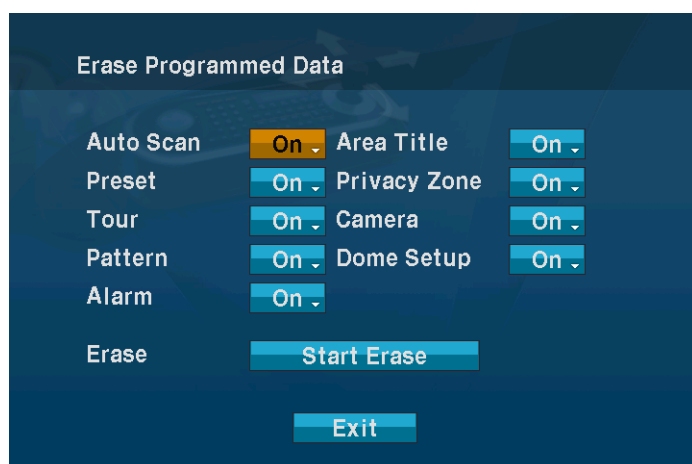
FACTORY DEFAULT

Select the Factory Default to initialize the Data.

ERASE PROGRAMMED DATA

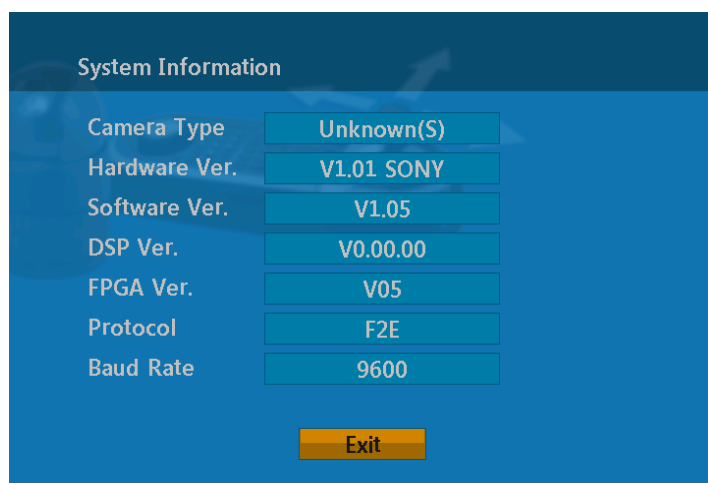
Erase all stored data from the Flash-ROM of the selected dome camera. You will be asked to enter ON or OFF. If you desire to erase all data then select the Erase Run, otherwise press the **ESC** key to exit without erasing. The erased data includes all stored data (auto scan, presets, and tours....) except origin offset.

The offset value is still valid after all data is erased. The offset value can be zero with default set of Offset origin menu.



AUTO SCAN	: ON (Auto scan erase) / OFF
AREA TITLE	: ON (Area title erase) / OFF
PRESET	: ON (Preset erase) / OFF
PRIVACY ZONE	: ON (Privacy zone erase) / OFF
TOUR	: ON (Tour erase) / OFF
CAMERA	: ON (Camera title erase) / OFF
PATTERN	: ON (Pattern erase) / OFF
DOMES SETUP	: ON (Dome setup erase) / OFF
ALARM	: ON (Alarm data erase) / OFF
ERASE	: ON (Erase start) / OFF

3.24 System Information



The screenshot shows a 'System Information' screen with a dark blue header. Below the header, on a lighter blue background, is a table of system details. Each row consists of a label on the left and a value in a light blue box on the right. The labels are 'Camera Type', 'Hardware Ver.', 'Software Ver.', 'DSP Ver.', 'FPGA Ver.', 'Protocol', and 'Baud Rate'. The values are 'Unknown(S)', 'V1.01 SONY', 'V1.05', 'V0.00.00', 'V05', 'F2E', and '9600' respectively. At the bottom center, there is an orange 'Exit' button.

System Information	
Camera Type	Unknown(S)
Hardware Ver.	V1.01 SONY
Software Ver.	V1.05
DSP Ver.	V0.00.00
FPGA Ver.	V05
Protocol	F2E
Baud Rate	9600

Exit

The system information provides essential information about the dome camera if service is required. When you view this screen, you can determine the camera type, ROM version. The information on this screen cannot be modified

Appendix A — Specifications

22x/36x Optical Zoom Fastrax Dome System

MODEL	22X	36X
Camera Menu Type	2	1
MODULE		
CCD Type	1/4" Type EXview HAD CCD	1/4" Type EXview HAD CCD
Optical / Digital Zoom	22X / 16X	36X / 12X
Resolution (NTSC/PAL)	580TVL	540TVL
Focal length	3.9mm~85.8mm	3.4mm~122.4mm
Angle of view	3.9mm-49.5°(H) 85.8mm-2.4°(H)	3.4mm-57.8°(H) 122.4mm-1.7°(H)
F-Number	F1.6-F3.6	F1.6-F4.5
Min. Illumination		
-Normal	1.0 Lux	1.4 Lux
-Low Shutter	0.02 Lux	0.1 Lux
-ICR on & Low Shutter	0.002 Lux	0.01 Lux
ICR on (Day & Night)	YES	YES
WDR	YES	YES
DOME		
Tilt angle	-10° ~ 190° (Digital Flip)	
Image Flip	YES	
DIS (Digital Image Stabilization)	YES	
Auto Calibration	0.1° ~ 6°	
Panning angle	360 continuous rotation	
Alarm (Optional)	8 inputs (NC/NO), 4 relay outputs	
Auto Scan	1 auto pan & 16 auto scan capability	
Preset	240 presets with individual camera AE setup & Event	
Pattern	8 patterns (recording up to 500 sec)	
Tour	8 tours (consist of 42 functions/1tour)	
Max Speed	380° /sec	
Area Title	it can be divided 16 areas with 12 characters of title	
Privacy Zone	8 privacy zone masking (2 methods selectable : Block / video off)	
Video Analytics	Motion Detection, Cross, Enter , Abandon, Removal, Auto Tracking, Cross Tracking	
Menu	GUI (Graphic User Interface)	
Clock	Time & Date and Function Scheduling	

* Specifications are subject to change without notice *

General	
Certification	CE EMC, FCC CLASS A, CSA
Electrical	
Input Voltage	18 to 30VAC; 24VAC nominal, 24VDC
Power Requirement	24VAC/VDC 1A
Power Consumption	Maximum 20W
Alarm Output	4 Normal relays 24VDC/1A Max. (selectable NC/NO)
Alarm Input	8 Normal dry contact (selectable NC/NO)
Control	RS-485/422 baud rate: 2400~38.4k bps (default: 9600bps) Multi Coaxitron (Pelco, Fastrax)
ID (Camera Address)	999 (3999 by software setting)
Mechanical	
Dimension	See Figure below
Weight	Approx 1.2 kg
Panning Angle	360° continuous rotation
Speed	0.1° to 380°/sec. (proportional to zoom)
	380°/sec. maximum (with CTRL key pressed)
	Preset Speed: 380°/sec.
Flip	180° Digital Flip or 90° Auto Flip depended on the model.
Autoscan	16 auto scan and one endless panning
Preset	240 positions with camera status (12-character title)
Tour	8 tours
Pattern	8 patterns, up to 500 second
Privacy Zone	8 Privacy Zones with Block or Video OFF option
On-Screen Display	Displays camera ID and area name on screen
Environment	
Operating temperature	0°C to 50°C (32°F to 122°F)
Operating humidity	0 to 90%RH (non-condensing)
Storage temperature	-20°C to 60°C (-4°F to 140°F)

* Specifications are subject to change without notice. *

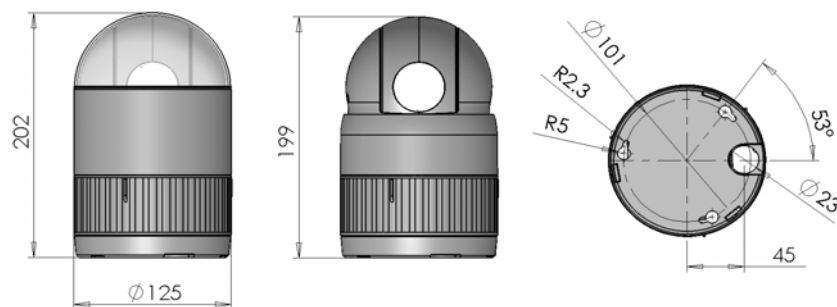


Figure 11 – Dimension

Appendix B — Troubleshooting

If problems occur, verify the installation of the camera with the instructions in this manual and with other operating equipment. Isolate the problem to the specific piece of equipment in the system and refer to the equipment manual for further information.

Problem	Possible Solution
No video.	Verify that power is connected to all pieces of equipment in the system. Verify that the power switches are in the ON position. Check the video connections
Poor video quality.	Check that the BNC connectors are inserted properly. Check the voltage level of the dome camera. Check that 8-pin cable is connected to the Keyboard. 8-pin cable for Keyboard is proprietary. Cable for video is shielded.
Dome cameras lose their positions.	Reset the cameras using the Dome configuration menus. Check that the dome cameras are inserted properly in the base. Check the voltage level of the dome camera.
Camera number does not match the multiplexer number.	Check the camera ID and insert the BNC cable into the proper input of the multiplexer.
Picture is torn when switching	Check Line Lock setting and adjust phase of L/L

Appendix C — Glossary

Alarm Actions

The assigned responses for the dome camera when inputs change from normal to abnormal states. The dome may run a Preset, Pattern, or have no assigned action for each of the eight dome inputs. The dome may also send alarm states to the host controller for processing. See also Input Alarm and Normal Input State.

Areas

Programmed start and end points of the dome's field of view around its pan axis. Each area is a part of a circular viewing area that extends around the dome. The areas can be different sizes. Up to 16 areas can be programmed for the dome.

Automatic Gain Control (AGC)

Allows for the amplification of the video signal in scenes with minimal ambient light. Many low-light scenes result in picture noise. As gain is increased, the picture noise is also amplified. When AGC is enabled, the value of the gain setting is based on feedback from the camera. When AGC is disabled, the camera uses the value set for the manual gain setting. The trade-off between picture level and noise may be adjusted when AGC is disabled.

On-screen Menu

The text overlay menu system used for setting dome features. The utility is accessed using a keystroke combination. The utility provides settings for camera functions, zoom, alarms, text display, and password protection.

