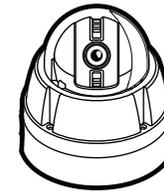


x12 Analog PTZ **WDR** In/Outdoor Camera

User's Manual



Ver. 1.0 / 2011.02

Correct Disposal of This Product (Waste Electrical & Electronic Equipment)

(Applicable in the European Union and other European countries with separate collection systems)

This marking on the product, accessories or literature indicates that the product and its electronic accessories (e.g. charger, headset, USB cable) should not be disposed of with other household waste at the end of their working life. To prevent possible harm to the environment or human health from uncontrolled waste disposal, please separate these items from other types of waste and recycle them responsibly to promote the sustainable reuse of material resources.

Household users should contact either the retailer where they purchased this product, or their local government office, for details of where and how they can take these items for environmentally safe recycling.

Business users should contact their supplier and check the terms and conditions of the purchase contract.

This product and its electronic accessories should not be mixed with other commercial wastes for disposal.



Safety Information



CAUTION
RISK OF ELECTRIC SHOCK.
DO NOT OPEN.



CAUTION:
TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK) NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.



Warning

This symbol indicates that dangerous voltage consisting a risk of electric shock is present within this unit.



Precaution

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 damage which may result in fire or electric shock hazard, do not expose this appliance to rain or moisture.

WARNING

2. Be sure to use only the standard adapter that is specified in the specification sheet. Using any other adapter could cause fire, electrical shock, or damage to the product.
3. Incorrectly connecting the power supply or replacing battery may cause explosion, fire, electric shock, or damage to the product.
4. Do not connect multiple cameras to a single adapter. Exceeding the capacity may cause abnormal heat generation or fire.
5. Securely plug the power cord into the power receptacle. Insecure connection may cause fire.
6. When installing the camera, fasten it securely and firmly. A falling camera may cause personal injury.
7. Do not place conductive objects (e.g. screw drivers, coins, metal things, etc.) or containers filled with water on top of the camera. Doing so may cause personal injury due to fire, electric shock, or falling objects.
8. Do not install the unit in humid, dusty, or sooty locations. Doing so may cause fire or electric shock.
9. If any unusual smell or smoke come from the unit, stop using the product. In such case, immediately disconnect the power source and contact the service center. Continued use in such a condition may cause fire or electric shock.
10. If this product fails to operate normally, contact the nearest service center. Never disassemble or modify this product in any way.
11. When cleaning, do not spray water directly onto parts of the product. Doing so may cause fire or electric shock.

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.

Important Safety Instructions

1. **Read these instructions.** - All these safety and operating instructions should be read before the product is operated.
2. **Keep these instructions.** - The safety, operating and use instructions should be retained for future reference.
3. **Heed all warnings.** - All warnings on the product and in the operating instructions should be adhered to.
4. **Follow all instructions.** - All operating and use instructions should be followed.
5. **Do not use this apparatus near water.** - For example: near a bath tub, wash bowl, kitchen sink, laundry tub, in a wet basement; near a swimming pool; etc.
6. **Clean only with dry cloth.** - Unplug this product from the wall outlet before cleaning. Do not use liquid cleaners.
7. **Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.** - Slots and Openings in the cabinet are provided for ventilation, to ensure reliable operation of the product, and to protect it from over-heating. The openings should never be blocked by placing the product on bed, sofa, rug or other similar surface. This product should not be placed in a built-in installation such as a bookcase or rack unless proper ventilation is provided and the manufacturer's instructions have been adhered to.
8. **Do not install near any heat sources such as radiators, heat registers, 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 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 spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.**



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1 Product & Accessories

⊠ Please check if all the camera and accessories are included in the package.

1 Main Body

Camera module, screws, terminal block slot and DIP switches are included.

2 Surface Mount Bracket

- It is used when installing the camera right on to the ceiling.
- To install the camera with the surface mount bracket, the bracket needs to be separated from the main body, then needs to be re-assembled the bracket and the main body according to the order.

3 Screw & Plastic Anchor

- Screws are used to fix the surface mount bracket to the ceiling.
- Plastic anchors are used to tighten the screws to the hole by inserting them into the holes in advance.

4 Terminal Block

Power, video, communication and alarm input cables are connected through the terminal blocks.

5 Torx Wrench

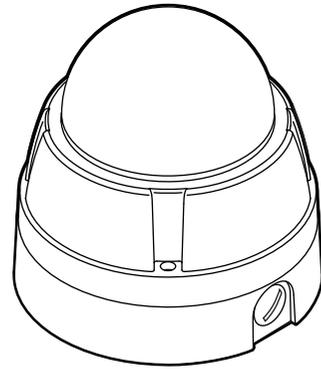
It is used to screw/unscrew the fixed screws on the main body.

