INSTRUCTION MANUAL Ver 1.01

ANTI-VANDAL 30x, 36x, 37x SPEED DOME CAMERA

DOME 5.7" | 432X ZOOM | DAY & NIGHT | ON SCREEN DISPLAY 123 | 360° CONTINUOUS | 360°/sec SPEED | 0.05°/sec LOW SPEED | PRESET 127 | AUTO PAN 8 | SCAN 8 | PATTERN 4 | VECTOR MOTION | PRIVACY ZONE | ALARM 4IN/2OUT | SCHEDULE

CAUTION

RISK OF ELECTRIC SHOCK DO NOT OPEN

CAUTION : TO REDUCE THE RISK OF ELECTRICAL SHOCK, DO NOT OPEN COVERS.
NO USER SERVICEABLE PARTS INSIDE.
REFER SERVICING TO QUALIFIED SERVICE PERSONAL.

This lightning flash with arrowhead symbol is intended to alert the user to the presence of un-insulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

This exclamation point symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

WARNING: TO PREVENT THE RISK OF FIRE OR ELECTRIC SHOCK HAZARD, DO NOT EXPOSE ELECTRONICS TO RAIN OR MOISTURE

Before installing and using the camera, please read these instructions
thoroughly and retain them for later reference

■ ■ ■ Important Safeguard

1. **Read Instructions**

   Read all of the safety and operating instructions before using the product.

2. **Retain Instructions**

   Save these instructions for future reference.

3. **Attachments / Accessories**

   Do not use attachments or accessories unless recommended by the appliance manufacturer as they may cause hazards, damage product and void warranty.

4. **Water and Moisture**

   Do not use this product near water or moisture.

5. **Installation**

   Do not place or mount this product in or on an unstable or improperly supported location. Improperly installed product may fall, causing serious injury to a child or adult, and damage to the product. Use only with a mounting device recommended by the manufacturer, or sold with the product. To insure proper mounting, follow the manufacturer's instructions and use only mounting accessories recommended by manufacturer.

6. **Power source**

   This product should be operated only from the type of power source indicated on the marking label.

■ ■ ■ Precautions

❑ **Operating**

- Before using, make sure power supply and others are properly connected.
- While operating, if any abnormal condition or malfunction is observed, stop using the camera immediately and then contact your Special dealer.

❑ **Handling**

- Do not disassemble or tamper with parts inside the camera.
- Do not drop or subject the camera to shock and vibration as this can damage camera.
- Care must be taken when you clean the clear dome cover. Especially, scratch and dust will ruin your quality of camera.

❑ **Installation and Storage**

- Do not install the camera in areas of extreme temperature, which exceed the allowable range.
- Avoid installing in humid or dusty places.
- Avoid installing in places where radiation is present.
- Avoid installing in places where there are strong magnetic fields and electric signals.
- Avoid installing in places where the camera would be subject to strong vibrations.
- Never expose the camera to rain and water.

NOTE: If the camera is installed or rebooted after power failure when ambient temperature is below the freezing point, the dome cover is frosted. In this case, the frost will be disappeared after 3 hours after turning on the power. (It is noted that lowest guaranteed operating temperature is -45℃ (-49℉) without wind.)

CONTENTS

■ ■ ■ Features

❑ **Camera Specifications**

- CCD Sensor :

	CCD
30x	1/4" Interline Transfer CCD
36x	1/4" EX-view HADTM CCD
37x	1/4" Double Density Interline Transfer CCD

- Zoom Magnification :

	Optical Zoom	Digital Zoom	Total
30x	30	10	Max. 300
36x	36	12	Max. 432
37x	37	12	Max. 444

- WDR(Wide Dynamic Range) function support. (36x, 37x Only)

- DIS (Digital Image Stabilizer) function support. (37x Only)

- Day & Night Function : ICR(IR Cut filter Removal)

- Various Focus Mode: Auto Focus / Manual Focus / Semi-Auto Focus.

- Independent or Global camera settings for each Preset locations.

❑ **Powerful Pan/Tilt Functions**

- Max. 360°/sec high speed Pan/Tilt Motion

- Using Vector Drive Technology, Pan/Tilt motions are accomplished in the shortest path. As a result, time to target view is reduced dramatically and the video on the monitor is very natural to watch.

- Ultra low speed (0.05°/sec) enables operator to locate camera to desired target view with accuracy and ease.

- Zoom-proportional pan/tilt speed helps operator to move the camera easily.

❑ **Preset, Pattern, Scan, Group, Privacy Mask, Schedule and More…**

- MAX. 127 Presets are assignable. All of them have independent characteristics such as White Balance, Auto Exposure, Label, Alarm Input/Output and so on.

- Max. 8 set of Scan can be stored. This enables to move camera repetitively between two preset positions with designated speed.

- Max. 4 of Patterns can be recorded and played back. This enables to move camera to follow any trajectory operated by joystick as closely as possible.

- Max. 8 set of Group action can be stored. This enables to move camera repetitively with combination of Preset or Pattern or Scan. A Group is composed of max. 20 entities of Preset/Pattern/Scans.

- Max 8 Privacy Masks can be set up to protect privacy of other people.

- 7 rules of Schedule can be assigned by day and time. Appropriate actions (such as Home, Preset, Group, Pattern and Scan) can be defined for each rule. Also, it is possible to use **Weekday** and **All days** to simplify the rule.

❑ **PTZ(Pan/Tilt/Zoom) Control**

- With RS-485 communication, max. 255 of cameras can be controlled at the same time.

- Pelco-D/ Pelco-P/ Samsung protocol can be selected as a control protocol in the current version of firmware.

❑ **OSD(On Screen Display) Menu**

- OSD menu is provided to display the status of camera and to configure the functions interactively.

- The information such as Camera ID, Pan/Tilt/Zoom/Direction, Alarm Input & Output, date/time, current temperature and Preset can be displayed on screen.

- Each display item can be turned on or off independently.

❑ **Alarm I/O Functions**

- 8 alarm sensor Inputs and 4 relay output are available.

- To reject external electric noise and shock perfectly, alarm sensor Input is decoupled with photo coupler.

- The signal range of sensor input is from DC 5.0 to 12.0 volts to adopt various applications.

- If an external sensor is activated, camera can be set to move to the corresponding Preset position.

- Relay outputs can be assigned to work with a certain preset.

❑ **Reserved Presets for Special Purpose**

- Most of camera settings are directly changed by calling Reserved Presets, not entering into OSD menu. For more information, refer to "Reserved Presets" in page 18 of this manual.

Product & Accessories

❑ Product
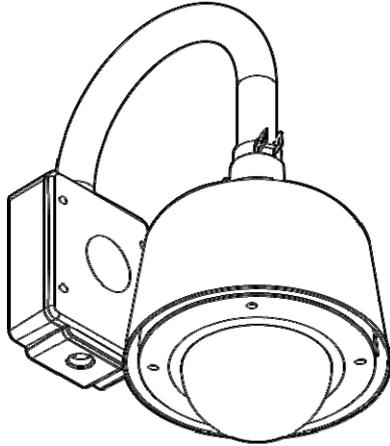
● Wall Mount Type
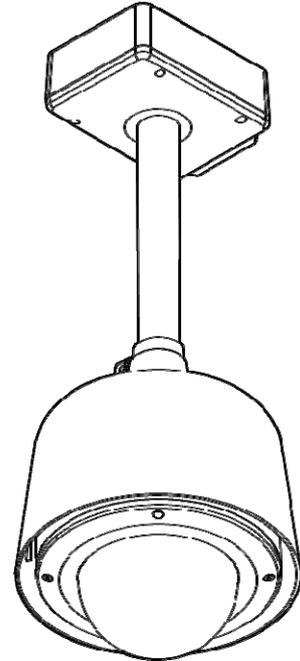
● Ceiling Mount Type

❑ Accessories

Hexagonal wrench	Water proof tape	Hole Template	Anchor bolts (4pcs)
Housing Safety Cable Hanger	Instruction Manual	Safety Cable	
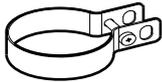
Parts Name & Functions

SUN SHIELD &
UPPER HOUSING

PTZ MECHANISM

DOME SAFETY CABLE

FAN/HEATER CABLE

FAN

HEATER

DOME COVER

INNER BOX

HOUSING SAFETY CABLE
HANGER
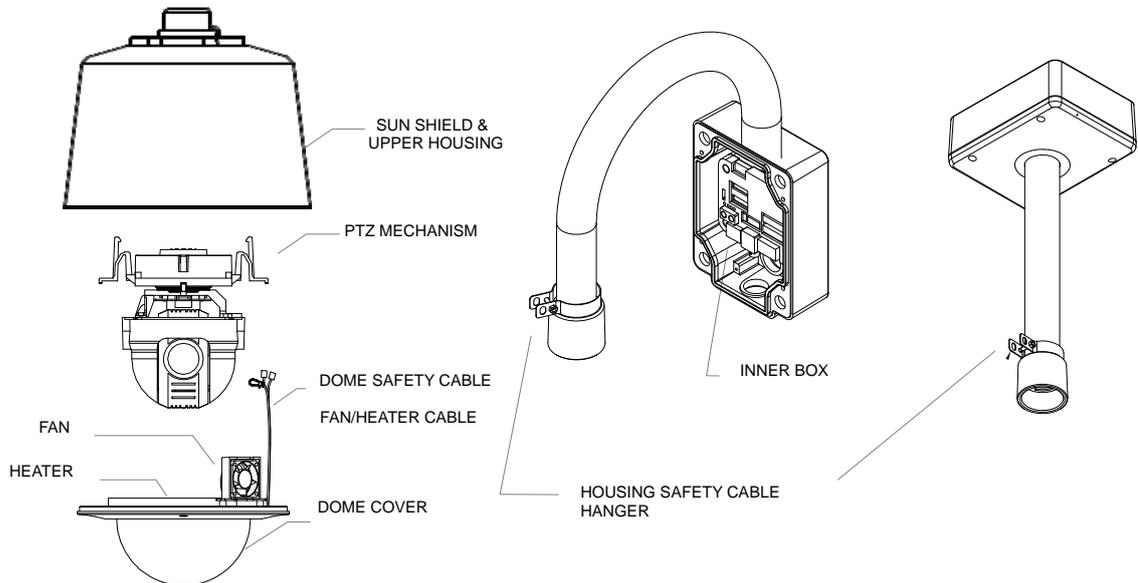
● Dome Cover

Do not detach protection vinyl from dome cover before finishing all installation process to protect dome cover from scratches or dust.

In the dome cover, there are Fan and Heater to remove moisture on the bubble dome.

● Sunshield &

Upper housing

Sunshield protect bubble dome cover from the sun rays and rain fall from. In the sunshield, there is the upper housing which will contain accommodate PTZ mechanism. Also, the upper housing will be connected to both mounting brackets and dome cover.

● Wall/Ceiling mount Bracket

These are used to install the camera on the wall or ceiling and have junction box. The junction box of the bracket accommodate inner box.

● Inner box

The inner has many important roles of connection box between camera and outside. Top of the box, there are dip switches and terminal blocks for Power supply, Video, Communication, Alarm Input/output.

DIP Switch Setup

Before you install the camera, you should set the DIP switches to configure the camera ID, communication protocol.