Flip

Allows the dome to automatically turn 180 degrees when the camera tilts to its lower limit and stays in that position for a brief delay. When the dome flips (rotates), the camera starts moving upward as long as the tilt control is kept in the down position. Once the control is released, the tilt control returns to its normal operational mode. The flip feature is useful when you need to track someone who walks directly beneath the dome and continues on the other side.

Home Position

The default position to which the dome camera returns after an assigned period of inactivity passes. The default position may be a Preset, Tour, Pattern, or No Action.

Input Alarm

A connection point on the dome camera that enables the system to monitor Input Devices. There are four inputs available for the dome camera.

Input Devices

External devices that provide information about the condition of system components that connect to the inputs on the dome camera. Typical input devices include door contacts, motion detectors and smoke detectors.

IR Mode

A feature of the camera that permits manual or automatic switching between color and IR (black-and-white) operation. When IR mode is active, clearer images may be obtained under low-light conditions.

Line Lock

Allows you to phase lock the video with the AC power line. When line lock is enabled, it prevents vertical video rolling when switching multiple cameras to a single monitor. If text appears slightly tinted on color monitors, disabling the line lock may prevent this problem.

Name Information

Relates to the display the dome name, the area where the dome is pointing, the name of the preset or pattern that is running, and alarm names. The display of each type of name setting can be enabled or disabled. When the display of camera or area title(name) is enabled, the information appears on the screen continuously. Preset, tour and pattern titles(names) appear only while they are active.

Normal Input State

Describes the expected state of a device connected to one of eight dome camera's inputs. The normal state may be open or closed. When a device is not in its normal input state, an alarm is issued.

North Position

User-definable setting that may correspond to magnetic north or some well-known landmark. Used to approximate the camera dome's pointing direction when Direction Indicators are enabled.

Slow Shutter

Setting used to improve the quality of video obtained in extreme low-light situations. When the Low Shutter setting is enabled, low-light information is collected over multiple fields based on the Shutter Limit setting. As a result, video may appear blurred or choppy in extreme low-light situations. This setting does not effect camera operation in normal lighting situations.

Pattern

A series of pan, tilt, zoom and focus movements from a single programmable dome. Up to 8 patterns may be programmed for the dome camera.

Preset

Programmed video scene, based on a specific pan, tilt, zoom, and focus settings. Up to 240 presets may be programmed for the dome camera.

Privacy Zones

Masked areas of the dome camera's viewing area. These masks prevent operators of the surveillance system from viewing these designated zones. The Privacy Zones move in relation to the dome camera's pan/tilt position. In addition, the apparent size of the Privacy Zone adjusts automatically as the lens zooms in or out. Up to eight Privacy Zones may be established for a dome camera.

Shutter Limit

Setting used to define the maximum exposure time for the Open Shutter setting. The values for the setting range from 1/2 to 1/60. The default setting is 1/4.

Vector Scan

Move from start point to end point including tilt and zoom simultaneously and linearly.

White balance

Adjustments in the color hue (red and blue) gains for a camera so that true white appears white in the image. It is normally compensated for by the automatic gain control. In some lighting conditions, you may need to manually adjust the red and blue settings for optimal viewing. When Automatic White Balance is enabled, the camera measures the image and automatically adjusts the red and blue settings to balance white. When Automatic White Balance is disabled, the camera uses the values set for the red and blue settings to balance white.

Appendix D — Short Cut Key

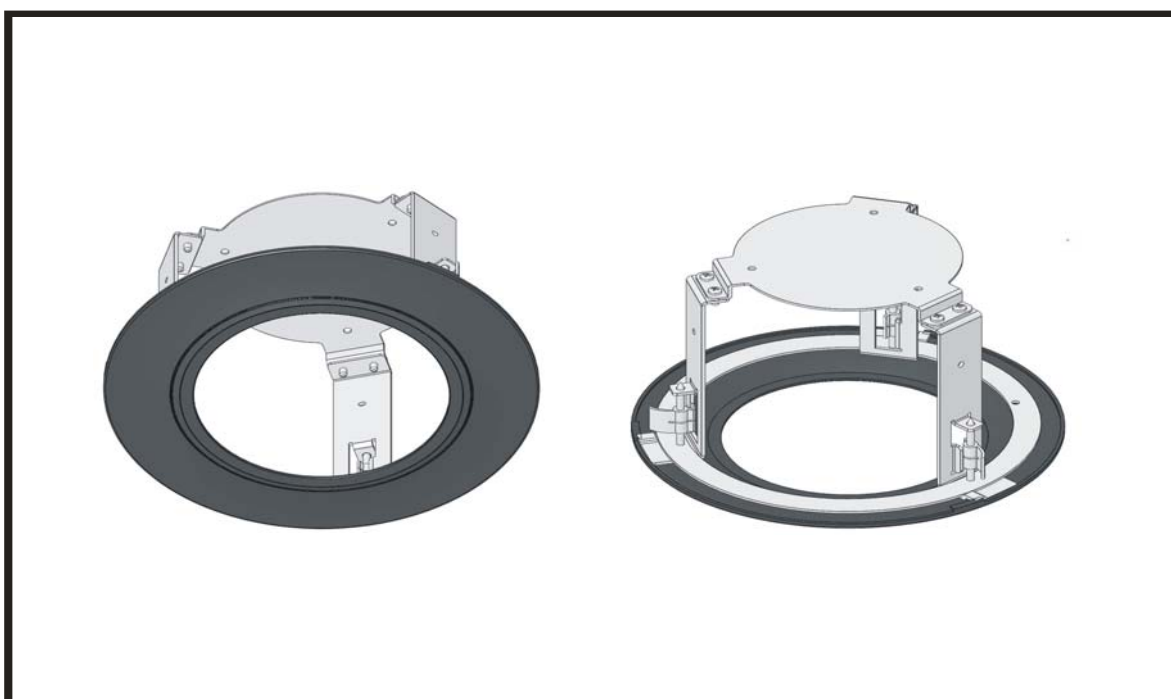
Short Cut Key	Function		
PRST	Pop up preset setup menu.		
TOUR	Pop up Tour setup menu.		
PTRN	Pop up Pattern setup menu.		
SCAN	Pop up Auto Scan setup menu.		
NO.+ PGM + PRST	Store the current view at the selected number.		
Short Cut Key	Function	Short Cut Key	Function
1 + ON	Turn On Relay 1.	1 + OFF	Turn Off Relay.
2 + ON	Turn On Relay 2.	2 + OFF	Turn Off Relay.
3 + ON	Turn On Relay 3.	3 + OFF	Turn Off Relay.
4 + ON	Turn On Relay 4.	4 + OFF	Turn Off Relay.
7 + ON	Change FOCUS to AUTO	7 + OFF	Change FOCUS to manual
8 + ON	Change AE to AUTO	8 + OFF	Change AE to manual
9 + ON	Change Night Shot to AUTO		
10 + ON	Night Shot on (go to the manual mode)	10 + OFF	Night Shot off (go to the manual mode)
11 + ON	BLC on (AE auto mode)	11 + OFF	BLC off (AE auto mode)
12 + ON	Digital Zoom on (According to digital zoom setting)	12 + OFF	Digital Zoom off
13 + ON	Dome OSD on	13 + OFF	Dome OSD off
14 + ON	Dome Area Title Display on	14 + OFF	Dome Area Title Display off
15 + ON	View Direction on	15 + OFF	View Direction off
100 + ON	Shutter speed auto		
101 + ON	Shutter speed 1/4(PAL 1/3) sec		
102 + ON	Shutter speed 1/2 sec		
103 + ON	Shutter speed 1 sec		
104 + ON	WDR ON	104 + OFF	WDR off
105 + ON	Image Stabilizer ON	105 + OFF	Image Stabilizer off
150 + ON	Image Flip ON	150 + OFF	Image Flip off
151 + ON	Origin Check		
152 + ON	Place the camera in the 0° area horizontally.		

* Some function may not operate according to the model.

Short Cut Key	Function	Short Cut Key	Function
153 + ON	Go to the slow speed mode	153 + OFF	Go to the normal speed mode
154 + ON	Display System Information		
155 + ON	Flip the camera in the 180° area horizontally.		
250 + PRESET	Set the dome ID up to 3999		
888 + ENTER	Night Shot on (in the global mode only)		
999 + ENTER	Night Shot off (in the global mode only)		

* Some function may not operate according to the model.

FLUSH MOUNT HARDWARE



Please read this manual thoroughly before use, and keep it handy for future reference.

1. INTRODUCTION

This mounting device enables the dome camera to be mounted to the suspended ceiling. The mounting clamps, which are affixed to the ceiling tile, attach directly to the dome's mounting base for a quick and easy installation.