6 Rubber Gasket

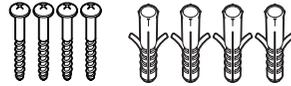
It is installed between the surface mount bracket and wall/wall mount bracket to prevent the water leakage.

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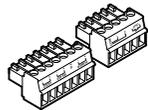
Please read the manual carefully before installing.



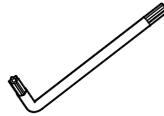
1 Main Body + 2 Surface Mount Bracket



3 Screw & Plastic Anchor-4pcs



4 Terminal Block x2: 5P+7P



5 Torx Wrench

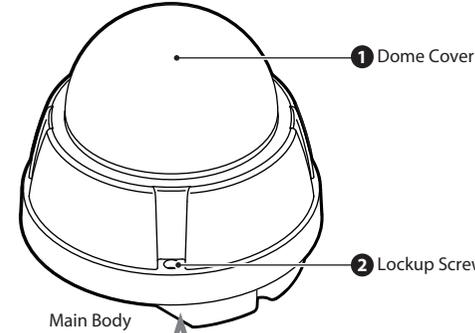


6 Rubber Gasket



7 Manual

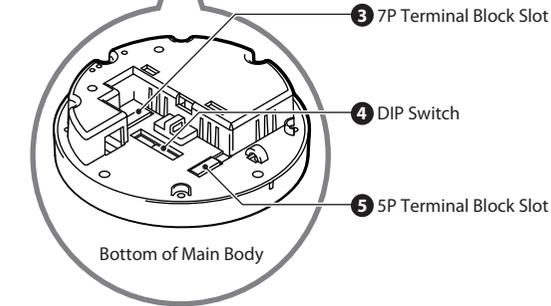
Parts Name & Functions



1 Dome Cover

2 Lockup Screw

Main Body

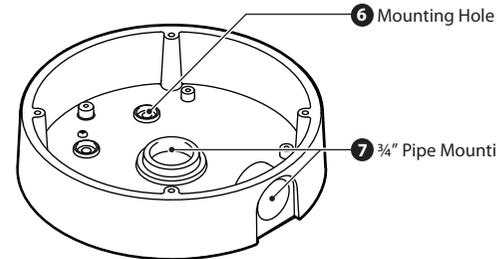


3 7P Terminal Block Slot

4 DIP Switch

5 5P Terminal Block Slot

Bottom of Main Body



6 Mounting Hole

7 3/4" Pipe Mounting Hole

Surface Mount Bracket

1 Dome Cover

- Protects the camera module from outside environment.
- Do not detach protection film from the dome cover before finishing all installation processes to protect dome cover from scratches or dust.

2 Lockup Screw

Fixes main body to the surface mount bracket.

3 7P Terminal Block Slot

- Power, keyboard controller/DVR video device are connected to this terminal block.
- Refer page 17 for details.

4 DIP Switch

- Adjusts camera ID and protocols.
- Refer page 8, 9 for details.

5 5P Terminal Block Slot

- Alarm input and relay out cables are connected to this terminal block.
- Refer page 16 for details.

6 Mounting Hole

This is used to attach the surface mount bracket to the ceiling.

7 3/4" Pipe Mounting Hole

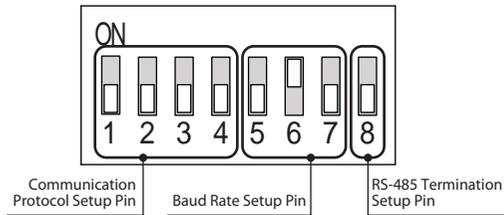
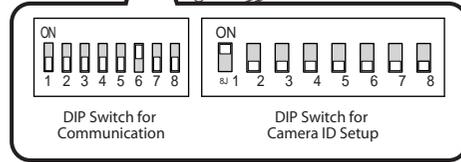
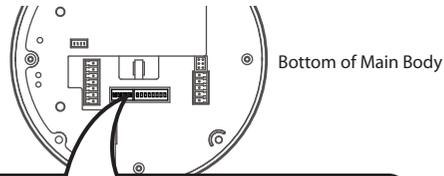
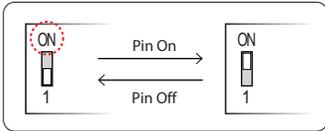
- This is used to pass the cables to the cameras.
- When water protection is needed, connect the 3/4" pipe through this hole, then pass the cables through the pipe.

2 DIP Switch Setup

⊠ Before installing the camera, you should set the DIP switch to configure the camera ID, communication protocol.

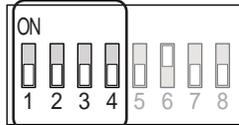
Pin On/Off

If the pin is located 'ON' side of the printed label, it means on. In reverse, means off.