Protocol
0x00 : Auto Select
0x01 : Pelco-D
0x02 : Pelco-P
0x03 : SAMSUNG

Buad Rate
0x00 : 2400
0x01 : 4800
0x02 : 9600
0x03 : 19200
0x04 : 38400

RS-485
Terminate

ID Setting (1~255)

❑ Camera ID Setup

ON

ON
1 2 3 4 5 6 7 8
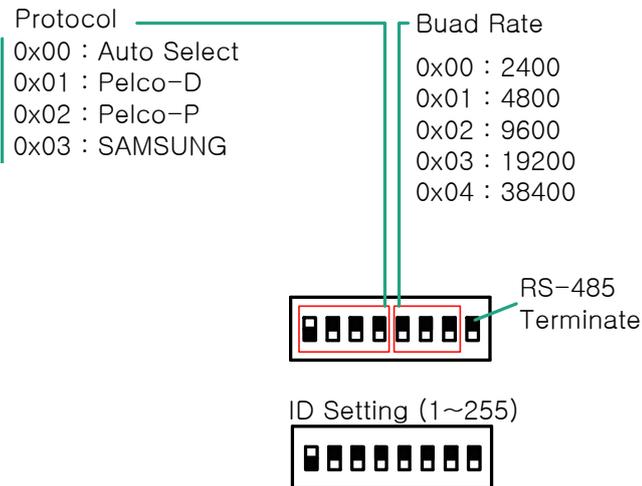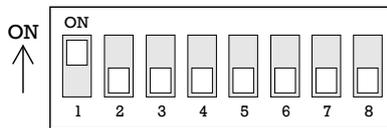
● ID number of camera is set using binary number. The example is shown bellow.

Pin	1	2	3	4	5	6	7	8
ID Value	1	2	4	8	16	32	64	128
ex) ID=5	on	off	on	off	off	off	off	off
ex) ID=10	off	on	off	on	off	off	off	off

● The range of ID is 0~255. Factory default of Camera ID is 1.

● If you want to control a certain camera, you must match the camera ID with Cam ID setting of DVR or Controller.

❑ Communication Protocol Setup
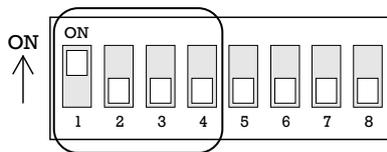
● Select the appropriate Protocol with DIP switch combination.

Switch State				Protocol
Pin1	Pin2	Pin3	Pin4	
OFF	**OFF**	**OFF**	**OFF**	**Auto Protocol**
ON	OFF	OFF	OFF	PELCO-D
OFF	ON	OFF	OFF	PELCO-P
ON	ON	OFF	OFF	SAMSUNG

● If you set the protocol as Auto Protocol, camera will automatically recognize the kind of Protocol.

● Auto Protocol supports Pelco-D and Samsung Protocol.

● If you want to control using DVR or system keyboard, their protocol must be identical to camera. Otherwise, you can not control the camera.

● If you changed camera protocol by changing DIP S/W, the change will be effective after you reboot the camera.

● Factory default of protocol is "Auto Protocol"

❑ Communication Baud rate Setup
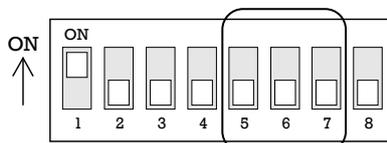
● Select the appropriate Baud rate with DIP switch combination.

Switch State			Protocol
Pin5	Pin6	Pin7	
OFF	OFF	OFF	2400 BPS
ON	OFF	OFF	4800 BPS
OFF	**ON**	**OFF**	**9600 BPS**
ON	ON	OFF	19200 BPS
OFF	OFF	ON	38400 BPS

● Factory default of Baud rate   is "9600 BPS"

❑ RS-485 Termination Resistor
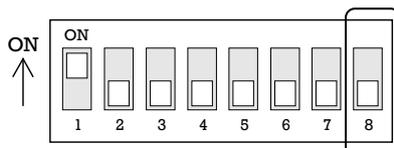
● Pin 8 is used for ON/OFF of RS-485 Termination. Normally, it must be OFF state. Especially when you have trouble with long Daisy chain style connection, turn ON this termination switch of last camera.

⊙ Pin 8   RS-485 Termination Resistor (On/Off)

Installation using Wall Mount Bracket

① Using the paper template, mark the holes on the wall.

② After drilling the holes, fix the four anchor bolts into the holes.
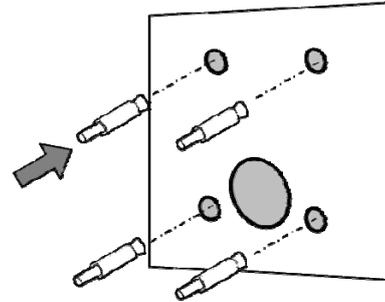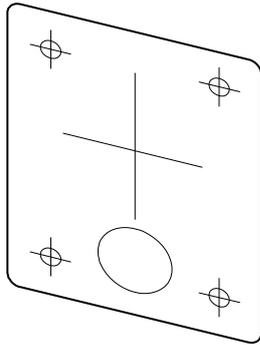
③ After locating the wall mount bracket on the anchor bolts properly. Tighten the nuts for anchor bolts

④ Connect cables to terminal blocks and BNC in the inner box of junction box. See the cabling in the next section.
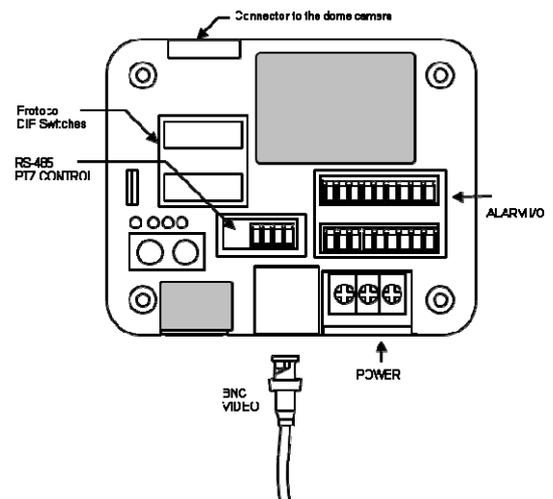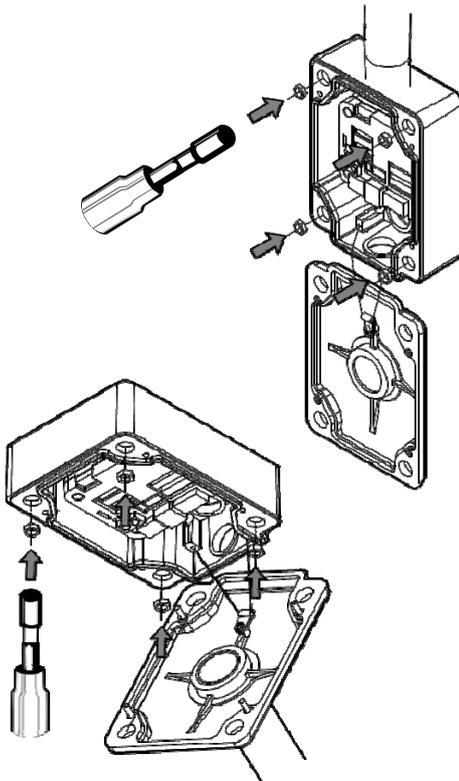
⑤ After hooking the safety cable on the hole of pipe **[1]**, attach the upper housing to wall mount bracket by turning it at least seven turns **[2]**. To fix the upper body orientation, turn the handle of double nuts to clockwise tightly **[3]**.

⑥ Open the dome cover to install the PTZ camera mechanism. Care must be taken dome cover is hung by internal safety cable properly. Plug fan/heater cables into the connectors in the housing.
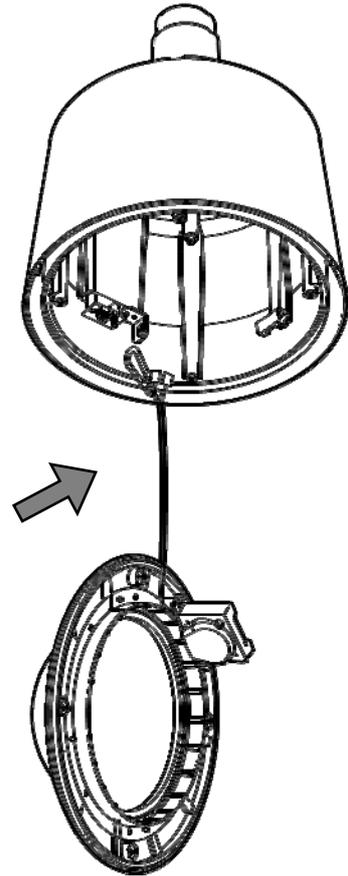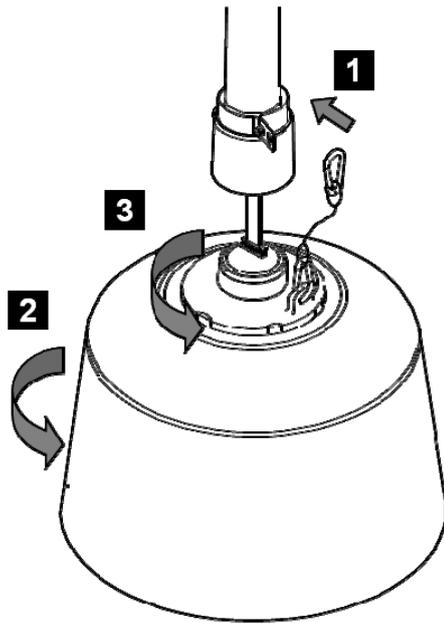
⑦ Plug the connector of cable from junction box into properly. After checking the orientation of one touch connector in the upper housing, press the PTZ mechanism into hook in the upper housing.

⑧ To lock the PTZ mechanism to the upper housing, press the two black handles till it sounds snap.
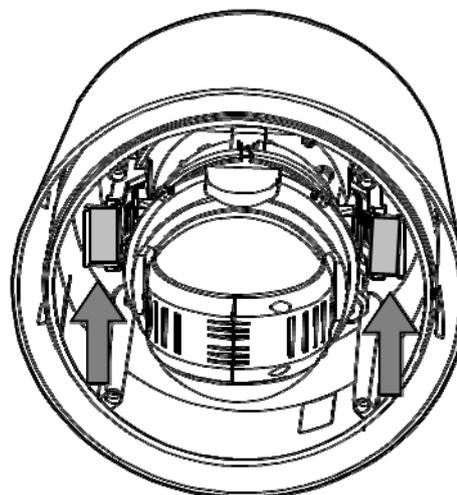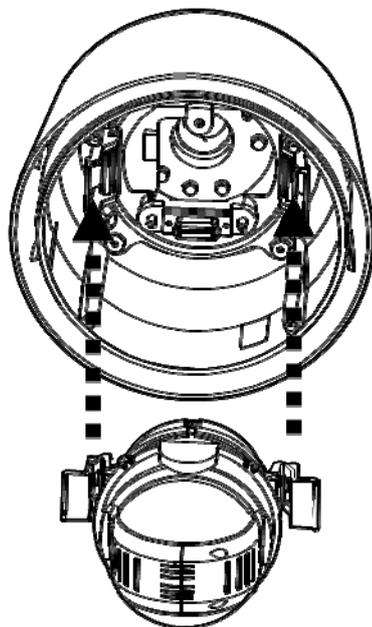
⑨ Close the dome cover. Care must be taken to locate dome cover by matching the "Arrow" mark.