2. SPECIFICATIONS

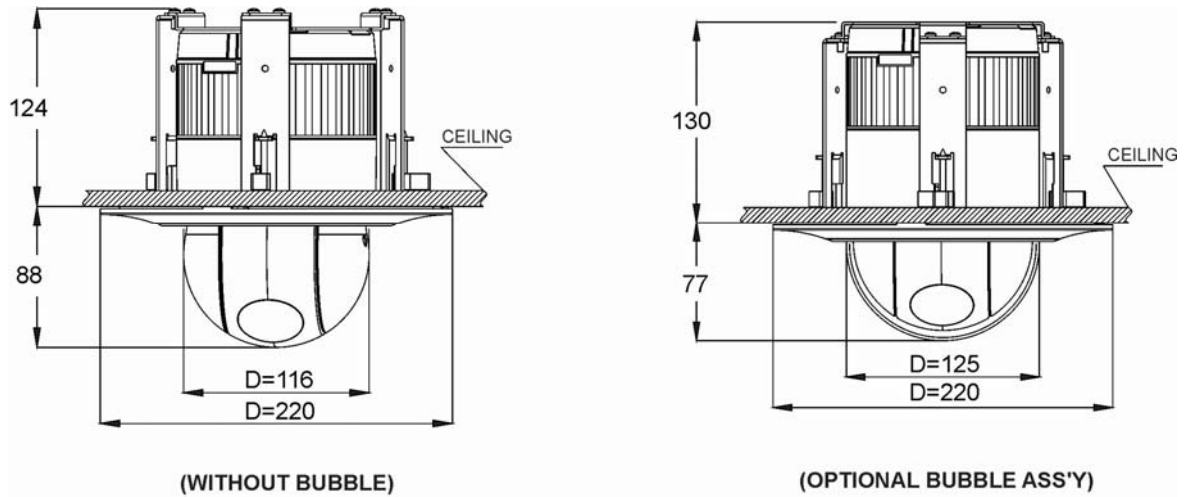


Figure 1 : Dimension

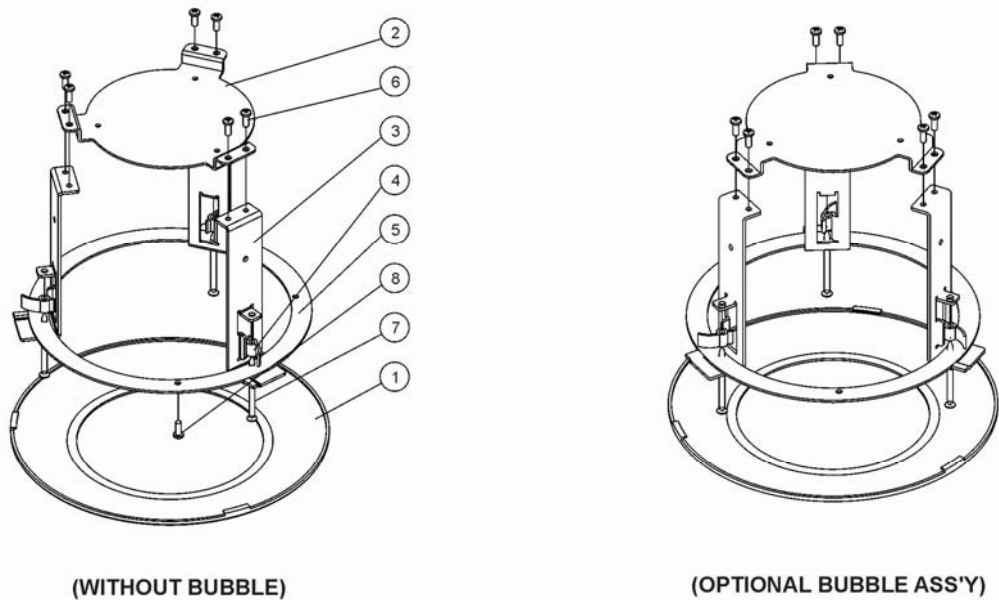


Figure 2 : Exploded Assembly

- | | |
|----------------|------------------------------------|
| - Construction | Steel and injection-molded plastic |
| - Maximum Load | Approx 4.4 lb (2kg) |
| - Dimension | Diameter = 22cm, Height = 13.5cm |

3. INSTALLATION

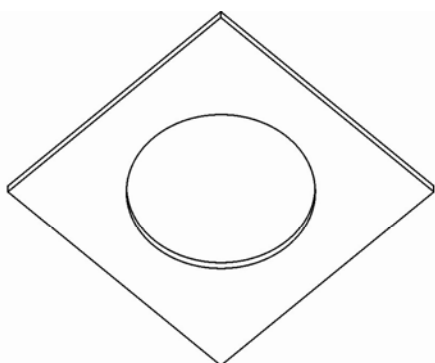


Figure 3

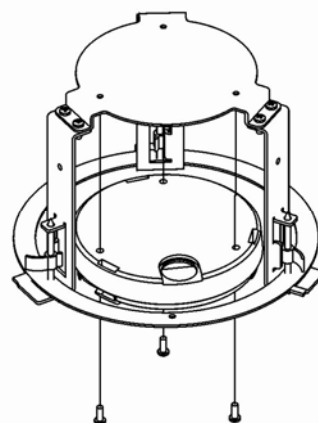


Figure 4

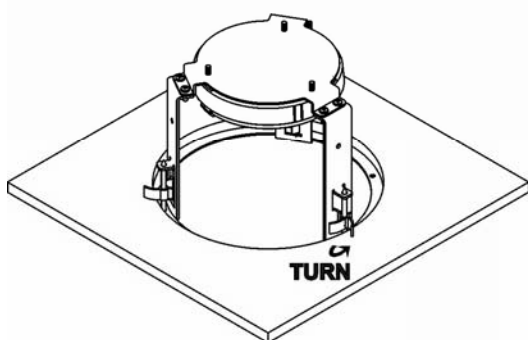


Figure 5

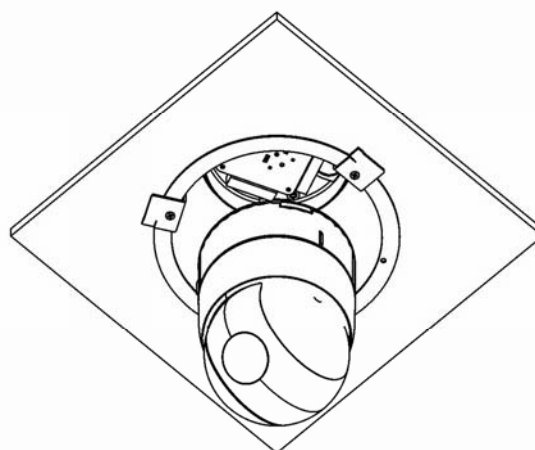


Figure 6

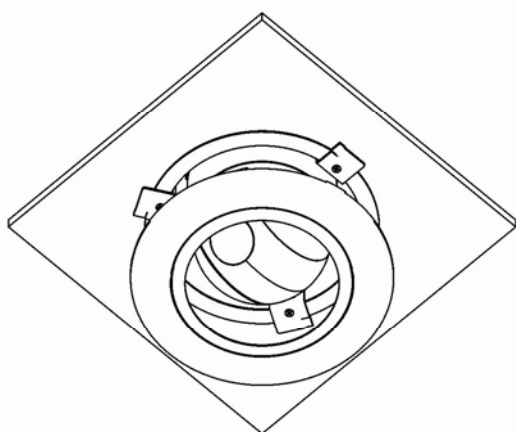


Figure 7

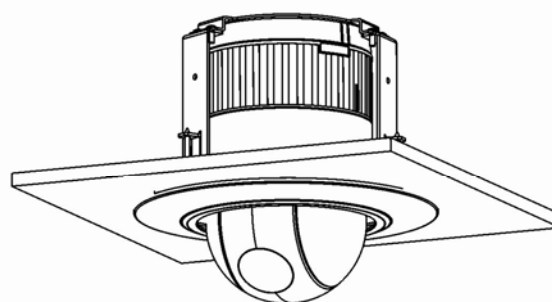


Figure 8

If you want to install the optional bubble ring, you can change the cover ring of the dome camera to the bubble ring.

NOTE: The ceiling tile cannot be thicker than 0.9inch (2.4cm).

- A. Remove the ceiling tile from the ceiling. Draw a circle whose diameter is 184mm on the tile (You can use the carton with a hole). Cut the circle out of the ceiling tile.
- B. To install the dome camera, fasten the dome mounting base to the base bracket (Figure 2, 2) using 3 screws which are included in accessories.
- C. Insert the flush mount into the ceiling and turn the lever clamp (Figure 2, 4) to fasten the flush mount to the ceiling.
- D. Join the dome camera to the dome mounting base.
- E. Fix the trim ring (Figure 2, 1) to the flush mount.

NOTE: To increase the safety, screw safety ring string to the guide bracket and something which can prevent falling incidently.

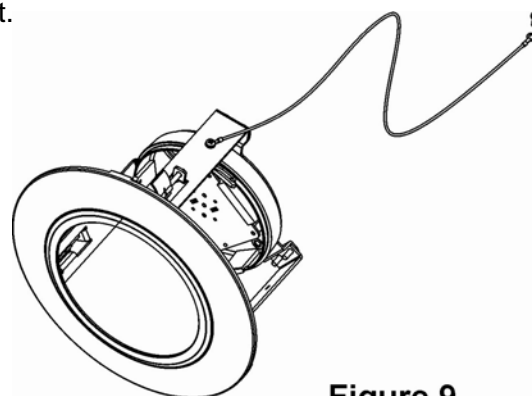


Figure 9

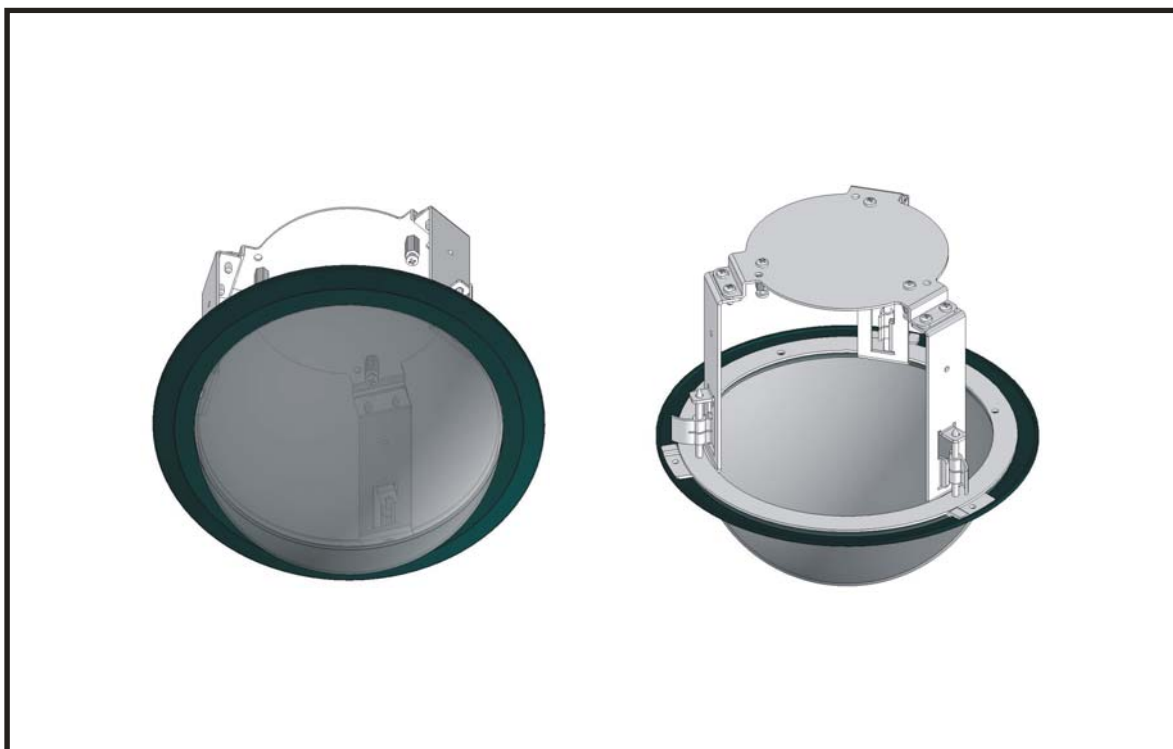
EXPLODED ASSEMBLY PARTS LIST

Item	PART NAME	Q'ty	DESCRIPTION
1	TRIM RING	1	PLASTIC
2	BASE BRACKET	1	STEEL (EGI 1.6T)
3	GUIDE BRACKET	3	STEEL (EGI 2.0T)
4	LEVER CLAMP	3	Al
5	DOME RING	1	STEEL (EGI 1.6T)
6	SCREW	6	SELF TAPPING M4x12
7	SCREW	3	M4 x 55
8	SCREW	1	M4 x 6
9	E-RING	3	Ø 4
10	SFLF TAPPING(2) SCREW	3	M4 x 12