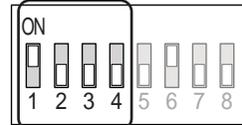


Choose the appropriate communication protocol by setting the DIP switch.

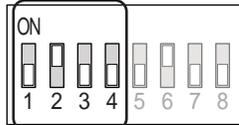
1 Auto Protocol



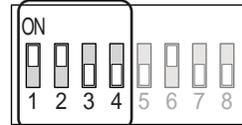
2 PELCO-D



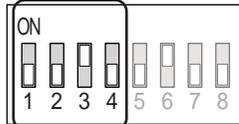
3 PELCO-P



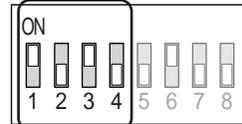
4 SAMSUNG



5 Panasonic



6 GE(Kalatel)



⊠ If there is other combination of pins from above, it will be recognize as auto protocol.

1. DIP Switch for Communication

- It is consist of communication protocol, baud rate and RS-485 termination setup pins.
- If you change the camera protocol by changing the DIP switch, the change will be effective after rebooting the camera.

2. Communication Protocol Setup

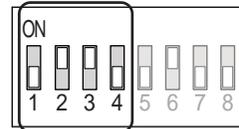
- If you want to control using DVR or keyboard controller, their protocol must be identical to the camera's protocol. Otherwise, you cannot control the camera.
- The factory default is auto protocol.

1 Auto Protocol

- If you set the protocol as auto protocol, camera will automatically recognize the kind of protocol.

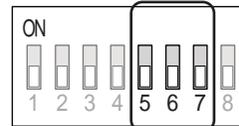
DIP Switch Setup

7 AD(American Dynamics)

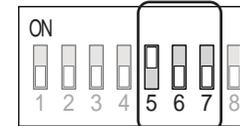


Choose the appropriate baud rate protocol by setting the DIP switch

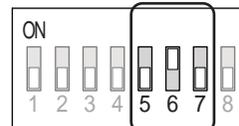
1 2400 BPS



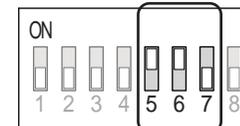
2 4800 BPS



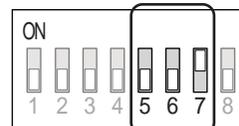
3 9600 BPS



4 19200 BPS



5 38400 BPS



Choose the termination resistor on/off to notify the last camera.

1 Normal



2 Last Camera



2. Communication Protocol Setup

3. Baud Rate Setup

- Select the appropriate baud rate with DIP switch combination.
- The factory default is 2400BPS.

4. RS-485 Termination Setup

- Pin 8 is use 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 the last camera.

Camera ID Setup

- ID number of camera is set using binary number. The example is shown below.

Pin	1	2	3	4	5	6	7	8
ID Value	1	2	4	8	16	32	64	128

5. DIP Switch for Camera ID Setup

- If you want to control a certain camera, you must match the camera ID with 'CAM ID', setting of DVR or keyboard controller.
- ID number of the camera is set using binary number.
- The range of ID is 0~255. Factory default of camera ID is 1.
- Camera ID will be effective without rebooting the camera.

2 Installation Using Surface Mount Bracket

1 Drilling the Hole on the Ceiling

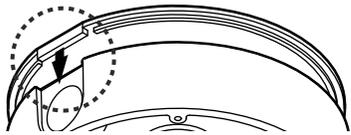
To pass cables through the ceiling, drill a hole (30mm diameter) on the ceiling panel.

2 Fix the Surface Mount Bracket

Pass the cables to the 3/4" pipe hole, and screw the surface mount bracket to the ceiling.

▣ Rubber Gasket

- Before installing the gasket, the hole in the center is to be cut by knife when only necessary.
- When installing gasket, the protrusion of the gasket should be matched with the groove joint of the bottom of the surface mount bracket.

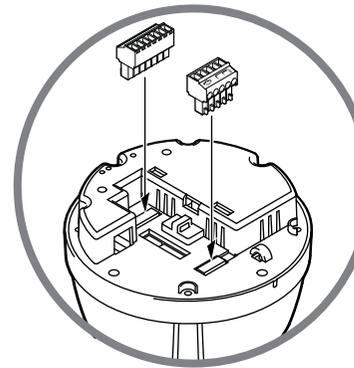


3 Connect the Cables

- Connect wire cables to the terminal blocks.
- Refer page 16, 17 for details.

4 Connect the Terminal Blocks

Connect the terminal blocks to the main body.