⑩ Tighten four screws on the dome cover in sequence as shown in the picture bellow.
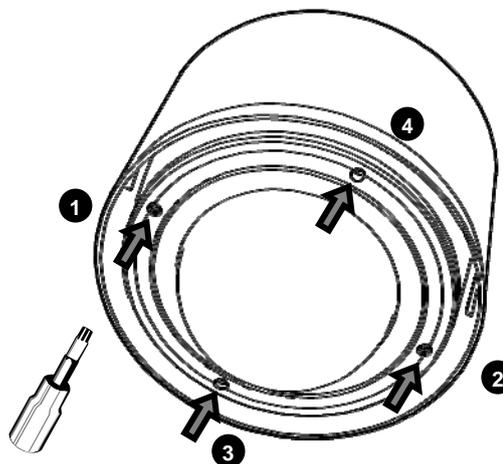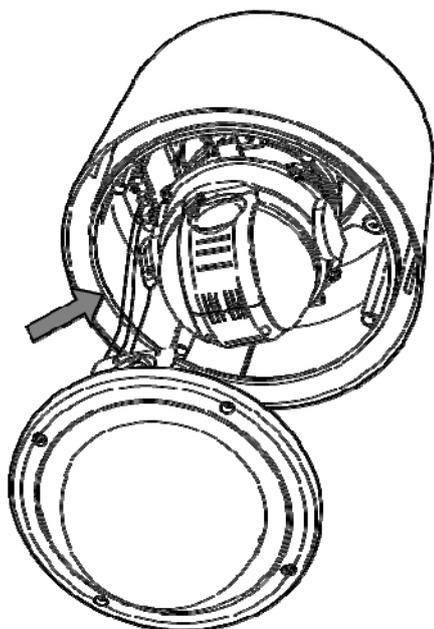
✎ To maintain the best sealing, the torque of each screw must be in the range between 0.5 ~ 1.0 N·m (0.37 ~ 0.73 lbf·ft).

Cabling
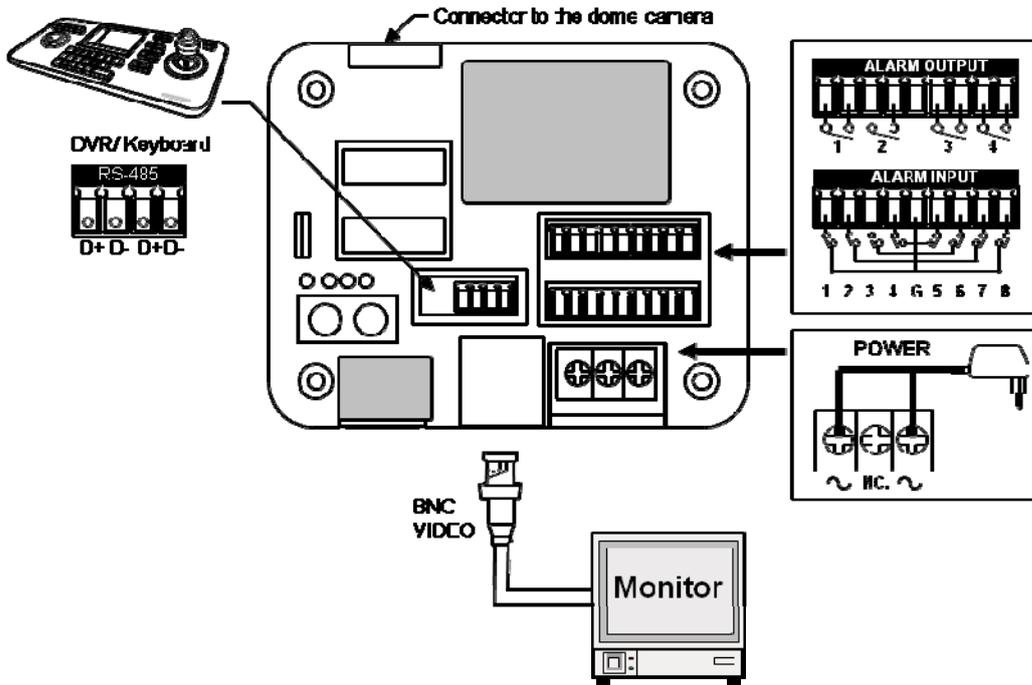
❑ Power Connection

  ● Please, check the voltage and current capacity of rated power carefully. Rated power is indicated in the back of main unit.

Rated Power	Input Voltage Range	Current Consumption
AC 24V	AC 19V ~29V	2.5 A

❑ RS-485 Communication

  ● For PTZ control, connect this line to keyboard and DVR. To control multiple cameras at the same time, RS-485 communication lines of them is connected in parallel as shown below.
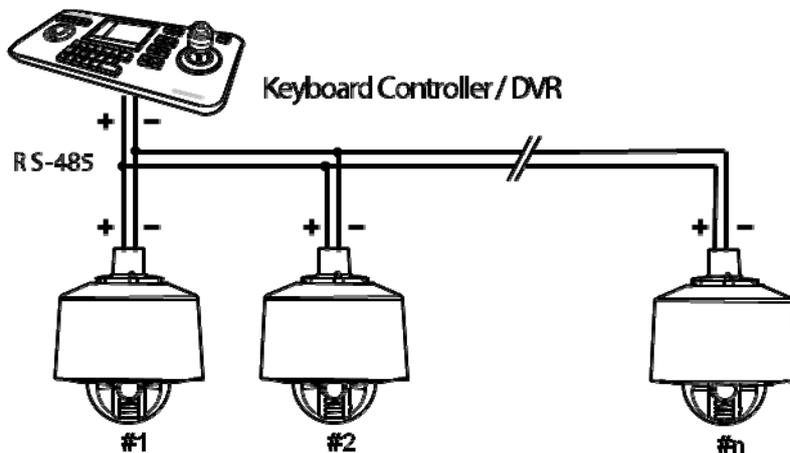
❑ Video Connection

- Connect with BNC coaxial cable.

❑ Alarm Input Connection

- Sensor Input

INTERNAL	IN 1
	IN 2
	IN 3
	IN 4
	GND
	IN 5
	IN 6
	IN 7
	IN 8
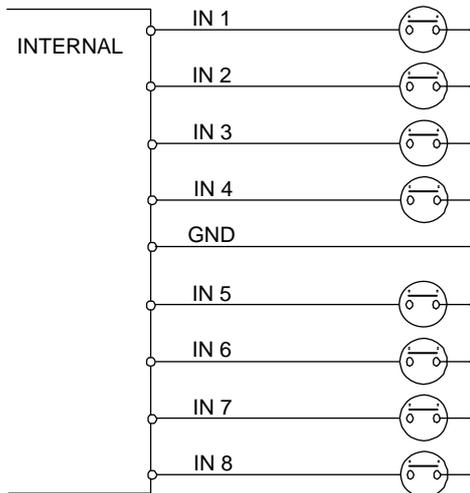
⌘ It is noted that short circuit between GND and Input pin means alarm activation.

If you want to use Alarm Input, the types of sensor must be selected in OSD menu. The sensor types are Normal Open and Normal Close If sensor type is not selected properly, the alarm can be activated reversely.

⊙ Normal Open (N.O)	Output Voltage is high state when sensor is activated
⊙ Normal Close(N.C)	Output Voltage is high state when sensor is not activated

- Alarm Output

| Internal | Relay Out | | Max DC30V/1A AC 125V/0.5A **Power** |
| | Relay Out | | |
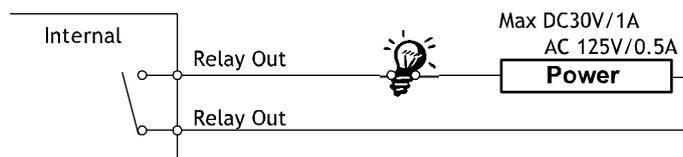
There are 4 Alarm Outputs and all of them are Relay contact type. Therefore, you do not have to care about polarity, AC/DC, and isolations between channels. Care must be taken for the power capacity of relay contact written above.

Check points before operation

- Before power is applied, please check the cables carefully.

- The camera ID of the controller must be identical to that of the camera to be controlled. The camera ID can be checked in the System Information of OSD Menu.

- If your controller supports multi-protocols, the protocol must be changed to match to that of the camera.

- If you changed camera protocol by changing DIP switch, the change will be effective after you reboot the camera.

- Since the operation method can be different for each controller available, refer to the manual for your controller if camera can not be controlled properly.

Preset and Pattern Function Pre-Check

- Check how to operate Preset, Group, Scan and Pattern function with controller or DVR in advance to operate camera function using them. (refer to your System keyboard Manual)

- If controller or DVR has no pattern button or function, use shortcut keys with preset numbers. For more information, refer to "Reserved Preset" in this manual.

Starting OSD Menu

- Function　　　　　Using the OSD menu, Preset, Pattern, Scan, Group and Alarm Input function can be configured for each application.

- Enter Menu　　　　<Go Preset> [95]

Reserved Preset

- Description　　　　Some Preset numbers are reserved to special functions.

- Function

<Go Preset> [95]	: Enters into OSD menu
<Go Preset> [131~134]	: Runs Pattern Function 1 ~ 4
<Go Preset> [141~148]	: Runs Scan Function 1 ~ 8
<Go Preset> [151~158]	: Runs Group Function 1 ~ 8
<Go Preset> [161~164]	: Sets Relay 1~4 Output to OFF
<Set Preset> [161~164]	: Sets Relay 1~4 Output to ON
<Go Preset> [170]	: Sets Camera BLC Mode to OFF
<Go Preset> [171]	: Sets Camera BLC Mode to HIGH
<Go Preset> [174]	: Sets Camera Focus Mode to AUTO
<Go Preset> [175]	: Sets Camera Focus Mode to Manual
<Go Preset> [176]	: Sets Camera Focus Mode to SEMI-AUTO
<Go Preset> [177]	: Sets Day & Night Mode to AUTO1
<Go Preset> [178]	: Sets Day & Night Mode to NIGHT
<Go Preset> [179]	: Sets Day & Night Mode to DAY
<Go Preset> [190]	: Sets OSD Display Mode to AUTO (Except Privacy Mask)
<Go Preset> [191]	: Sets OSD Display Mode to OFF (Except Privacy Mask)
<Go Preset> [192]	: Setting OSD Display Mode to ON (Except Privacy Mask)
<Go Preset> [193]	: Sets all Privacy Mask Display to OFF
<Go Preset> [194]	: Sets all Privacy Mask Display to ON
<Go Preset> [167]	: Zoom Proportional Jog ON
<Set Preset>[167]	: Zoom Proportional Jog OFF
<Go Preset>[200]	: Digital Zoom ON
<Go Preset>[201]	: Digital Zoom OFF

Preset

● Function
Max. 127 positions can be stored as Preset position. The Preset number can be assigned from 1 to 128, but 95 is reserved for starting OSD menu.

Camera characteristics (i.e. White Balance, Auto Exposure) can be set up independently for each preset and they are adjusted by using OSD menu. Four relay outputs can be controlled in conjunction with one Preset.

● Set Preset
<Set Preset> [1~128]

● Run Preset
<Go Preset> [1~128]

● Delete Preset
To delete Preset, use OSD menu.

Scan

● Function
By using Scan function, you can make camera to move between 2 Preset positions repeatedly. When Scan function runs, camera moves from the preset assigned as the 1st point to the preset assigned as the 2nd point in CW(Clockwise) direction. Then camera moves from the preset assigned as the 2nd point to the preset assigned as the 1st point in CCW(Counterclockwise) direction.
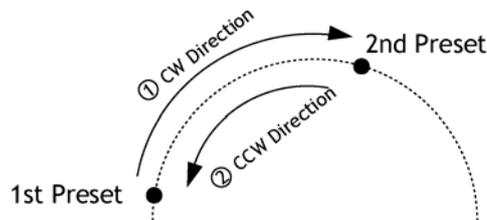
In case that the preset assigned as the 1st point is same as the preset assigned as the 2nd point, camera turns on its axis by 360° in CW(Clockwise) direction and then it turns on its axis by 360° in CCW(Counterclockwise) direction.

Speed can be set up from 1°/sec to 180°/sec.

● Set Scan
To set Scan, use OSD menu.

● Run Scan
Method1) <Run Scan> [Scan NO.] [Enter]

Method2) <Go Preset> [Scan NO.+140]   ex) Run Scan 2 : <Go Preset> [142]

● Delete Scan
To delete Scan, use OSD menu.

Pattern

- **Function**

  Pattern Function is that a camera memorizes the path (mostly curve path) by joystick of controller for assigned time and revives the path exactly as it memorized.

  4 Patterns are available and Maximum 1000 communication commands can be stored in a pattern.

- **Set Pattern**

  Pattern can be created by one of following two methods.