ACCESSORY

Item	PART NAME	Q'ty
1	SAFETY RING STRING	1
2	SELF TAPPING(2) SCREW M4x12	2
3	SELF TAPPING(1) SCREW M4x12	1

FLUSH MOUNT HARDWARE



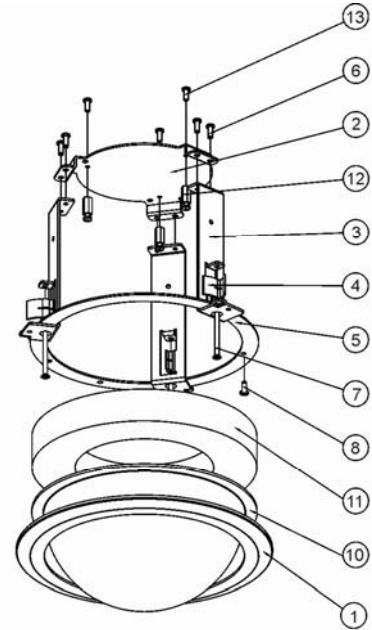
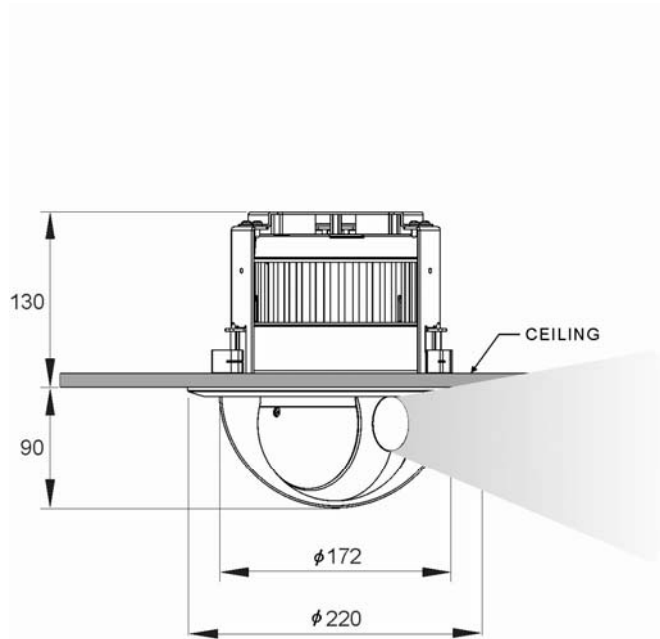
Please read this manual thoroughly before use, and keep it handy for future reference.

1. INTRODUCTION

This mounting device enables the dome camera to be mounted to the suspended ceiling. The mounting clamps, which are affixed to the ceiling tile, attach directly to the dome's mounting base for a quick and easy installation.

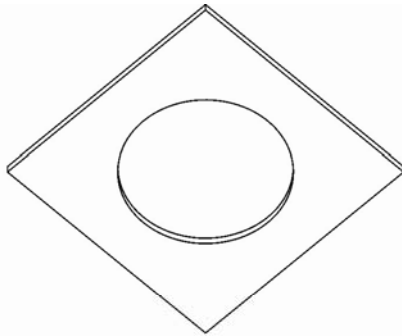
This mounting device enable to view horizontally and tint bubble hide dome camera.

2. SPECIFICATIONS

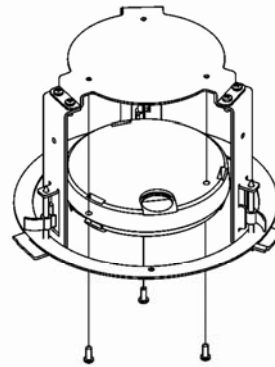


- | | |
|----------------|------------------------------------|
| - Construction | Steel and injection-molded plastic |
| - Maximum Load | Approx 6.6 lb (3kg) |
| - Dimension | Diameter = 22cm, Height = 22cm |

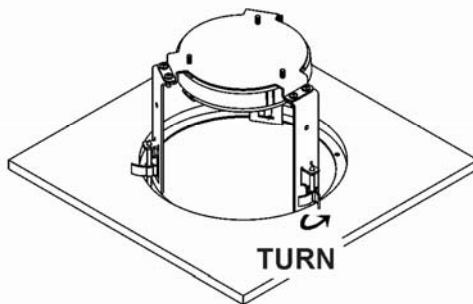
3. INSTALLATION



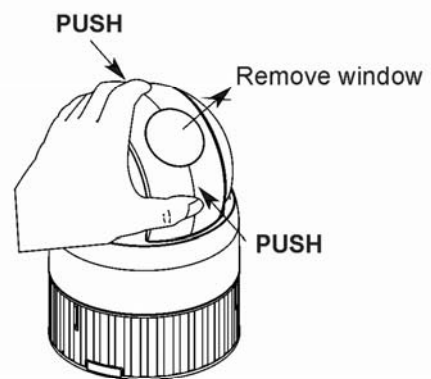
STEP 1



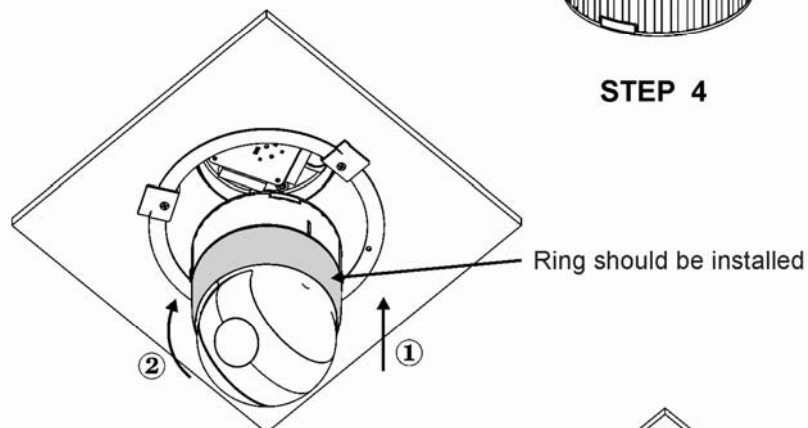
STEP 2



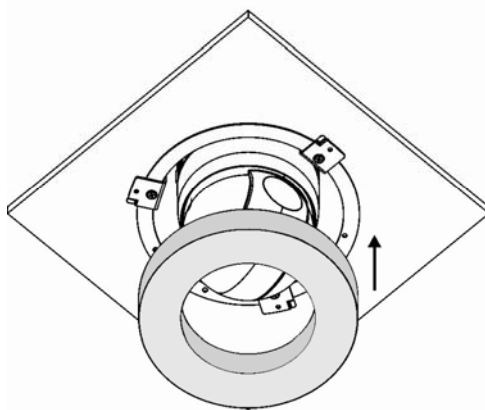
STEP 3



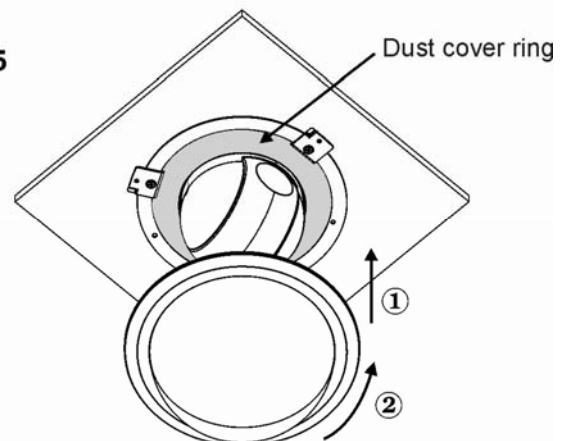
STEP 4



STEP 5



STEP 6



STEP 7

NOTE: The ceiling tile cannot be thicker than 0.9inch (2.4cm).

STEP 1. Remove the ceiling tile from the ceiling. Draw a circle whose diameter is 184mm on the tile (You can use the carton with a hole). Cut the circle out of the ceiling tile.

STEP 2. To install the dome camera, fasten the dome mounting base to the base bracket using 3 screws.

STEP 3. Insert the flush mount into the ceiling and turn the lever clamp to fasten the flush mount to the ceiling.

STEP 4. It is recommended to remove window for improving picture quality.

STEP 5. Join the dome camera to the dome mounting base.

STEP 6. Insert dust cover ring inside guide bracket to prevent housing dome covering with dust.

STEP 7. Fix the trim ring to the flush mount.

NOTE: To increase the safety, screw safety ring string to the guide bracket and the other side of that to something which can prevent falling incidently.