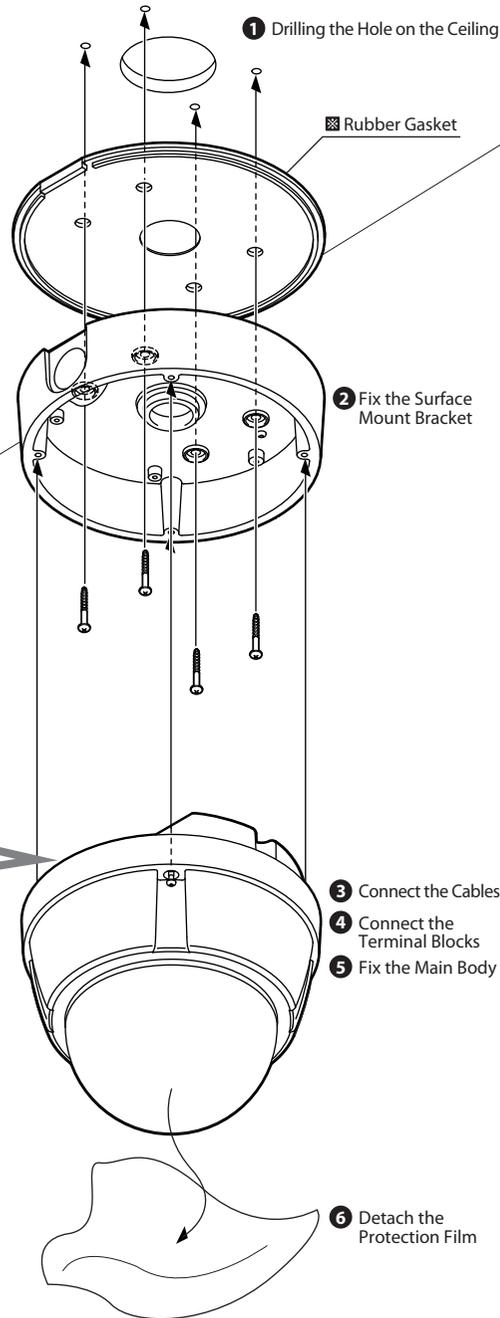


5 Fix the Main Body

Screw the main body to the surface mount bracket by screwing 4 lock-up screws.

6 Detach the Protection Film

Detach the protection film from the dome cover.



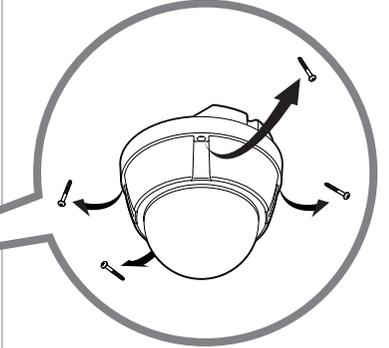
Installation Using Flush Mount Ring Bracket (Option)

1 Drilling the Hole on the Ceiling

To pass cables through the ceiling, drill a hole (70mm diameter) on the ceiling.

2 Separate the Lock-up Screws from the Main Body

Separate the 4 lock-up screws from the main body in advance.



1 Drilling the Hole on the Ceiling

2 Separate the Lock-up Screws from the Main Body

4 Wire the Cables and Terminal Blocks

3 Fix the Flush Mount Ring Bracket to the Main Body

5 Fix the Main Body

3 Fix the Flush Mount Ring Bracket to the Main Body

Fix the flush mount ring bracket to the main body using torx screws.

4 Connect Wire the Cables and Terminal Blocks

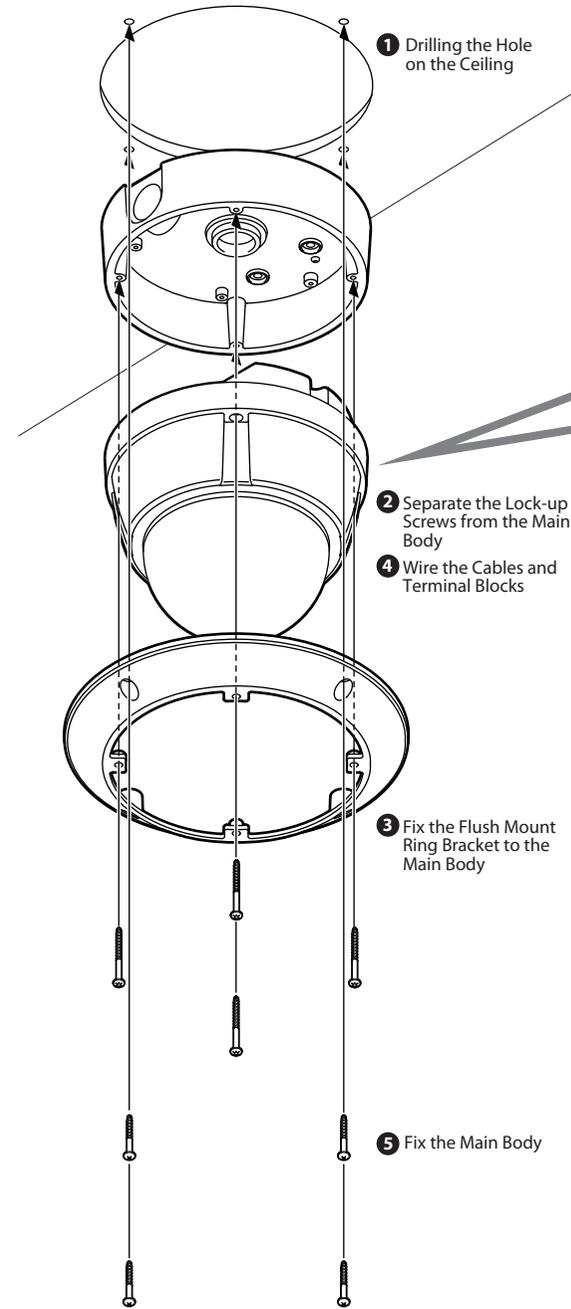
Connect wire cables to the terminal blocks. Refer page 16, 17 for details.