  Method 1) <Set Pattern> [Pattern NO.]

  ○ Pattern editing screen is displayed as bellow.

  ```
  EDIT PATTERN 1
  □□□□□□□□□□□□□□□□□□□□□□



  [NEAR:SAVE / FAR:DELETE]
                  0/0/x1/N
  ```

  ○ Movement by Joystick and preset movement can be memorized in a pattern.

  ○ The rest memory size is displayed in progress bar.

  ○ To save the recording, press **NEAR** key and to cancel, press **FAR** key.

  Method 2) OSD Using OSD Menu: See the section "How to use OSD Menu".

- **Run Pattern**

  Method 1) <Run Pattern> [Pattern NO.] ex) Run Pattern 2 : <Run Pattern> [2] [Enter]   [Enter]

  Method 2) <Go Preset> [Pattern NO.+130]   ex) Run Pattern 2: <Go Preset> [132]

- **Delete Pattern**

  Use OSD menu to delete a Pattern.

✗ When the pattern is saved or executed, the PAN/TILT is operated with Auto Flip OFF mode.

Group

● Function

The Group function allows running sequence of Presets, Pattern and/or Scans. Max 8 Group can be stored. Each Group can have max 20 action entities which can be preset, pattern or Scan. Preset speed can be set up and the repeat number of Pattern & Scan can be set up in Group setup. Dwell time between actions can be set up also.
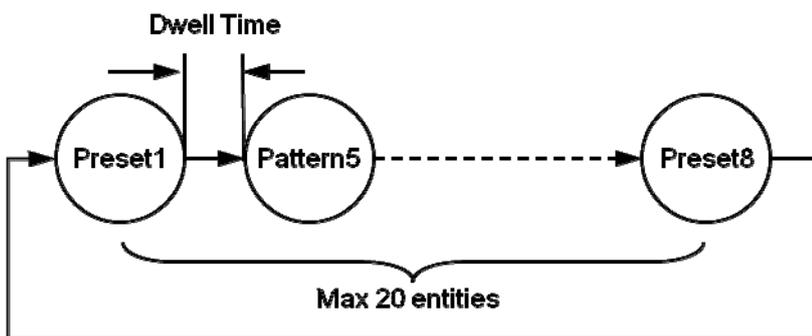
● Set Group

Use OSD Menu to create a Group.

● Run Group

Method1) <Run Group> [Group NO]
[Enter]

Method2) <Go Preset> [Group NO.+150]   ex) Run Group 7 : <Go Preset> [157]

● Delete Group

Use OSD Menu to delete.

Schedule

- Function

The Schedule function allows running an appropriate function like Preset, Scan, Group, Pattern, Home move at designated day and time. For example, if you setup a rule Tuesday at 9:00AM and Preset 1 (say Main Gate), the camera will move to main gate every Tuesday at 9:00AM. If you choose Weekday, camera will move to Main gate everyday except weekend.

It is noted that due to the real time clock, the time data will be kept regardless of blackout. The initial time and day setup is essential to proper Schedule function.

- Set Schedule   Use OSD Menu to create a Schedule

- Run Schedule   Use OSD Menu of Schedule Master Enable

- Delete Schedule   Use OSD Menu to delete.

Other Functions

- **Preset Lock**

    This function is made to protect preset data from unauthorized overwriting. If Preset Lock is ON, Preset save command using Hot Key is disabled while Preset save using OSD Menu is acceptable.

- **Power Up Action**

    This function enables to resume the last action executed before power down. Most of actions such as Preset, Pattern, Scan and Group are available for this function but Jog actions are not available to resume.

- **Auto Flip**

    In case that tilt angle arrives at the top of tilt orbit (90°), zoom module camera keep moving to opposite tilt direction (180°) to keep tracing targets. As soon as zoom module camera passes through the top of tilt direction(90°), images should be reversed automatically and F appears in screen. If this function is set to OFF, tilt movement range is 0 ~ 90°.

- **Parking Action**

    This function enables to locate the camera to specific position automatically if operator doesn't operate the controller for a while. The Park Time can be defined as an interval from 5 seconds to 4 hours.

- **Alarm Input**

    8 Alarm Inputs are used. If an external sensor is activated, camera can be set to move to corresponding preset position. It is noted that the latest alarm input is effective if multiple sensors are activated.

- **Alarm Output**

    There are 4 Ch. of Alarm Outputs and all of them can be assigned to a certain Preset number. For example, if you assign Preset 5 to AO2, calling Preset 5 result in turning On of AO2.

- **Privacy Zone Mask**

    To protect privacy, MAX. 8 Privacy Masks can be created on the arbitrary position to hide objects such as windows, shops or private house. With Spherical Coordinates system, powerful Privacy Zone Mask function is possible.

- **GENERAL/SPECIAL Image Setup**

    WB (White Balance) and AE (Auto Exposure) can be set up independently for each preset. There are 2 modes, "General" mode & "Special" mode. The General mode means that WB or AE can be set up totally and simultaneously for all presets in " CAMERA SETUP" menu. The Special mode means that WB or AE can be set up independently or separately for each preset in each preset setup menu. Each Special WB/AE value should activate correspondingly when camera arrives at each preset location.

    During jog operation, General WB/AE value should be applied. All Special WB/AE value will not be changed although General WB/AE value change.

- **Semi Auto Focus**

    This mode exchanges focus mode automatically between Manual Focus mode and Auto Focus mode by operation. Manual Focus mode activates in preset operation and Auto Focus mode activates during jog operation. With Manual mode at presets, Focus data is memorized in each preset in advance and camera calls focus data in correspondence with presets as soon as camera arrives at a preset. It should shorten time to get focuses.

    Focus mode changes to Auto Focus mode automatically when jog operation starts.

OSD Display of Main Screen

```
● LABEL12345          PRESET1 ●

  01/DEC/2008            O:1234
  00:00:01            I:12345678
● CAM  1            ● 15/4/x1/N

    [F] CAM  1
```

Preset Label ── ● LABEL12345
Action Title ── PRESET1 ●
Date/Time ── 01/DEC/2008 00:00:01
Alarm Information ── O:1234 I:12345678
Camera ID ── CAM 1
P/T/Z Information ── 15/4/x1/N
Image Flip
Camera ID
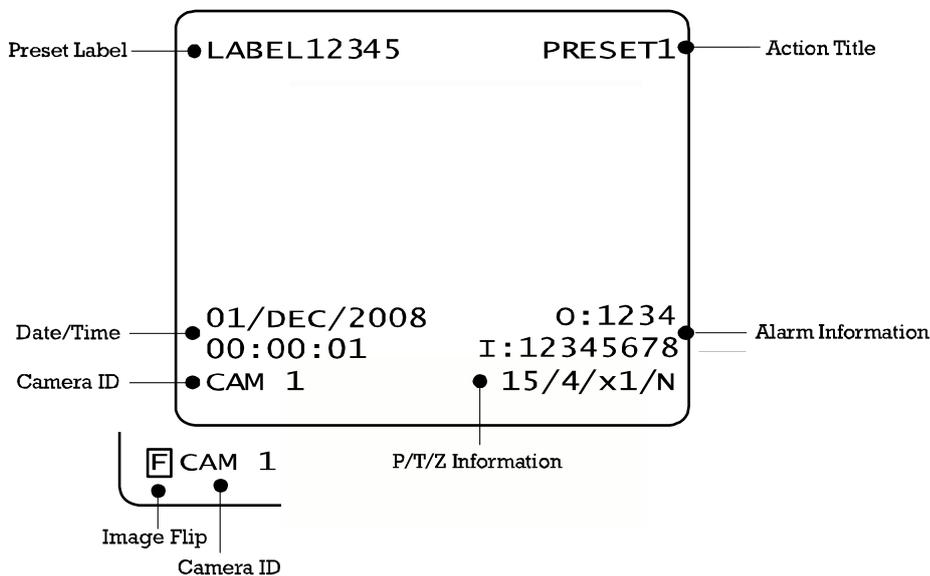
- **P/T/Z Information**   Current Pan/Tilt angle in degree, zoom magnification and a compass direction.

- **Camera ID**   Current Camera ID(Address).

- **Action Title**   Followings are possible Action Titles and their meaning.

  "SET PRESET ×××"

  "PRESET ×××"

  "PATTERN ×"

  "AUP×/PRESET ×××"

  "UNDEFINED"

- **Preset Label**   The Label stored for specific Preset.

- **Alarm Information**   This information shows current state of Alarm Input. The "I" means Input and "O" is output. If an Input is **ON** state it will show the number of input. If an Input is **OFF** state, '–' will be displayed. In the same way "O:1" means output 1 is ON "O:-" is OFF.

  Ex) When Point 2 of inputs are **ON,** and Output 1 is On,   OSD will show as below

  ```
          O:1---
      I:-2------
  ```
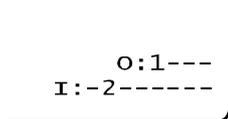
- **Image Flip**   Shows that images are currently reversed by Auto Flip Function.

- **Date/Time**   Displays Current Date and Time.

General Rules of Key Operation for Menu

- The menu items surrounded with <   > always has its sub menu.

- For all menu level, to go into sub menu, press **NEAR** key.

- To go to up-one-level menu, press **FAR** key.

- To move from items to item in the menu, use joystick in the **Up/Down** or **Left/Right**.

- To change a value of an item, use **Up/Down** of the joystick in the controller.

- Press **NEAR** key to save values and Press **FAR** key to cancel values.

Main Menu

```
ROOT MENU
----------------------
→<SYSTEM INFORMATION>
 <DISPLAY SETUP>
 <MOTION SETUP>
 <FUNCTION SETUP>
 <CAMERA SETUP>
 <SYSTEM SETUP>
 <SYSTEM INITIALIZE>


 EXIT
```

- System Information   Shows info and current configuration.

- Display Setup   Enable/Disable of OSD display on Main Screen.

- Motion Setup   Setup for motion related settings

- Function Setup   Setup for various functions such as Preset, Auto Pan, Pattern, Group and Schedule.

- Camera Setup   Configure Camera related functions and data

- System Setup   Configure for Basic system setup.

- System Initialize   Initializes system configuration and sets all data to factory default configuration.

System Information

```
SYSTEM INFORMATION
--------------------------
 FIRMWARE VER    1.011P
 COLOR SYSTEM    NTSC
 PROTOCOL        SAMSUNG
 BAUD RATE       9600
 ADDRESS         255


→BACK
 EXIT
```

- Firmware Ver.   Shows current firmware version of camera.

- Color System   Shows current analog video system of the camera.

- Protocol   Shows current Protocol for PTZ control

- Baud rate   Shows current Baud rate of PTZ control.

- Address   Shows current Camera ID for PTZ control.

Display Setup

```
DISPLAY SETUP
--------------------------
→CAMERA ID         ON
 PTZ INFORMATION   AUTO
 ACTION TITLE      AUTO
 RESET LABEL       AUTO
 ALARM I/O         AUTO
 DATE/TIME         ON
 <PRIVACY ZONE>

 BACK
 EXIT
```

This menu defines Enable/Disable of OSD display on Main Screen. If an item is set to be AUTO, the item is displayed only when the value of it is changed.

- Camera ID   [ON/OFF]

- PTZ Information   [ON/OFF/AUTO]

- Action Title   [ON/OFF/AUTO]

- Preset Label   [ON/OFF/AUTO]

- Alarm I/O   [ON/OFF/AUTO]

- Date/Time   [ON/OFF]

- <Privacy Zone>   Start Privacy Zone Mask setup Menu.