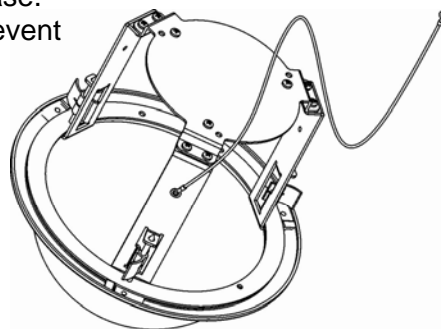


Figure 3

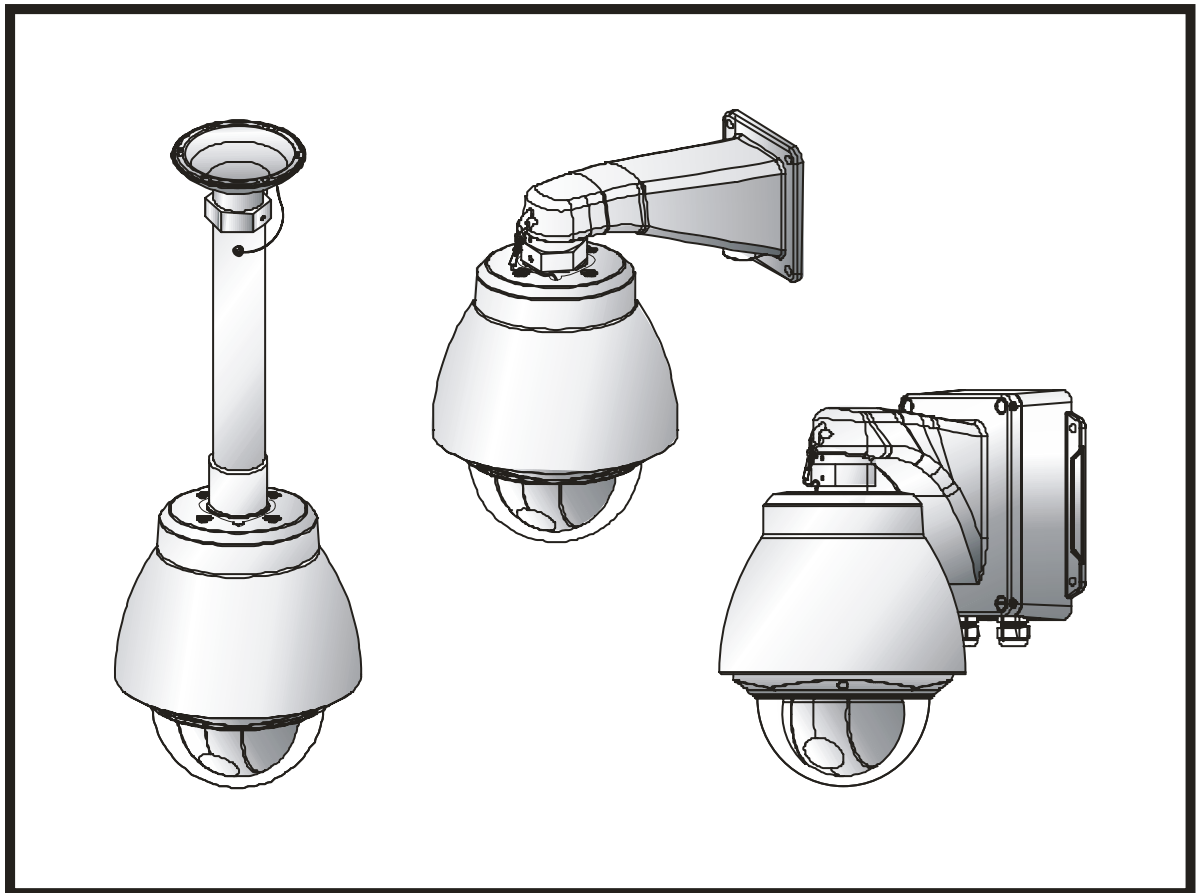
EXPLODED ASSEMBLY PARTS LIST

Item	PART NAME	Q'ty	DESCRIPTION
1	TRIM RING	1	PLASTIC
2	BASE BRACKET	1	STEEL (EGI 1.6T)
3	GUIDE BRACKET	3	STEEL (EGI 2.0T)
4	LEVER CLAMP	3	AI
5	DOME RING	1	STEEL (EGI 1.6T)
6	SCREW	6	SELF TAPPING M4x8
7	SCREW	3	M4 x 55
8	SCREW	1	M4 x 6
9	E-RING	3	Ø 4
10	HOUSING DOME (TINT)	1	ACRYLIC
11	DUST COVER RING	1	SPONGE
12	SPACER	3	M4 x 13
13	SCREW	3	M4 x 6
14	SCREW MACHINE	3	M4 x 8

ACCESSORY

Item	PART NAME	Q'ty
1	SAFETY RING STRING	1
2	SELF TAPPING(2) SCREW M4x12	2
3	SELF TAPPING(1) SCREW M4x12	1

DOME HOUSING



Please read this manual thoroughly before use, and keep it handy for future reference.

1. GENERAL

1.1 IMPORTANT SAFEGUARDS

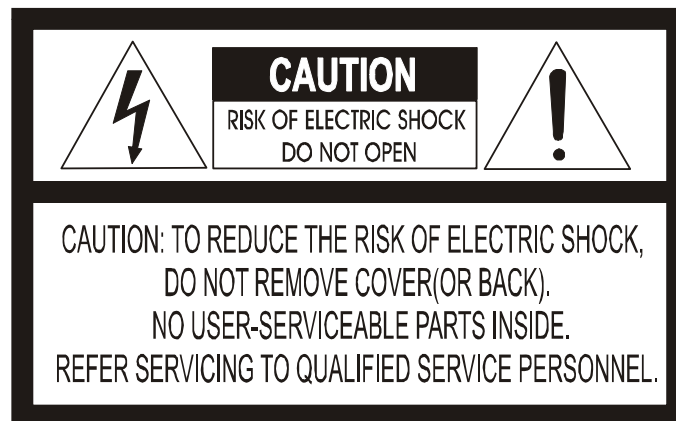
Prior to install and use of this product, the following WARNINGS should be observed.

1. Installation and servicing should only be done by qualified service personnel and conform to all local codes.
2. Unless the unit is specifically marked as a IPXX, it is designed for indoor use only and it must not be installed where exposed to rain and moisture.
3. After replacement/repair of this unit

1.2 WARNINGS AND CAUTIONS:

TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS PRODUCT TO RAIN OR MOISTURE. DO NOT INSERT ANY METALLIC OBJECTS THROUGH THE VENTILATION GRILLS OR OTHER OPENINGS ON THE EQUIPMENT.

CAUTION



EXPLANATION OF GRAPHICAL SYMBOLS



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instruction in the literature accompanying the product.

2. DESCRIPTION

The Indoor/Outdoor dome housing is used with dome camera. The housing is constructed of aluminum, steel and plastic. The housing is designed to be mounted on both the wall and the ceiling. The housing meets international IP66 standards for dust and moisture resistance. Sunshield model is available for application to avoid the direct rays of the sun.

3. INSTALLATION

Refer to the pages of 6. PARTS LIST.

1. Attach a mounting base on the ceiling or the wall using tapping screws (Ceiling Mount : M6, Wall Mount : M8, Power Box : M6) and plastic bushings.

CAUTION :

For safety, the structure that a mounting base is installed on should be strong enough to support a minimum of 25kg (55.1 lb).

For safety, a mounting base should be strong enough to support a minimum of 19.8lb (9kg).

2. Wind Teflon Tape around the thread of "A" (Figure 1.) about 20 times for seal.

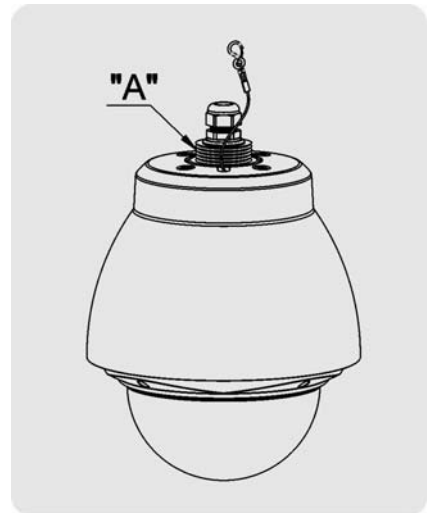


Figure 1

3. Pull out all the required cables through a mounting base and its pipe.
4. Fit "A" that Teflon Tape is wound around to the base and turn this unit until it is securely fastened.
5. Connect the power connector of 24VAC of the cables to "AC IN" of fan & heater board ②③ .
6. Connect the power, the Alarm and the communication lines in the cables to the connectors of the Base Board of the Dome Camera.
7. Fasten the Dome Base on the Screw Spacer ①⑧ using 3 screw(BH M4xL8)
8. Attach the Dome Body to the Dome Base. After aligning the arrow mark of the Dome Base with the unlock mark of the Dome Body, turn the Dome Body to the lock mark direction.

Note : It is recommended to remove the Window and the Bubble Ring Ass'y of the Dome Camera to improve the quality of picture. (Refer to the Figure. 2)

9. Insert the Rubber Gasket ⑦ into the Body ⑥ and fasten the Bubble Ring ⑪ to the Body ⑥ using 3 screws ⑬ .

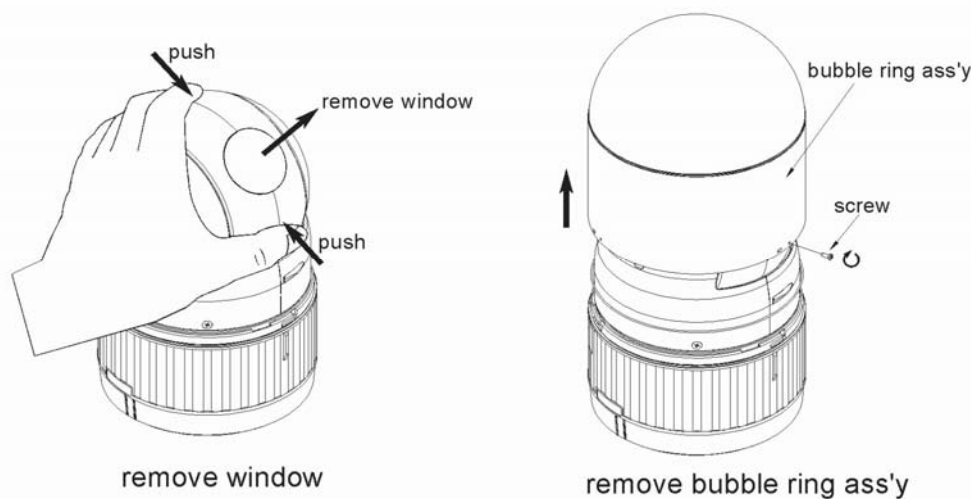


Figure 2. Remove the Window and the Bubble Ring Ass'y

FUNCTION

JUMP1 :

Join JUMP 1 each other to operate the Fan continuously irrespective of temperature changes.