5 Fix the Main Body

Screw the main body with the surface mount bracket to the ceiling using the screws on the surface mount bracket.

6 Detach the Protection Film

Detach the protection film from the dome cover.



Installation Using Ceiling Mount Bracket (Option)

1. Installing on the Concrete Ceiling

1 Drill the Ceiling and Fix the Anchor Bolts

On the ceiling, drill a hole (6mm diameter/ 50mm depth), and fix the anchor bolts.

2 Fix the Ceiling Mount Bracket

1. Drill a hole (20mm diameter) on the pipe of the bracket to pass the cables.
2. On the fixed anchor bolts, attach the rubber gasket and screw the ceiling mount bracket.

2. Installing on the Wooden Ceiling

1 Drill the Ceiling

To pass cables to upside of ceiling, drill a hole (30mm diameter) on the ceiling.

2 Fix the Ceiling Mount Bracket

Pass the cables into the ceiling mount bracket, and screw the ceiling mount bracket to the ceiling.

3 Fix the Surface Mount Bracket

Pass the cables through the hole of the surface mount bracket, screw the surface mount bracket to the ceiling mount bracket.

4 Wire Cables

Wire the cables to the terminal block.
Refer page 16, 17.

5 Connect the Terminal Blocks

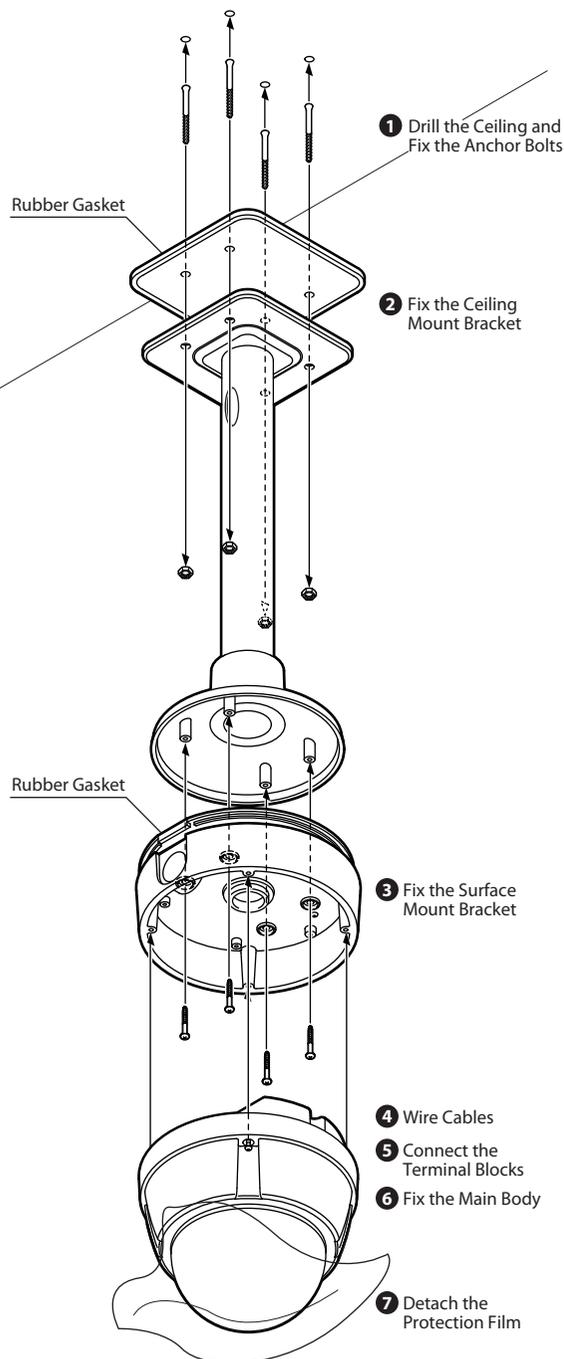
Connect terminal block to the main body.
Refer page 10.