PRIVACY ZONE MASK Setup

```
PRIVACY ZONE
----------------------
→MASK NO        1
                UNDEFINED
 DISPLAY        OFF
 CLEAR MASK     CANCEL
 <EDIT MASK>


 BACK
 EXIT
```
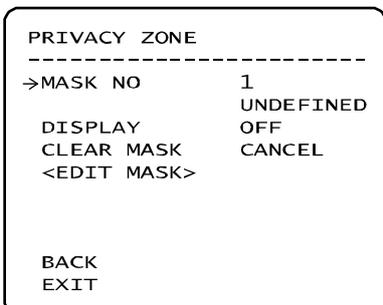
Select area in image to mask.

- ● Mask No   [1~8] 36x, 37x model, [1~4] 30x model

  Select Mask number. If the selected mask has already data, camera moves as it was set. Otherwise, "UNDEFINED" will be displayed under "Mask NO".

- ● Display   [ON/OFF]

  Sets if camera makes mask shows or not on images.

- ● Clear Mask   [CANCEL/OK]

  Deletes data in the selected mask NO.

❏ Privacy Zone Area Setup

```
EDIT MASK 1
----------------------




 MOVE TO TARGET POSITION
 [NEAR:SELECT/FAR:CANCEL]
                0/0/X1/N
```
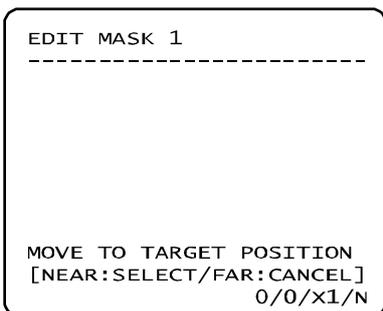
Move camera to area to mask. Then the menu to adjust mask size will be displayed.

✎ If the tilt angle is located in the range between 70° to 110°, you can not set up privacy zone mask.

✎ If tilt angle over 110° (image flipped region) is designated, camera will automatically move to identical poison by changing tilt angle less than 70° and moving pan angle 180 relatively.

❏ Privacy Zone Size Adjustment

```
EDIT MASK 1
----------------------




 [ZOOM : COLOR CHANGE]
 [◀▶:ADJUST MASK WIDTH]
 [▲▼:ADJUST MASK HEIGHT]
 [NEAR:SAVE / FAR:CANCEL]
```
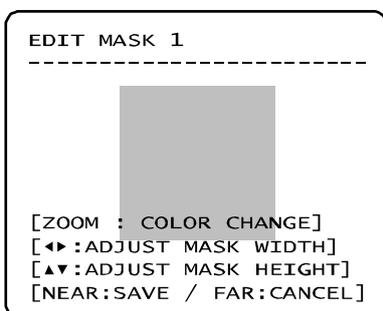
Adjust mask size. Use joystick or arrow buttons to adjust mask size.

- ● ◀ ▶ (Left/Right)   Adjusts mask width.
- ● ▲ ▼ (Up/Down)   Adjusts mask height.
- ● Zoom In/Out   Change Color of mask (36x, 37x Only).

✎ It is noted that during PAN/TILT control like jog action, the object behind the privacy mask can be disclosed in a short period of time.

✎ To hide a certain zone completely regardless of high speed PT motions, it is recommended that the size of mask must be 20% bigger than original target size

Motion Setup

```
 MOTION SETUP
 -----------------------
→PRESET LOCK       OFF
 PWR UP ACTION     ON
 AUTO FLIP         ON
 JOG MAX SPEED     140/SEC
 JOG DIRECTION     INVERSE
 FRZ IN PRESET     OFF
 <PARKING ACTION SETUP>
 <ALARM INPUT SETUP>
 BACK
 EXIT
```

Setup the general functions of Pan/Tilt motions.

● Preset Lock   [ON/OFF]

If Motion Lock is set to ON, it is impossible to set up and delete Preset, Scan, Pattern and Group. It is possible only to run those functions. To set up and delete those functions, enter into OSD menu.

● Power Up Action   [ON/OFF]

Refer to **Other Functions** section in Page 22.

● Auto Flip   [ON/OFF]

Refer to **Other Functions** section in Page 22.

● Jog Max Speed   [2°/sec ~200°/sec]

Sets maximum jog speed. Jog speed is inversely proportional to ratio of zoom. As zoom magnification goes up, pan/tilt speed goes down.

● Jog Direction   [INVERSE/NORMAL]

If you set this to ´Normal´, the view in the screen is moving same direction with jog tilting. If ´Inverse´ is selected, the view in the screen is moving reversely.

● Freeze in Preset   [ON/OFF]

At start point of preset movement, camera starts freezing the image of start point. Camera keeps displaying the image of start point during preset movement and does not display the images which camera gets during preset movement. As soon as camera stops at preset end point, camera starts displaying live images which it gets at preset end point.

❑ Parking Action Setup

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



 BACK
 EXIT
```

If Park Enable is set to ON, camera runs assigned function automatically if there is no PTZ command during assigned "Wait Time".

● Park Enable   [ON/OFF]

● Wait Time   [5 seconds ~ 4 hour]

The time is displayed with "hh:mm:ss" format and you can change this by 1 sec unit.

● Park Action   [HOME/PRESET/PATTERN/AUTOPAN/GROUP]

Ex) If HOME is selected for Park Action, camera will move to home position when there is no PTZ command during assigned "Wait Time."

❑ Alarm Input Setup

```
 ALARM INPUT SETUP
 --------------------
→ALARM1 N.O    PRESET1
 ALARM2 N.O    NOT USED
 ALARM3 N.O    NOT USED
 ALARM4 N.O    NOT USED
 ALARM5 N.C    PRESET1
 ALARM6 N.O    NOT USED
 ALARM7 N.O    NOT USED
 ALARM8 N.O    NOT USED
 BACK
 EXIT
```

Match the Alarm sensor input to one of Preset positions. If an external sensor is activated, camera will move to corresponding preset position when this item is predefined.

● Alarm Type   [Normal OPEN(N.O) / Normal CLOSE](N.C)]

Sets sensor input type.

● Alarm Action   [NOT USED/HOME/PRESET 1~128/GROUP 1~8, PATTERN1~4, GROUP 1~4]

For each Alarm input, you can assign counteraction functions (Preset, Auto Pan, Pattern, Group).

Function Setup

```
FUNCTION SETUP
-------------------------
→<PRESET SETUP>
 <AUTO PAN SETUP>
 <PATTERN SETUP>
 <GROUP SETUP>
 <SCHEDULE SETUP>


 BACK
 EXIT
```
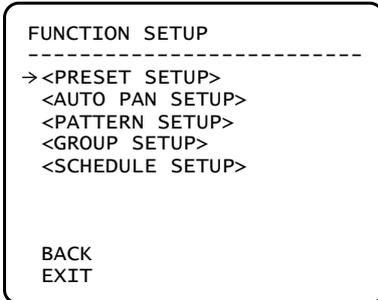
Configure 5 Special Functions with this menu

● Preset Setup — 127 Presets from the number 1 to 128 can be assigned excluding preset 95 reserved for Menu.

● Auto Pan Setup — Up to 8 Auto Pans are available, which makes camera to move slowly between two preset points.

● Pattern Setup — Up to 4 patterns can be stored in the dome.

In this function, path data created by manual move of Joystick are recorded and you can playback the identical path automatically whenever required.

● Group Setup — Up to 8 Groups can be defined.

In a Group, max 20 entities are assigned from any combinations of Preset/Auto Pan/Pattern. If you run a Group, camera will execute each entry sequentially.

● Schedule Setup — 7 rules of Schedule can be assigned by day and time. Appropriate actions (such as Home, Preset, Auto Pan, Pattern and Group) can be defined for each rule. Also, it is possible to use Weekday and Weekend in a rule to make it simple.

PRESET Setup

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

 <EDIT SCENE>
 <EDIT LABEL> WINDOWS
 CLR PRESET   CANCEL
 CAM ADJUST   GENERAL
 ALARM OUT    ----

 BACK
 EXIT
```

● Preset Number

[1~128]

If a selected preset is already defined, camera moves to pre-defined position and preset characteristics such as Label and Relay Outputs show on monitor. If a selected preset is not defined, "UNDEFINED" shows on monitor.

● Edit Preset Scene

Redefine current Preset scene position (i.e. PTZ).

● Edit Preset Label

Edits Label to show on monitor when preset runs. MAX. 10 alphabets are allowed.

● Clear Preset

[CANCEL/OK]

Delete current Preset data

● CAM Adjust

[GENERAL/SPECIAL]

WB(White Balance) and AE(Auto Exposure) can be set up independently for each preset. There are 2 modes, "General" mode & "Special" mode. The General mode means that WB or AE can be set up totally and simultaneously for all presets in "CAMERA SETUP" menu.

The Special mode means that WB or AE can be set up independently or separately for each preset in each preset setup menu. Each Special WB/AE value should activate correspondingly when camera arrives at each preset location. During jog operation, General WB/AE value should be applied.

All Special WB/AE value should not change although General WB/AE value changes. If "Special" is selected, Menu to set WB/AE shows on monitor.

● Alarm out

State of four alarm outputs can be freely controlled in conjunction with Preset run. The character "- " means OFF state and the number representing each bit means ON.

Ex) If it is set to be -23-, Output relay 2, 3 will be ON and 1, 4 will be OFF, when you run this Preset.

❑ Edit Preset Scene

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




MOVE TO TARGET POSITION
[NEAR:SAVE / FAR:CANCEL]
            0/0/x1/N
```
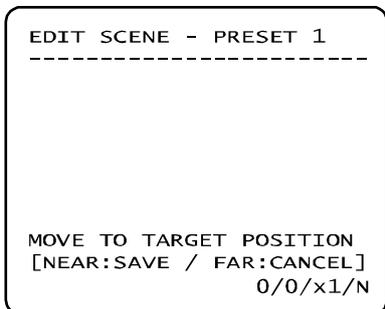
① Using joystick, move camera to desired position.

② By pressing **NEAR** key, save current PTZ data.

③ Press **FAR** key to cancel.

❑ Edit Preset Label

```
EDIT LABEL  - PRESET 1
-------------------------
→[█        ]
   ----------
 1234567890  OK
 ABCDEFGHIJ  CANCEL
 KLMNOPQRST
 UVWXYZabcd
 efghijklmn
 opqrstuvwx
 yz<>-/:. ←
```
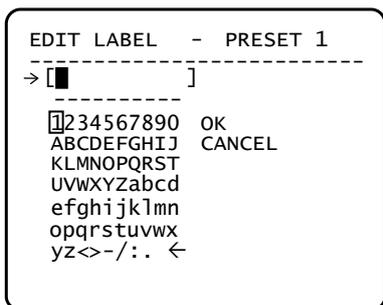
① Edits label to show on monitor when camera arrives at presets. In Edit Label menu, a reverse rectangular is cursor. As soon as finishing selecting alphabet, cursor moves to the next digit.

```
[█                    ]
 ↑
Current Cursor Position
```

② Using **Left/Right/Up/Down** of joystick, move to an appropriate character from the Character set. To choose that character, press the **NEAR** key.