Relay :

Connect the Alarm OUT(Relay) of a Dome to this Relay to work the Heater irrespective of temperature changes. (ex. After connecting RC1 and NO1 of a Dome to this Relay, turn on the Alarm out 1 in the Dome.(Heater ON))

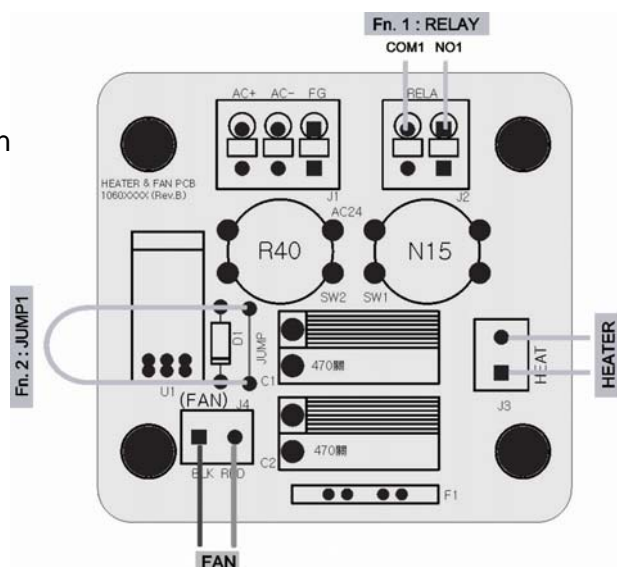


Figure 3. Fan & Heater Board Diagram

4. OPERATION

This housing has controlled the heater and the fan by a thermostat. The thermostat of heater is set to turn it on from 4

5. MAINTENANCE

Perform the following maintenance at regularly scheduled intervals to extend the operational life and appearance of the equipment.

Clean the Bubble with a mild nonabrasive detergent in water and a soft cloth to maintain pictures clarity.

6. PARTS LIST

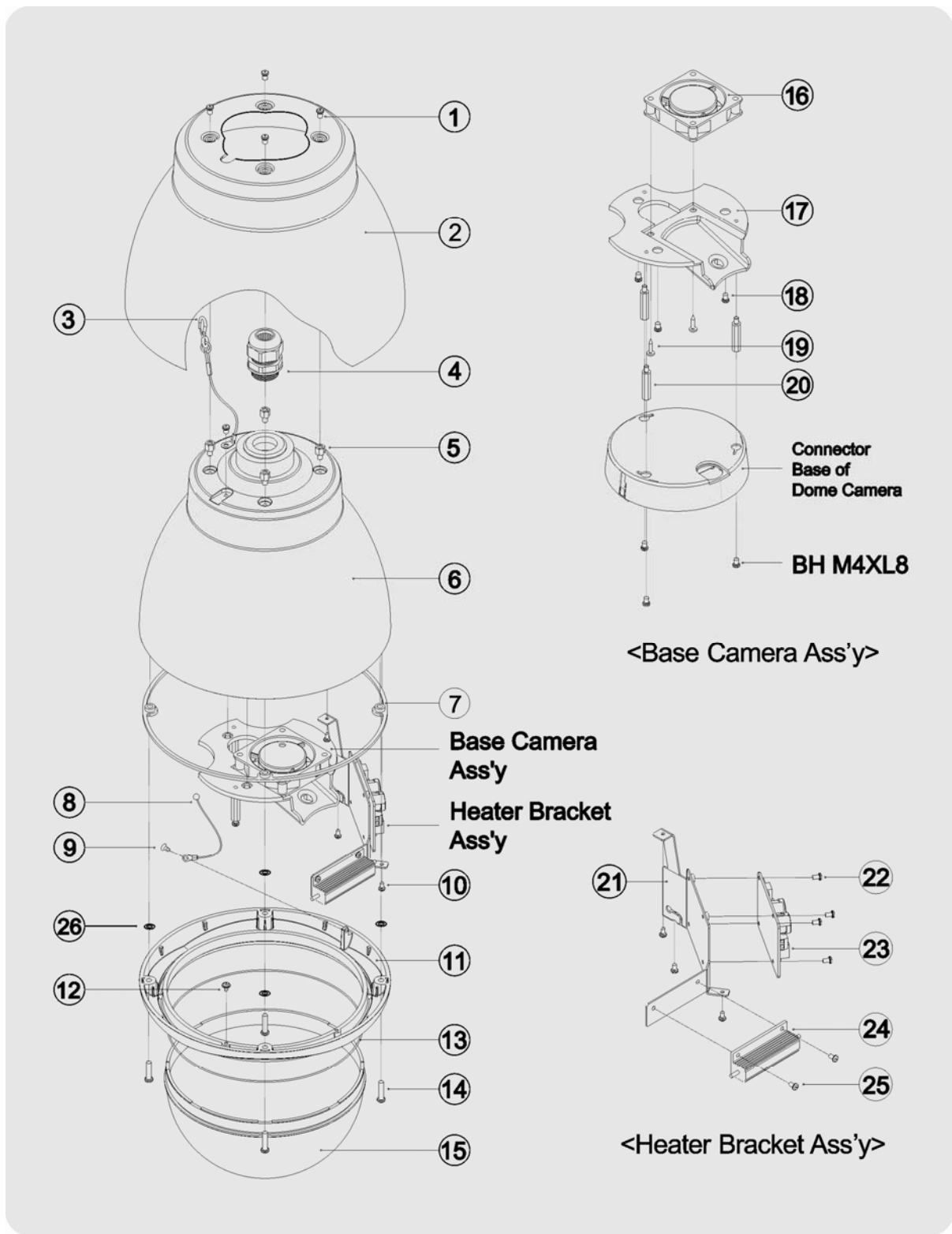


Figure 4. Exploded Assembly Diagram

6.1 PARTS LIST

NO	NAME	STANDARD	Q'ty
1	Machine Screw	PH M4 X L5 (SUS)	5
2	SunShield	AL	1
3	Ass'y Safety Wire B		1
4	PG	DAPG-16	1
5	Screw Spacer B	MBSB	4
6	Body	AL	1
7	Rubber Gasket	Silicon	1
8	Ass'y Safety Wire A		1
9	Tapping Screw	FH2 M3 X L6	1
10	Machine Screw	PH M3 X L8	3
11	Bubble Ring	ABS	1
12	Tapping Screw	NPH M3 X L5	1
13	O-Ring	Silicon	1
14	Torx Screw	M4 X L17(SUS)	4
15	Clear Bubble or Smoke Bubble	PC (2.5t)	1
16	Fan	DC 24V	1
17	Base Camera	AL	1
18	Machine Screw	PH M4 X L8	3
19	Tapping Screw	PH M5 X L14	2
20	Screw Spacer A	MSWR	3
21	Heater Bracket	EGI	1
22	Machine Screw	PH M3 X L4.5	4
23	Fan & Heater Board		1
24	Heater	AC 28V	1
25	Machine Screw	PH M3 X L4.5	2
26	O-Ring	Silicon	4
27	Torx L-Wrench	T-20, 5mm type	3

*The Indoor types don't include the parts of ①, ② and ⑤.

*You can choose one of the Clear Bubble or the Smoke.

7. SPECIFICATIONS

ELECTRICAL	
Power source	24VAC, 50/60Hz
Power consumption	Heater 45Watts (28VAC Max. 50Watts) Blower 2.4watts
MECHANICAL	
Construction	Aluminum, Steel and Plastic (ABS)
Finish	Polyester Powder Coat
Dome Bubble	Plastic (PC)
Dimension	Refer to the Figure 5.
Weight	Approx. 6.39lb(2.9kg) - with sunshield Approx. 5.07lb(2.3kg)
GENERAL	
Ambient Environment Temperature	-40°C to 50°C
Ratings	IP 66