6 Fix the Main Body

Screw the main body to the surface mount bracket.
(Screws are included in the main body.)

7 Detach the Protection Film

Detach the protection film from the dome cover.



Installation Using Wall Mount Bracket (Option)

1. Installing on the Concrete Wall

1 Drill the Wall and Fix the Anchor Bolts

On the wall, drill a hole (6mm diameter/50mm depth), and fix the anchor bolts.

2 Fix the Wall Mount Bracket

1. Drill a hole (20mm diameter) on the pipe of the bracket to pass the cables.
2. On the fixed anchor bolts, attach the rubber gasket and fix the wall mount bracket with nuts and screws.

2. Installing on the Wooden Wall

1 Drill the Wall

To pass cables to the wall, make a hole about 30 mm on the wall.

2 Fix the Wall Mount Bracket

Pass the cables into the wall mount bracket, and screw the wall mount bracket to the wall.

3 Fix the Surface Mount Bracket

Pass the cables through the hole of the surface mount bracket, screw the surface mount bracket to the wall mount bracket.

4 Wire Cables

Wire the cables to the terminal block.
Refer page 16, 17.

5 Connect the Terminal Blocks

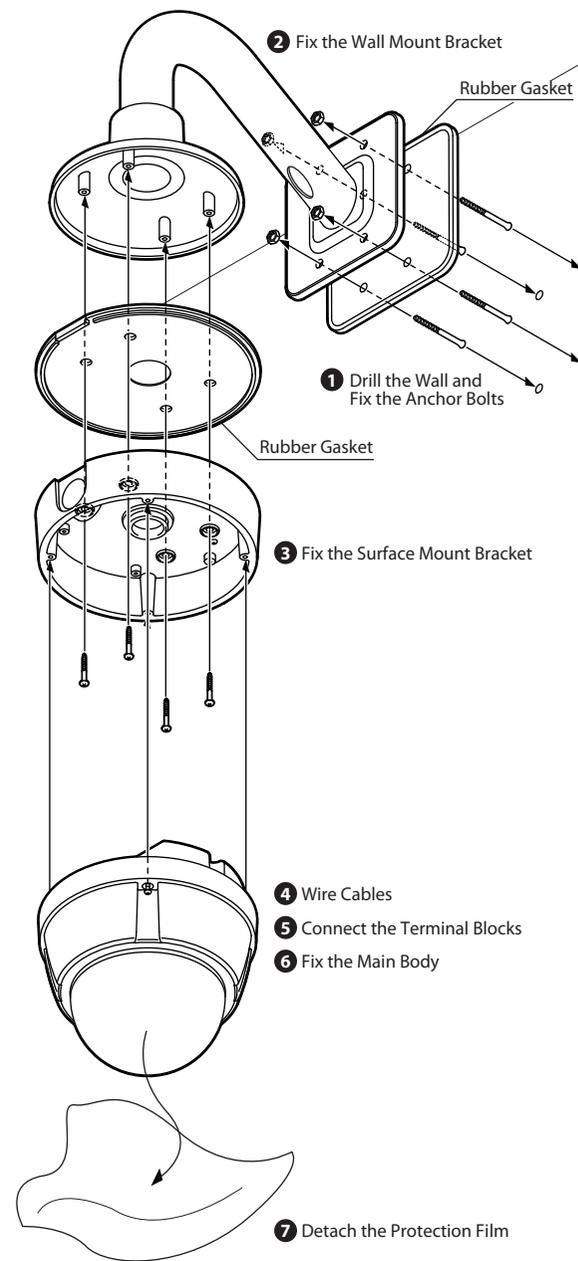
Connect terminal block to the main body.
Refer page 10.

6 Fix the Main Body

Screw the main body to the surface mount bracket.
(Screws are included in the main body.)

7 Detach the Protection Film

Detach the protection film from the dome cover.