```
1234567890
ABCDEFGHIJ
KLMNOPQRST
UVWXYZabcd
efghijklmn
opqrstuvwx
yz<>-/:. ←
        ↑↑
         └── Back Space Char.
          └── Space Char.
```
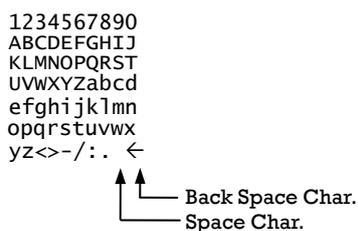
If you want to use blank, choose Space character (" "). If you want to delete a character before, use back space character (" ←").

③ If you complete the Label editing, move cursor to "OK" and press **NEAR** key to save completed label. To abort current change, move cursor to "Cancel" and press **NEAR** key.

Scan Setup

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

 SCAN SPEED 30/SEC
 CLEAR SCAN CANCEL


 BACK
 EXIT
```
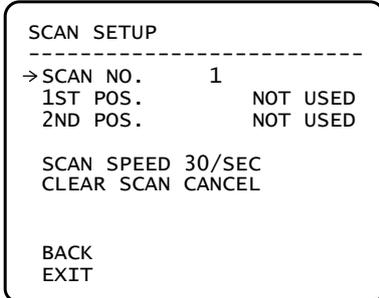
● Scan Number   [1~8]

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

● 1st Position   [PRESET 1~128]

  2nd Position

Set up the 2 position for Scan function. If a selected preset is not defined, "UNDEFINED" will be displayed as shown below.
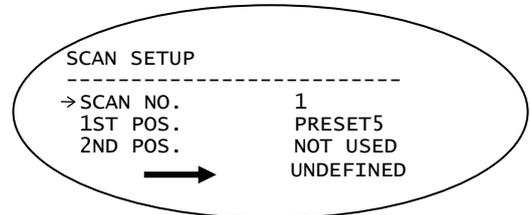
```
SCAN SETUP
--------------------------
→SCAN NO.        1
 1ST POS.         PRESET5
 2ND POS.         NOT USED
        ⟶         UNDEFINED
```

When scan function runs, camera moves from the preset assigned as the 1st point to the preset assigned as the 2nd point in CW(Clockwise) direction. Then camera moves from the preset assigned as the 2nd point to the preset assigned as the 1st point in CCW(Counterclockwise) direction. In case that the preset assigned as the 1st point is same as the preset assigned as the 2nd point, camera turns on its axis by 360° in CW direction and then it turns on its axis by 360° in CCW direction.

● Scan Speed   [1°/sec ~180°/sec]

Sets Scan speed from 1°/sec to 180°/sec.

● Clear Scan   [CANCEL/OK]

Deletes current Scan data.

Pattern Setup

```
PATTERN SETUP
-----------------------
→PATTERN NO.   1
              UNDEFINED
 CLR PATTERN   CANCEL
 <EDIT PATTERN>



 BACK
 EXIT
```
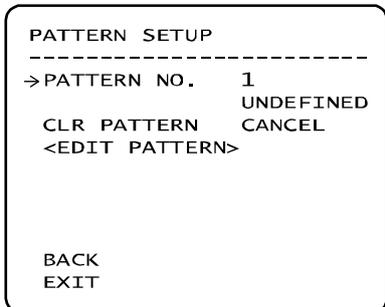
● Pattern Number   [1~4]

    Selects Pattern number to edit.

    If a selected   pattern number is not defined, "UNDEFINED" will be displayed under selected pattern number.

● Clear Pattern   [CANCEL/OK]

    Deletes data in current pattern

● Edit Pattern   Starts editing pattern.

❑ Edit Pattern

```
EDIT PATTERN 1
-----------------------




 MOVE TO START POSITION
 [NEAR:START/ FAR:CANCEL]
              0/0/x1/N
```
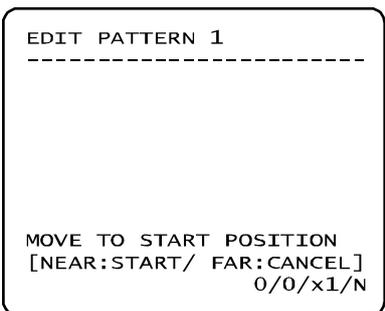
① By using Joystick, move to start position with appropriate zoom. To start pattern recording, press **NEAR** key. To exit this menu, press **FAR** key.

```
EDIT PATTERN 1
□□□□□□□□□□□□□□□□□□□□□□




 [NEAR:SAVE / FAR:DELETE]
              0/0/x1/N
```
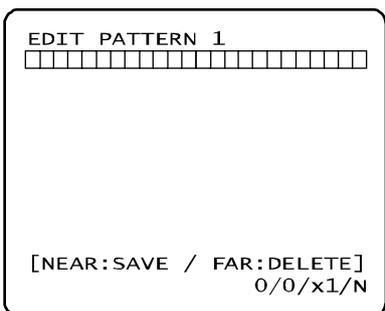
② Move camera with joystick of controller or run preset function to memorize the path (mostly curve path) in a selected pattern. The total memory size and the rest memory size is displayed in the form of bar. Maximum 1,000 communication commands can be stored in a pattern.

③ To save data and exit, press **NEAR** key. To cancel recording and delete record data, press **FAR** key.

Group Setup

```
 GROUP SETUP
 --------------------------
→GROUP NO.         1
                 UNDEFINED
 CLEAR GROUP      CANCEL
 <EDIT GROUP>



 BACK
 EXIT
```
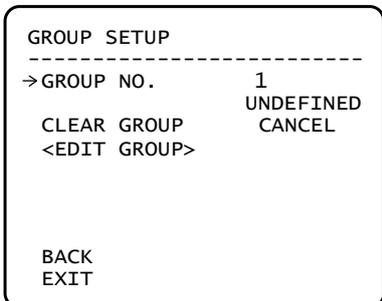
● Group Number   [1~8]

Selects Group number to edit.

If a selected Group number is not defined, "UNDEFINED" will be displayed under selected Group number.

● Clear Group   [CANCEL/OK]

Deletes data in current Group

● Edit Group   Starts editing Group.

❑ Edit Group

```
 EDIT GROUP       1
 --------------------------
→NO. ACTION NO. DWELL OPT
 --------------------------
  1 NONE
  2 NONE
  3 NONE
  4 NONE
  5 NONE
 --------------------------
 SAVE
 CANCEL         [NEAR:EDIT]
```
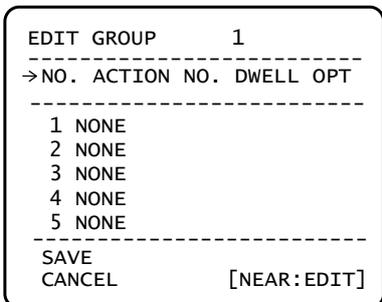
① Press **Near** key in "NO" list to start Group setup.

```
 EDIT GROUP       1
 --------------------------
 NO. ACTION NO. DWELL OPT
 --------------------------
→ 1 NONE
  2 NONE
  3 NONE
  4 NONE
  5 NONE
 --------------------------
 SAVE      [NEAR:EDIT ACT]
 CANCEL    [FAR :EDIT END]
```
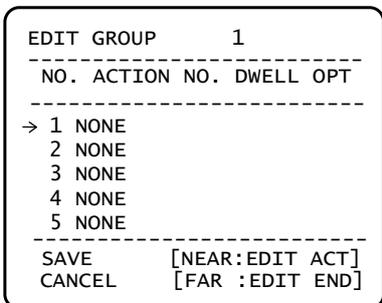
② Note that MAX. 20 Functions are allowed in a Group. Move cursor up/down and press **Near** key to set up.

```
 EDIT GROUP       1
 --------------------------
 NO. ACTION NO. DWELL OPT
 --------------------------
  1 NONE
  2 NONE
  3 NONE
  4 NONE
  5 NONE
 --------------------------
 SAVE    [◄►:MOVE CURSOR]
 CANCEL  [▲▼:CHANGE VAL.]
```
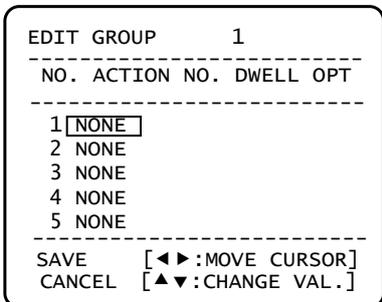
③ Set up Action, Dwell time and Option. Note that selected item is displayed in reverse. Move cursor **Left/Right** to select items and move cursor **Up/Down** to change each value.

● Action NO.   [NONE/PRESET/SCAN/PATTERN]

● DWELL   [0 second ~ 4 minutes]

Sets Dwell Time between functions

● OPT   Option. It represents preset speed (2~360) when preset is selected. It should be the number of repetition (1~255) when Pattern or Scan is selected for Action

```
EDIT GROUP      1
---------------------------
 NO. ACTION NO. DWELL OPT
---------------------------
 1 PRESET  [1]00:03 360
 2 NONE
 3 NONE
 4 NONE
 5 NONE
---------------------------
SAVE     [◄►:MOVE CURSOR]
CANCEL   [▲▼:CHANGE VAL.]
```

④ Set up items such as Action, NO., Dwell and OPT.

```
EDIT GROUP      1
---------------------------
 NO. ACTION ### DWELL OPT
---------------------------
→ 1 PRESET   1 00:03 360
  2 NONE
  3 NONE
  4 NONE
  5 NONE
---------------------------
SAVE      [NEAR:EDIT ACT]
CANCEL    [FAR :EDIT END]
```

⑤ After finishing setting up an Action, press **Near** key to one-upper-level menu (Step ②). Move cursor **Up/Down** to select Action number and repeat Step ② ~ Step ④ to edit selected Group.

```
EDIT GROUP      1
---------------------------
 NO. ACTION ### DWELL OPT
---------------------------
 1 1 PRESET   1 00:03 360
 2 NONE
 3 NONE
 4 NONE
 5 NONE
---------------------------
→SAVE
 CANCEL
```

⑥ After finishing setting up all Actions, press **FAR** key to exit. Then cursor should be moved to "SAVE." Press **Near** key to save data.

Schedule Setup

```
  SCHEDULE SETUP
  ---------------------------
→ MASTER ENABLE           ON
    DAY TIME  ACT  NO   ON
  1 UNDEFINED
  2 UNDEFINED
  3 UNDEFINED
  4 UNDEFINED
  5 UNDEFINED
  6 UNDEFINED
  7 UNDEFINED
  BACK
```

● Master Enable   [ON/OFF]

        Decide whether Schedule function is active or not.

● Clear Schedule   [CANCEL/OK]

        Delete all data in current Menu

● Edit Schedule   Start editing Schedule.

❑ Edit Schedule

```
  SCHEDULE SETUP
  ---------------------------
  MASTER ENABLE           ON
    DAY TIME  ACT  NO   ON
→ 1 UNDEFINED
  2 UNDEFINED
  3 UNDEFINED
  4 UNDEFINED
  5 UNDEFINED
  6 UNDEFINED
  7 UNDEFINED
  BACK
```

④ After move the Cursor to the number by using **Up/Down keys**, **press** "Near"(Enter) Key to edit.

⑤ Each field can be selected by **Left/Right** keys and the values in the field are changed using **Up/Down** keys.

    The meaning of each value:

DAY	Days: MON > TUE > WED> THU > FRI > SAT > SUN
	WKD: Weekday
	ALL: All days(Everyday)
TIME	24hour Format
ACT	PRS(Preset), SCN(Scan), PTN(Pattern), GRP(Group)
	HOM(Home)
ON/OFF	Decide to make this rule effective or not

```
  SCHEDULE SETUP
  ---------------------------
  MASTER ENABLE           ON
    DAY TIME ACT   NO   ON
→ 1 [MON] 00:00 HOM      OFF
  2 UNDEFINED
  3 UNDEFINED
  4 UNDEFINED
  5 UNDEFINED
  6 UNDEFINED
  7 UNDEFINED
  BACK
```

If you finish a rule, press **Near** key to select another rule.

Repeat this procedure to fill up the schedule in mind.

⑥ Example: see left setup.

    - The second rule means camera will move to Preset 12 position at 7:35 on every Wednesday.

* Note: If there are rules conflicts to each other, the higher number is, the higher priority has.

* Note: If you assign undefined function, there will be no action.