8. DIMENSION

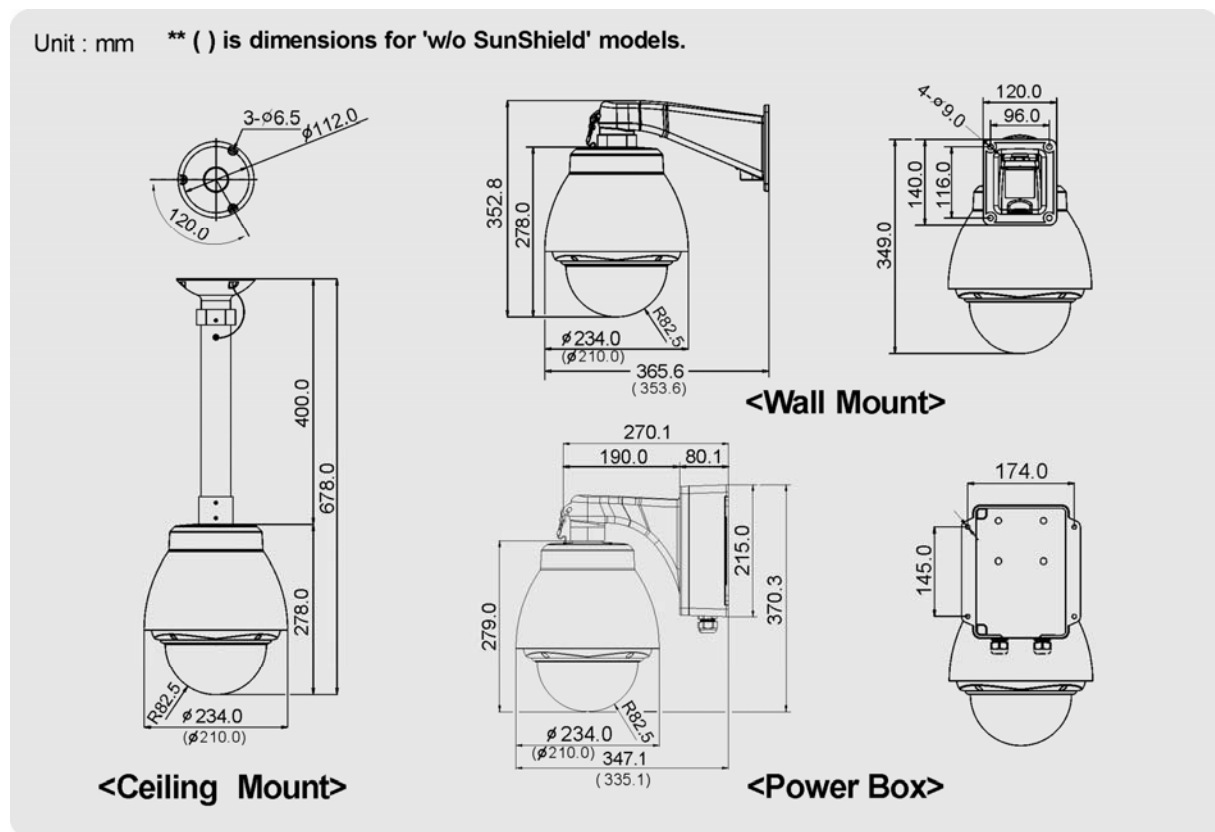
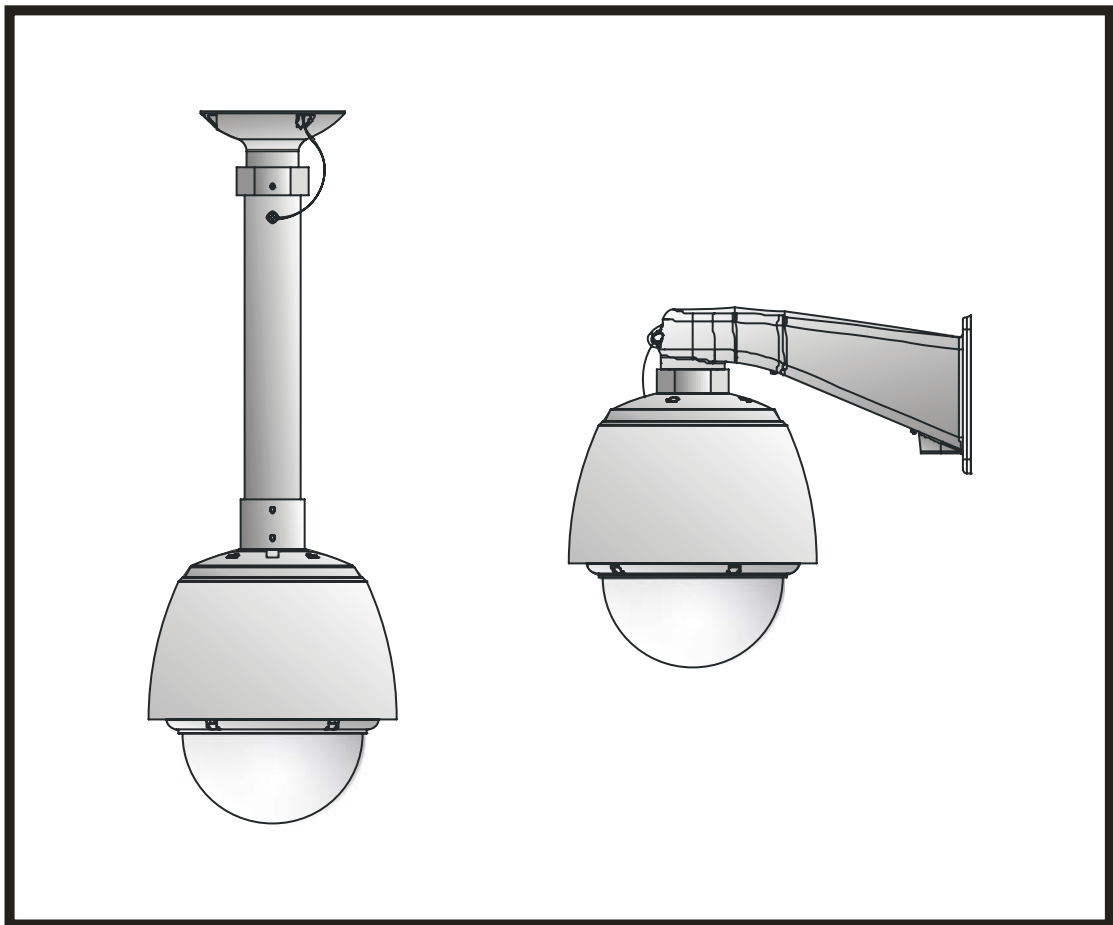


Figure 5. Dimension Drawing

INSTRUCTION MANUAL

Wall & Ceiling Mount Kit



Please read this manual thoroughly before use, and keep it handy for future reference.

1. INTRODUCTION

The mount kit of the speed dome housing is easy and it is suitable in the installation quick. The mount kit is constructed of die-case aluminum and steel.

2. INSTALLATION

The wall or ceiling mount must be attached to a structural object such as hard wood, concrete that will support the weight of the mount and AIO.

The use of a solid backboard is recommended when attaching to gypsum walls.

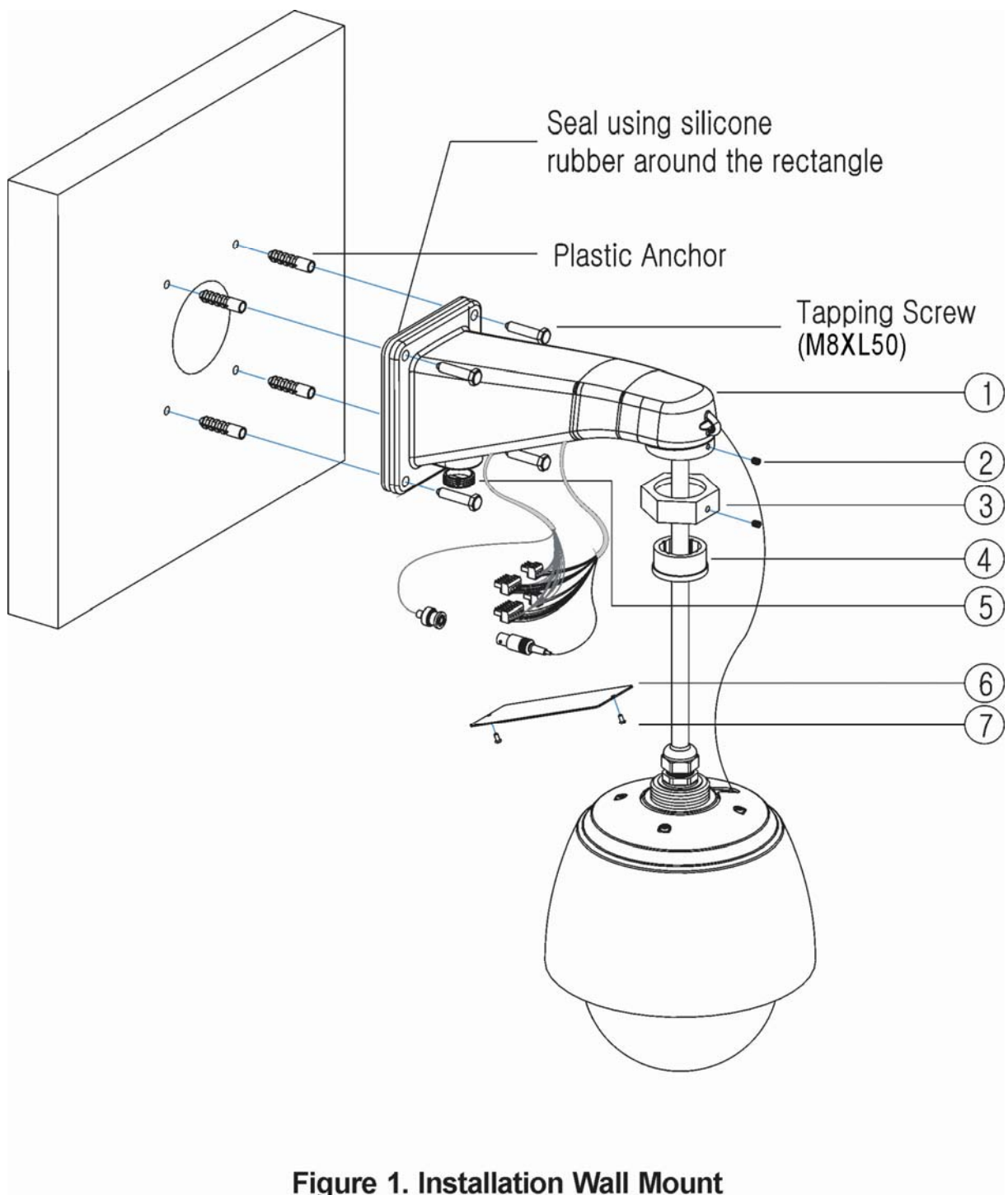
1. Attach the mounting base to wall using the supplied M8 tapping screw and plastic bushing. (Ceiling using the supplied M6 tapping screw and bushing)
2. Wind the both thread of the pipe end with Teflon tape about 20times for sealing. Then use a silicone rubber sealant to seal the area where the wall (ceiling) mount and the pipe meet.
3. Place a bead of silicone sealant around the wall and ceiling mount mounting flange, press it to the surface and line up the flange hole with drilled holes.

CAUTION : A silicone rubber sealant must be applied to seal the housing to secure waterproofing.

2.1 WALL MOUNT KIT

Note : Refer to Parts List.

1. Mark and drill mounting holes in the surface using the Wall Mount Flange.
2. Pull out cables required to connect to the dome camera from the wall or route cables through a section of 0.75 in. (19mm) conduit pipe.
3. Remove the access plate from the wall mount bracket.
4. Attach the wall mount bracket using screws routing cables through the access plate's hole.
5. Attach the housing's safety wire to the wall mount's latch.
6. Fix the housing to the wall mount bracket using the locking nut after routing cables through the wall mount bracket and tighten the housing set screw with the supplied wrench.
7. After connecting cables, attach the access plate.