2 Installation Using Wall Mount Bracket with Junction Box (Option)

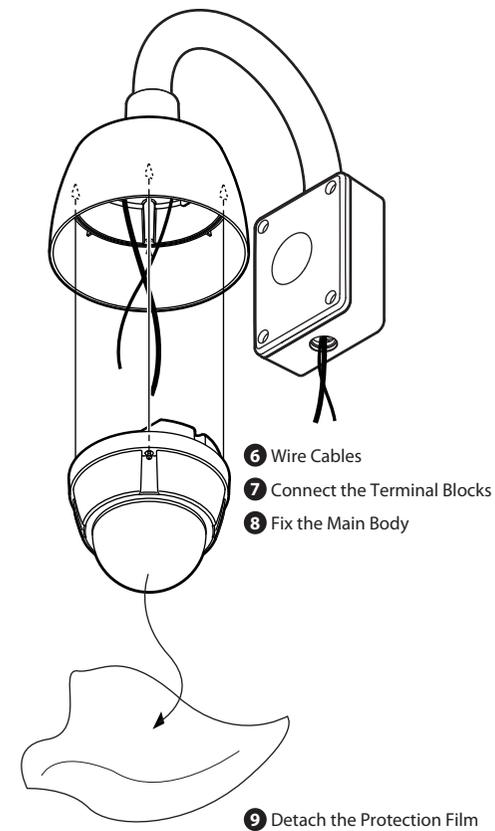
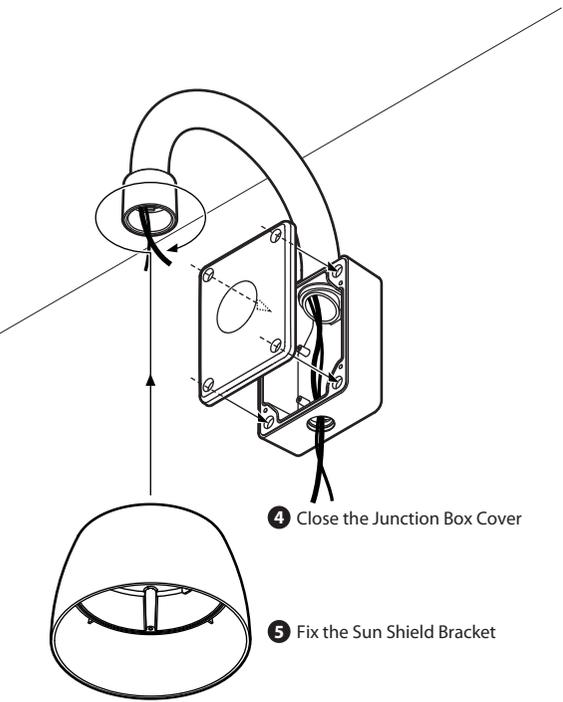
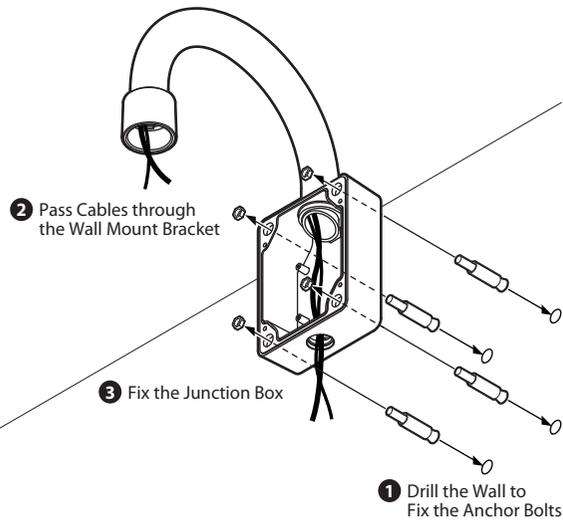
1 Drill the Wall to Fix the Anchor Bolts
On the wall, drill a hole (6mm diameter/50mm depth) for fix the anchor bolts.

2 Pass Cables through the Wall Mount Bracket
Pass cables before fixing the wall mount bracket.

3 Fix the Junction Box
Fix the junction box to anchor bolts on the wall.

4 Close Junction Box Cover
Close cover to the junction box using the torx driver.

5 Fix the Sun Shield Bracket
Fix the sun shield bracket to the wall mount bracket.



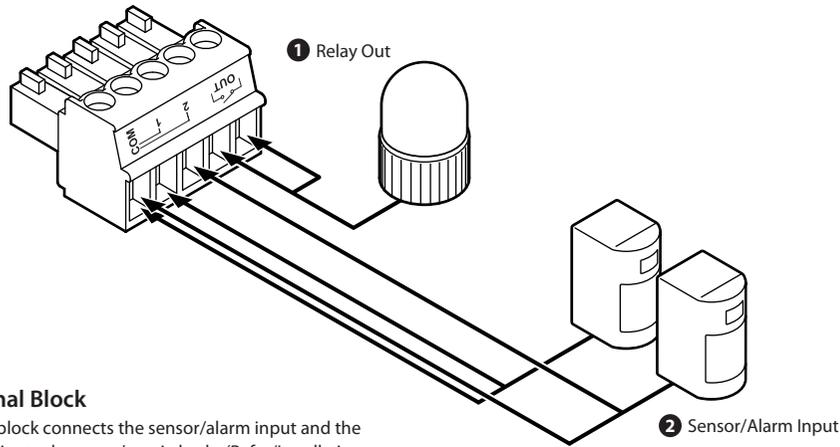
6 Wire Cables
Wire the cables to the terminal block.
Refer page 16, 17.