* Hint: Using reserved Preset, you can make various schedules. For example, PRS179 are PRS178 are Day and Night mode respectively. (Refer to Reserved Presets in page 17 of this manual.)

```
  SCHEDULE SETUP
  ---------------------------
  MASTER ENABLE           ON
    DAY TIME  ACT  NO   ON
→ 1 MON 01:20 HOM        ON
  2 WEN 07:35 PRS   12   ON
  3 THU 11:40 SCN    3   ON
  4 SAT 15:17 PAT    1   ON
  5 WEK 23:00 HOM        ON
  6 UNDEFINED
  7 UNDEFINED
  BACK
```

CAMERA SETUP

Setup the general functions of zoom camera module

```
ZOOM CAMERA SETUP
-------------------------
→FOCUS MODE        SEMIAUTO
 DIGITAL ZOOM      ON
 IMAGE FLIP        OFF
 FLICKERLESS       OFF
 <WHITE BALANCE SETUP>
 <AUTO EXPOSURE SETUP>


 BACK
 EXIT
```
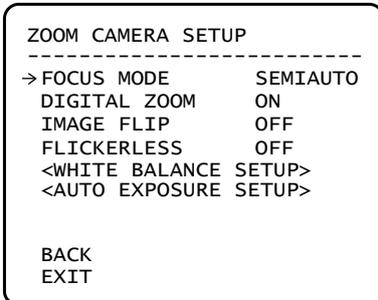
● Focus Mode   [AUTO/MANUAL/SEMIAUTO]

Sets camera focus mode.

○ SEMIAUTO Mode

This mode exchanges focus mode automatically between Manual Focus mode and Auto Focus mode. Manual Focus mode activates in preset operation and Auto Focus mode activates when jog operation starts.

With Manual mode at presets, Focus data is memorized in each preset in advance and camera calls focus data in correspondence with presets as soon as camera arrives at a preset.

● Digital Zoom   [ON/OFF]

Sets digital zoom function to ON/OFF. If this is set to OFF, optical zoom function runs but zoom function stops at the end of optical zoom magnification.

● Image Flip   [ON/OFF]

To display Upside down image.

● Flickerless   [ON/OFF]

Turn on or off the Flickerless function. In this function, AE mode becomes Shutter Priority mode and shutter speed value will be fixed to 1/100 sec.

❑ White Balance Setup

```
WB SETUP
-------------------------
→WB MODE        AUTO
 ●RED  ADJUST    ---
 ●BLUE ADJUST    ---




 BACK
 EXIT
```
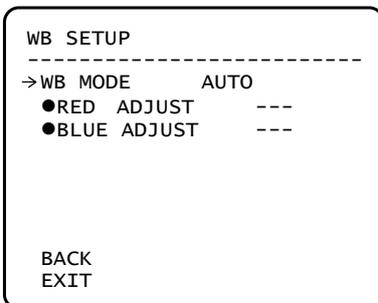
● WB Mode   [AUTO/MANUAL]

In Manual mode, Red and Blue level can be set up manually

● Red Adjust   [0~255]

● Blue Adjust   [0~255]

❑ Auto Exposure Setup – 30x, 37x

```
AE SETUP - GLOBAL
-------------------------
→BACK LIGHT      OFF
 DAY/NIGHT       AUTO
 BRIGHT          25
 IRIS            AUTO
 SHUTTER         ESC
 AGC             NORMAL
 DNR             MIDDLE
 SENS-UP         <AUTO>
 BACK
 EXIT
```

● Backlight

[OFF/HIGH/MIDDLE/LOW] *

[OFF/WDR/HLC] **

Sets Backlight related functions. Especially, HLC function helps removing high light portion of image (like head light beam in the dark) to get better contrast of the rest.

● Day/Night

[AUTO/DAY/NIGHT]

AUTO1 exchanges Day/Night mode faster than AUTO2.

● Brightness

[0~100]

Adjusts brightness of images. Iris, Shutter Speed and Gain are adjusted automatically in correspondence with this value.

● IRIS

[AUTO/MANUAL(0~100)] *

[AUTO/MANUAL(0~17)] **

If Iris is set to Auto, Iris should have highest priority in adjusting AE and Shutter Speed should be fixed.

If Iris is set to Manual, Iris should be fixed and Iris has lower priority in adjusting AE, in comparison with others.

● Shutter Speed

[ESC/A. Flicker/Manual]

If Iris is set to Manual and Shutter Speed is set to ESC, Shutter Speed should have highest priority. If Shutter Speed is set to A. Flicker, to remove Flicker, Shutter Speed should be set to 1/100 sec. for NTSC and 1/120 for PAL.

($\times 128$~1/120000 sec) *

($\times 256$~1/120000 sec) **

● AGC

[OFF/NORMAL/HIGH]

Enhances image brightness automatically in case that luminance level of image signal is too low.

● DNR

[OFF/LOW/MIDDLE/HIGH]

Enhances images by deducting noises when gain level of images is too high.

● SENS-UP

[AUTO(2~128x)/OFF] *

[AUTO(2~256x)/OFF] **

Activates Slow Shutter function when luminance of image (signal) is too dark.

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

* Note: Function or Range for 30x Model

** Note: Function or Range for 37x Model

❑ Auto Exposure Setup – 36x

```
 AE SETUP
 ------------------------
→WDR/BLC        ALL OFF
 DAY/NIGHT      AUTO
 AE MODE        AUTO
 ■ IRIS LEVEL   ---
 ■ GAIN LEVEL   ---
 ■ SHUTTER SPD  ---
 ■ BRIGHTNESS   ---

 BACK
 EXIT
```

● WDR/BLC   [ALL OFF / WDR ON / BLC ON]

Select WDR(Wide Dynamic Range) or BLC(Backlight Compensation) function. All OFF means turning off both functions.

● Day/Night   [AUTO/DAY/NIGHT]

AUTO exchanges Day / Night

● AE MODE   AUTO / MANUAL / IRIS / SHUTTER / BRIGHT

AUTO: Full Auto mode for AE function

MANUAL: In manual mode. IRIS, GAIN, SHUTTER SPEED can be changed in this mode.

IRIS: Iris priority mode. You can change IRIS while others are adjusted automatically.

SHUTTER: Shutter priority mode. Shutter speed can be changed while others are adjusted automatically.

BRIGHT: In this mode, you can assign AE value in terms of Brightness.

● IRIS   [Works when AE MODE is MANUAL or IRIS model]

Range: CLOSE/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. (18 steps)

● GAIN   [Works when AE MODE is MANUAL]

Enhances image brightness automatically in case that luminance level of image signal is too low.

Range: 3/0/2/4/6/8/10/12/14/16/18/20/22/24/26/28dB (16 steps)

● Shutter Speed   [Works when AE MODE is MANUAL or SHUTTER mode]

1/1,1/2,1/4,1/8,1/15,1/30,1/60,1/90,1/100,1/125,1/180, 1/250,1/350,1/500,1/725,1/1000,1/1500,1/2000,1/4000, 1/6000,1/10000

● Brightness   [Works when AE MODE is BRIGHT]

Adjusts brightness of images. Iris, Shutter Speed and Gain are adjusted automatically in correspondence with this value.   Range: 0~31 (32 steps)

System Setup

```
SYSTEM SETUP
--------------------------
→ <DATE/TIME SETUP>
  <RELAY TYPE>
  <PASSWORD>
  <SET HOME POSITION>
  <SET NORTH DIRECTION>
  LANGUAGE      ENGLISH


  BACK
  EXIT
```

● SYSTEM SETUP   You can set up Date/Time, ALARM OUTPUT RELAY, PASSWORD, HOME POSITION, NORTH POSITION.

● DATE   Date is displayed in dd/mmm/yyyy format. The day is automatically calculated when you set the date.

● TIME   Time is displayed in HH:MM:SS format.

● DATE/TIME Setup   After you press the Near key, each field can be selected by Left/Right keys and the values in the field are changed using Up/Down keys. To save the updated data, press the Near key again

```
DATE/TIME SETUP
------------------------
→DATE   01/JAN/2008(TUE)
 TIME   00:00:01(H/M/S)




 BACK
 EXIT
```

● TIME   Time is displayed in HH:MM:SS format.

● DATE/TIME Setup   After you press the Near key, each field can be selected by Left/Right keys and the values in the field are changed using Up/Down keys. To save the updated data, press the Near key again

✎ It is noted that the range of date setup is limited from 01/JAN/2000 to 31/DEC/2037.

```
RELAY TYPE SETUP
------------------------
→RELAY1 NORMAL OPEN
 RELAY2 NORMAL OPEN
 RELAY3 NORMAL OPEN
 RELAY4 NORMAL CLOSE



 BACK
 EXIT
```

● RELAY TYPE SETUP   Contact types of 4 Ch. RELAY OUTPUTS are defined. (NORMAL OPEN / NORMAL CLOSE)

NORMAL OPEN

NORMAL CLOSE

```
EDIT PASSWORD
------------------------
  [█   ]
  ----------
  1234567890    OK
  ABCDEFGHIJ    CANCEL
  KLMNOPQRST
  UVWXYZabcd   [DISABLE]
  efghijklmn
  opqrstuvwx
  yz<>-/:. ←
  ----------
```

● PASSWORD SETUP   You can define 4 characters long password. If this function is set to ENABLE, it is required to type this password whenever to enter OSD MENU.

It is noted that MASTER PSSWORD : "4321"

```
 SET HOME POSITION
 ------------------------




 MOVE TO TARGET POSITION
 [NEAR:SAVE /·FAR:CANCEL]
            0/0/x1/N
```
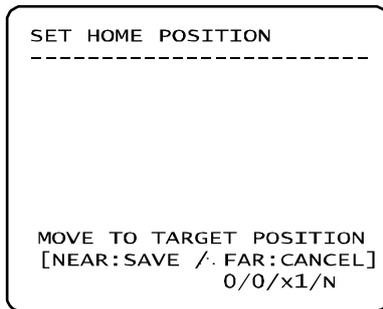
● SET HOME POSITION

HOME position means the origin of PAN angle calculation. The value of PAN angle displayed on the screen is based on this HOME position.

By using Joystick, move the camera to the desired position and press ENTER (NEAR/SAVE).

It is noted that Home is not effective to Tilt angle.

If you change the location of Home position, all horizontal locations of functions such as preset, pattern, Group, Scan, and privacy zone mask will be shifted based on changed Home position.

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




 MOVE TO TARGET POSITION
 [NEAR:SAVE /·FAR:CANCEL]
            0/0/x1/N
```
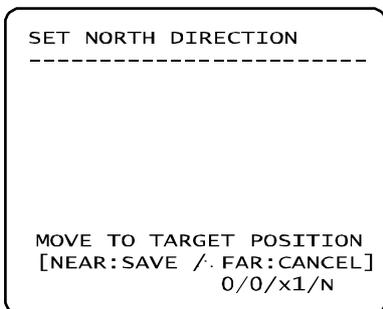
● SET NORTH DIRECTION

You can set up North direction.

By using Joystick, move the camera to the desired NORTH position and press ENTER (NEAR/SAVE).

The direction will be displayed in the screen

[PAN AXIS / TILT AXIS / ZOOM / DD]

DD is direction and will be displayed from:

N/NE/E/SE/S/SW/W/NW

● LANGUAGE

You can select a preferred Language of OSD display from 7 choices.

[ENGLISH/ESPAÑOL/FRANÇAIS/DEUTSCH/ITALIANO /РУССКИЙ/PORTUGUÊS]

After selecting a language, press Enter(NEAR) key.

TIP: Set Home Position

When you replace the camera block or the orientation of camera is changed due to maintenance operations, it is very difficult to maintain same pan orientation. Therefore, all function data depending on pan orientation such as preset, pattern, Group, Scan, and privacy zone mask are not useful any more accordingly. However, even in this case, you can reuse the data if you redefine **Set Home Position** on the previous Home position. It is recommendable to memorize the target scene of current Home position.

System Initialize

```
SYSTEM INITIALIZE
-----------------------
→CLEAR ALL DATA      NO
 ■CLR DISPLAY SET    NO
 ■CLR CAMERA SET     NO
 ■CLR MOTION SET     NO
 ■CLR FUNCTION SET   NO
 REBOOT CAMERA       NO
 REBOOT SYSTEM       NO