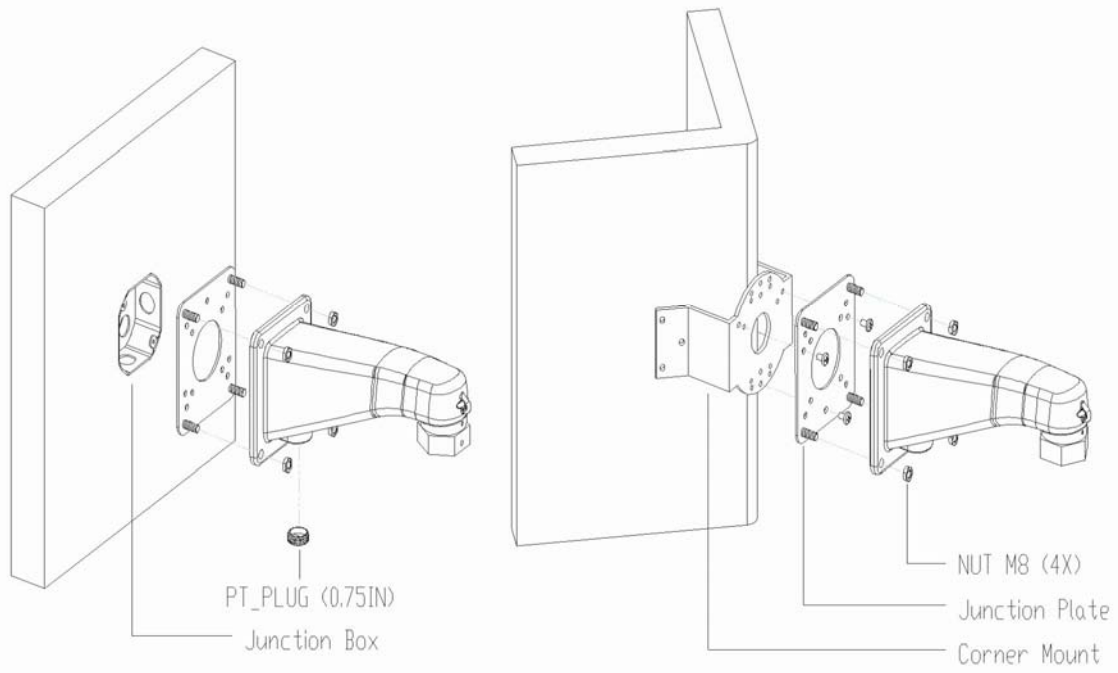
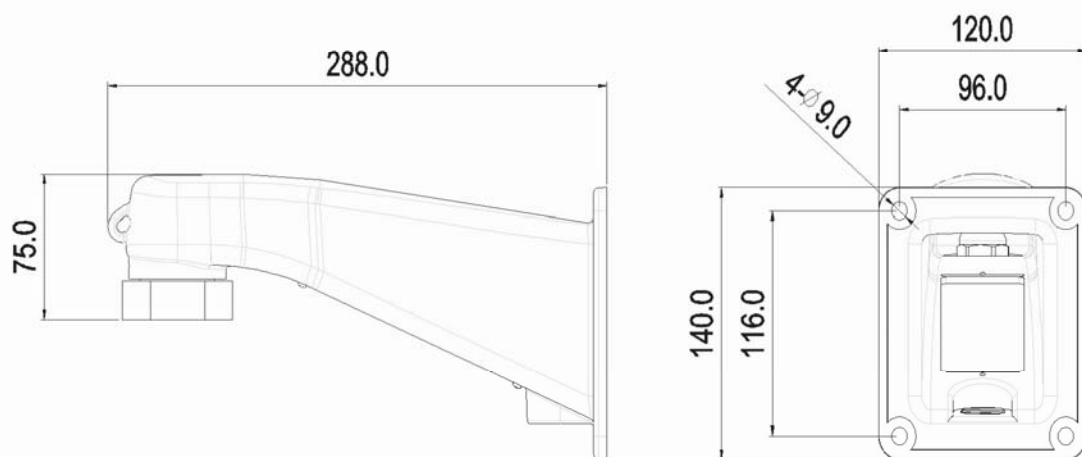


Figure 2. Installation Junction box & Corner mount



< WALL MOUNT KIT >

Figure 3. Dimension Drawing

Parts List for Wall Mount Kit

Item	PART NAME	MATERIAL	Q'ty
1	Wall Mount	AL	1
2	Set Screw	M4	2
3	Locking Nut	AL	1
4	Locking Socket	AL	1
5	PT Plug	3/4"	1
6	Access Plate	EGI	1
7	Screw Maching	PH M3, L=5	2

*Please refer to Figure 1.

ACCESSORIES for Wall Mount Kit

Item	PART NAME	MATERIAL	Q'ty
1	Plastic Anchor	M8	4
2	Tapping Screw(HEX)	PTS1 M8, L=50	4
3	L-Wrench (For M4 Screw)	M2	1
4	PT Plug Tool	GI	1
5	Junction Plate	SS41	1
6	Spring Washer	M8	4
7	Nut(Hex)	M8 PI	4

2.2 CEILING MOUNT KIT

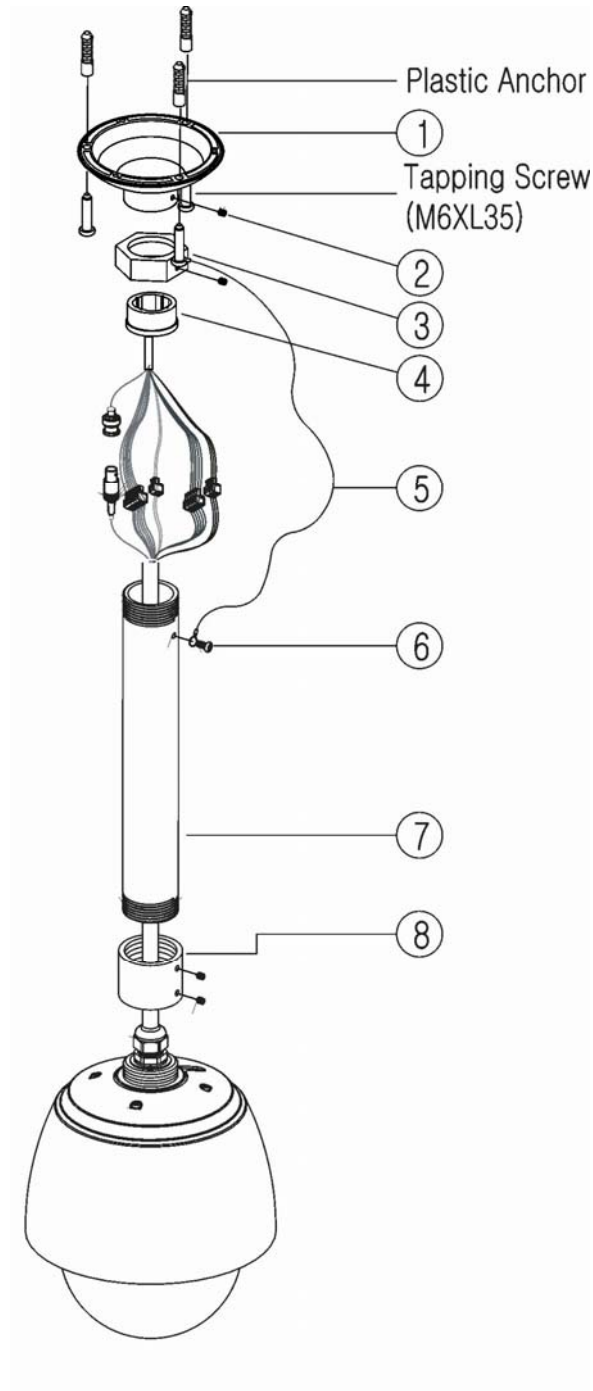


Figure 4. Installation Ceiling Mount

1. Select a suitable mounting location and verify there is sufficient cable to connect with cables from the housing.

2. Mark and drill mounting holes in the surface using the ceiling mount flange.

3. Pull out cables required to connect to the dome camera from the ceiling.

4. Attach the ceiling mount bracket using screws routing cables through the locking nut.

5. Tighten the housing with the pipe using the socket after routing cables through the pipe.

6. Attach the housing's safety wire to the ceiling mount's M6x35 tapping screw.

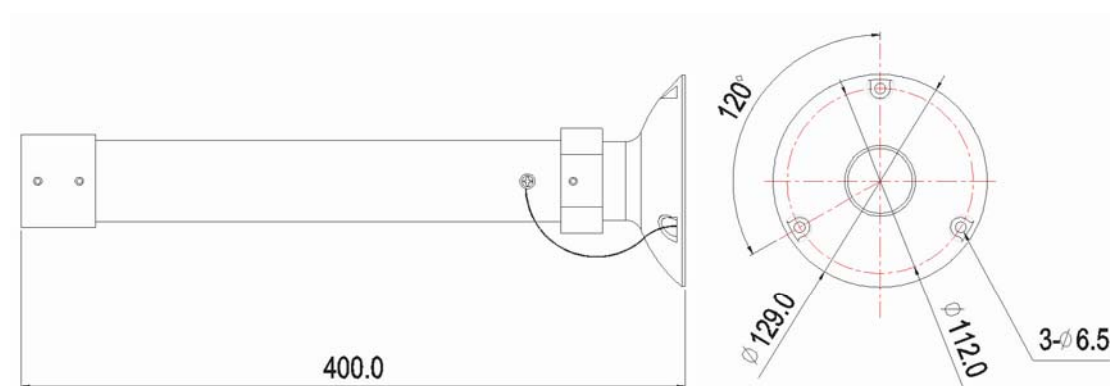
7. After connecting cables, fix the pipe to the ceiling mount using the locking nut.

8. Tighten set screws of the socket and locking nut with the supplied wrench.

* Please refer to Parts List



Figure 5. Sealing position



< CEILING MOUNT KIT >

Figure 6. Dimension Drawing

Parts List for Ceiling Mount Kit

Item	PART NAME	MATERIAL	Q'ty
1	Ceiling Mount	AL	1
2	Set Screw	M4	4
3	Locking Nut	AL	1
4	Socket	AL	1
5	Safety Wire		1
6	Screw Machine	BH M4, L=8	1
7	Pipe	AL	1
8	Socket	AL	1

*Please refer to Figure 4.

ACCESSORIES for Ceiling Mount Kit

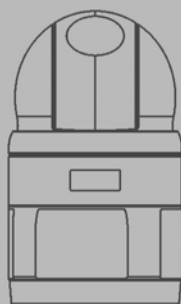
Item	PART NAME	MATERIAL	Q'ty
1	Plastic Anchor	M6	3
2	Tapping Screw	PTS1 M6, L=35	3
3	L-Wrench (For M5 Screw)	M2.5	1

Specification

Item	Item	HPB241	HPB242
1	Construction	Die Cast and Aluminum	
2	Finish	Light-gray Polyester Powder Coat	
3	Maximum Load	13.2lb (6kg)	
4	Dimension	Refer to the Dimensional Outline	
5	Unit Weight	2.65lb (1.2kg)	3.97lb (1.8kg)
6	Inlet Dimension	PT 1-1/2	PF 1-1/2

-MEMO-

-MEMO-



Fastrax IV
Speed Dome Camera