 BACK
 EXIT
```

- Clear All Data　　　Deletes all configuration data such as display, camera, motion setup, and so on.

- Clear Display Set　　Initializes Display Configuration

- Clear Camera Set　　Initializes Camera Configuration

- Clear Motion Set　　Initializes Motion Configuration

- Clear Function Se　　Deletes Preset Data, Scan Data, Pattern Data, Group Data and Schedule Data

- Reboot Camera　　　Reboots Zoom Camera module

- Reboot System　　　Reboots Speed Dome Camera

❑ Initial Configuration Table

● Display Configuration		● Camera Configuration	
Camera ID	ON	Focus Mode	SEMIAUTO
PTZ Information	AUTO	Digital Zoom	ON
Action Title	AUTO	Image Flip	ON
Preset Label	AUTO	White Balance	AUTO
Alarm I/O	AUTO	Backlight/BLC	ALL OFF
Date/Time	ON	Day/Night	AUTO
Privacy Zone	Undefined	AE Mode	AUTO
North Direction	Pan 0°	Iris Level	AUTO
		Shutter	ESC
● Motion Configuration		AGC	NORMAL
Preset Lock	OFF	DNR	MIDDLE
Power Up Action	ON	SENS-UP	AUTO
Auto Flip	ON		
Jog Max Speed	140°/sec	● Function Data	
Jog Direction	NORMAL	Preset 1~128	Undefined
Freeze In Preset	OFF	Scan 1~8	Undefined
Park Action	OFF	Pattern 1~4	Undefined
Alarm I/O Action	OFF	Group 1~8	Undefined
		Schedule 1~7	Undefined
● Communication Setup			
Protocol	AUTO		
Baud Rate	2400		

Specifications – 30x SPEED DOME CAMERA

Model		30x	
Camera	Signal Format	NTSC	PAL
	Image Sensor	1/4" Interline Transfer CCD	
	Total Pixels	410K Pixels [811(H) x 508(V)]	470K Pixels [795(H) x 596(V)]
	Effective Pixels	380K Pixels [768(H) x 494(V)]	440K Pixels [752(H) x 582(V)]
	Horizontal Res.	Color: 520 TV Line / BW:570 TV Line	
	S/N Ratio	50 dB	
	Zoom	×30 Optical Zoom, ×10 Digital Zoom (Max. ×300)	
	Focal length	F1.6(W) 3.4(T) f=3.3~ 99.0mm	
	Min. illumination	Color: 0.6Lux/F1.6 (50IRE) B/W: 0.1Lux /F1.6 (ICR On)	
	Day & Night	Auto / Day / Night(ICR)	
	Focus	Auto / Manual / SemiAuto	
	Iris	Auto / Manual	
	Shutter Speed	256×~2×, 1/60~1/120000s (27Step)	256×~2×, 1/50~1/120000 s (27 Step)
	AGC	Low/ Middle/ High/ Manual/ Off	
	White Balance	ATW[INDOOR(3,000K~6,500K), OUTDOOR(1,800K ~10,500K)]/ AWC/ MANUAL	
	BLC	ON/OFF	
	Flickerless	Selectable	
	DNR	LOW/ MIDDLE/ HIGH/ OFF	
Pan/Tilt	Range	Pan : 360°(Endless)	
		Tilt : 0~180° (Auto-Flip On) , 0° ~ 95° (Auto-Flip Off)	
	Pan/Tilt Speed	Preset : 360°/sec	
		Manual : 0.05 ~ 360°/sec (proportional to zoom)	
		Auto Pan : 1~ 180°/sec	
	Preset	127 Preset (Label, Camera Image Setting)	
	Pattern	4 Patterns, 1,000 commands/Pattern (about 5 minutes in Normal operation)	
	Scan	8 Scan	
	Group	8 Group (20 action entities per Group)	
	Schedule	7 Rules (Condition: Day, Time → Action: Preset, Scan, Group, Pattern)	
	Other Functions	Freeze In Preset, Auto Flip, Auto Parking, Power Up Action etc.	
General	Communication	RS-485	
	Protocol	Auto, Pelco-D, Pelco-P, Samsung selectable	
	Privacy Zone	8 Zone	
	Alarm Input	8 Input	
	Alarm Output	4 Relay Output	
	OSD	Menu / PTZ information etc Support 7 Languages: [ENGLISH/ ESPAÑOL/ FRANÇAIS/ DEUTSCH/ ITALIANO/ PУССКИЙ/ PORTUGUÊS]	
	Rated Power**	AC 24V 24W(Header OFF)/ 57W(Heater ON)	
	Dimension	Net (W×H ×D) 260 × 552 × 405 mm, 10.2 × 21.7 ×16 inch	
		Package (W×H×D) 605×400×500 mm, 23.8 ×15.7 ×19.7 inch	
	Weight	Net about 6 kg, 13.2 Lb	
		Package about 11 kg, 24.2 Lb	
	Operating Temp.	-45°C ~ 50°C (-49°F ~ 122°F)	

* Specifications of this product can be subjected to change without notice.
** Check the rated voltage and current capacity of power supply carefully.

■ Appearance

● Wall Mount

● Ceiling Mount

Specifications – 36x SPEED DOME CAMERA

Model		36x
Camera	CCD	1/4" EX-view HAD™ CCD
	Effective Pixels	Approx. 440,000 pixels
	Horizontal Res.	530 TV Line
	S/N Ratio	50 dB
	Zoom	×36 Optical Zoom, ×12 Digital Zoom(x432)
	Focal length	f=3.4mm(wide) ~ 122.4mm(tele), F1.6~F4.5
	Min. illumination	1/60s mode : 1.4lx(typical)(F1.6, 50IRE) 1/4s mode : 0.1lx(typical)(F1.6, 50IRE)
	Day & Night	Auto / Day / Night(ICR)
	Focus	Auto / Manual / SemiAuto
	Iris	Auto / Manual
	Shutter Speed	1/1~1/10,000s , 22 steps
	AGC	Auto/Manual(-3~28dB, 2dB steps)
	White Balance	Auto / Manual(Red, Blue Gain Adjustable)
	BLC	WDR, BLC ON/OFF
	Flickerless	Selectable
	Privacy Zone	8 Area
Pan/Tilt	Range	Pan : 360°(Endless)
		Tilt : 0~180° (Auto-Flip On) , 0° ~ 95° (Auto-Flip Off)
	Pan/Tilt Speed	Preset : 360°/sec
		Manual : 0.05 ~ 360°/sec (proportional to zoom)
		Auto Pan : 1~ 180°/sec
	Preset	127 Preset (Label, Camera Image Setting)
	Pattern	4 Pattern, 1000 commands(about 5 minute)/Pattern
	Scan	8 Scan
	Group	8 Group (20 action entities per Scan)
	Other Functions	Auto Flip, Auto Parking, Power Up Action etc.
General	Communication	RS-485
	Protocol	Auto, Pelco-D, Pelco-P, Samsung selectable
	Privacy Zone	8 Zone
	Alarm Input	8 Input
	Alarm Output	4 Relay Output
	OSD	Menu / PTZ information etc Support 7 Languages: [ENGLISH/ ESPAÑOL/ FRANÇAIS/ DEUTSCH/ ITALIANO/ РУССКИЙ/ PORTUGUÊS]
	Rated Power**	AC 24V 24W(Header OFF)/ 57W(Heater ON)
	Dimension	Net (W×H ×D) 260 × 552 × 405 mm, 10.2 × 21.7 ×16 inch
		Package (W×H×D) 605×400×500 mm, 23.8 ×15.7 ×19.7 inch
	Weight	Net about 6 kg, 13.2 Lb
		Package about 11 kg, 24.2 Lb
	Operating Temp.	-45°C ~ 50°C (-49°F ~ 122°F)

* Specifications of this product can be subjected to change without notice.

** Check the voltage and current capacity of rated power carefully.

■ Appearance

● Wall Mount
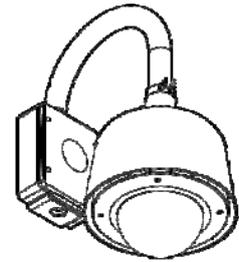
● Ceiling Mount
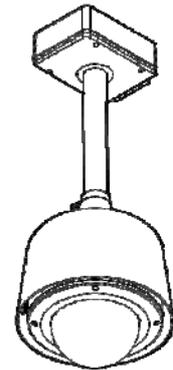
Specifications – 37x SPEED DOME CAMERA

Model		37x	
Camera	Signal Format	NTSC	PAL
	Image Sensor	1/4" Double Density Interline Transfer CCD	
	Total Pixels	410K Pixels [811(H) x 508(V)]	470K Pixels [795(H) x 596(V)]
	Effective Pixels	380K Pixels [768(H) x 494(V)]	440K Pixels [752(H) x 582(V)]
	Horizontal Res.	Color: 550 TV Line / BW:620 TV Line	
	S/N Ratio	50 dB	
	Zoom	×37 Optical Zoom, ×12 Digital Zoom (Max. ×444)	
	Focal length	F1.6(W) 3.5(T) f=3.5~129.5mm	
	Min. illumination	Color: 1.0Lux/F1.6 (50IRE) B/W: 0.1Lux /F1.6 (50IRE)	
	Day & Night	Auto / Day / Night(ICR)	
	Focus	Auto / Manual / SemiAuto	
	Iris	Auto / Manual	
	Shutter Speed	256×~2×, 1/60~ 1/120000 sec (27 Step)	256×~2×, 1/50~ 1/120000 sec (27 Step)
	AGC	Low/ Middle/ High/ Manual/ Off	
	White Balance	ATW/ AWC/ MANUAL/ INDOOR/ OUTDOOR (1,800K ~10,500K)	
	WDR, HLC	OFF/ WDR/ HLC	
	Flickerless	Selectable	
	DNR	LOW/ MIDDLE/ HIGH/ OFF	
Pan/Tilt	Range	Pan : 360°(Endless)	
		Tilt : 0~180˚ (Auto-Flip On) , 0˚ ~ 95˚ (Auto-Flip Off)	
	Pan/Tilt Speed	Preset : 360°/sec	
		Manual : 0.05 ~ 360°/sec (proportional to zoom)	
		Auto Pan : 1~ 180°/sec	
	Preset	127 Preset (Label, Camera Image Setting)	
	Pattern	4 Patterns, 1,000 commands/Pattern (about 5 minutes in Normal operation)	
	Scan	8 Scan	
	Group	8 Group (20 action entities per Group)	
	Schedule	7 Rules (Condition: Day, Time → Action: Preset, Scan, Group, Pattern)	
	Other Functions	Freeze In Preset, Auto Flip, Auto Parking, Power Up Action etc..	
General	Communication	RS-485	
	Protocol	Auto, Pelco-D, Pelco-P, Samsung selectable	
	Privacy Zone	8 Zone	
	Alarm Input	8 Input	
	Alarm Output	4 Relay Output	
	OSD	Menu / PTZ information etc Support 7 Languages: [ENGLISH/ ESPAÑOL/ FRANÇAIS/ DEUTSCH/ ITALIANO/ РУССКИЙ/ PORTUGUÊS]	
	Rated Power**	AC 24V 24W(Header OFF)/ 57W(Heater ON)	
	Dimension	Net (W×H ×D)	260 × 552 × 405 mm, 10.2 × 21.7 ×16 inch
		Package (W×H×D)	605×400×500 mm, 23.8 ×15.7 ×19.7 inch
	Weight	Net	about 6 kg, 13.2 Lb
		Package	about 11 kg, 24.2 Lb
	Operating Temp.	-45°C ~ 50°C (-49°F ~ 122°F)	

* Specifications of this product can be subjected to change without notice.
** Check the rated voltage and current capacity of power supply carefully.

■ Appearance

● Wall Mount

● Ceiling Mount

Dimension

Unit (mm)

● Wall Mount Bracket

● Ceiling Mount Bracket