7 Connect the Terminal Blocks
Connect terminal blocks to the main body.
Refer page 10.

8 Fix the Main Body
Screw the main body to the surface mount bracket.
(Screws are included in the main body.)

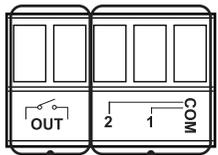
9 Detach the Protection Film
Detach the protection film from the dome cover.

2 Cabling the 5P Terminal Block



5P Terminal Block

5p terminal block connects the sensor/alarm input and the relay out device to the camera's main body. (Refer 'Installation Using Surface Mount Bracket' of page 10 for the connection of the terminal block.)



Relay Out Input Slot

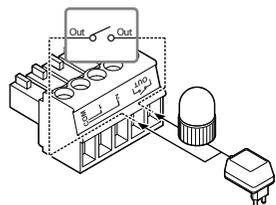
Sensor/Alarm Input Slot

1 Relay Out

- It connects to the alarm lights, siren or lamps, and it is activated according to the OSD menu setting.

- If you want to use relay out, the types of sensor must be selected in OSD menu (ROOT MENU>SYSTEM SETUP>RELAY TYPE). The sensor types are normal open and normal close.

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.



<Inside of terminal block: Activation type of relay out N.O.>

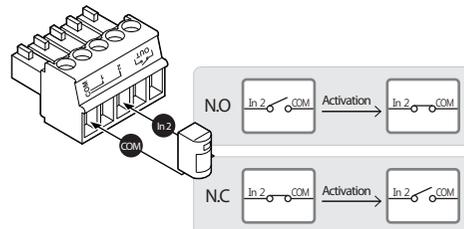
2 Sensor/Alarm Input

- It connects to IR sensor, IrDA sensor or door switch. If the sensor is activated, it can activate to move camera to the specific angle and to connect the alarm device.

- A cable of the sensor should connect to input 1 or 2, and the other should be connected to 'COM' slot.

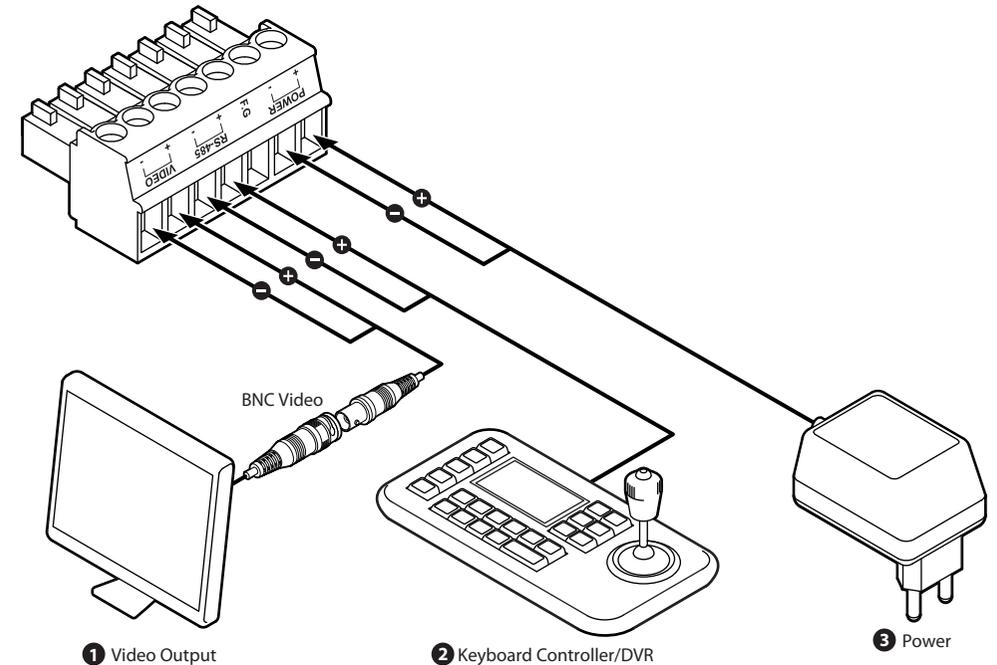
- If you want to use alarm input, the types of sensor must be selected in OSD menu (ROOT MENU>MOTION SETUP>ALARM INPUT SETUP). The sensor types are normal open and normal close.

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.



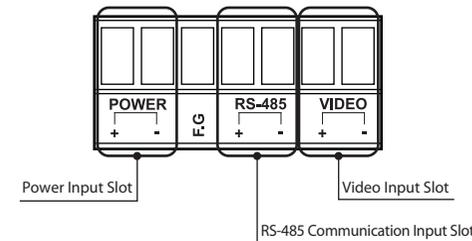
<Inside of terminal block: Activation type of alarm input N.O. / N.C.>

Cabling the 7P Terminal Block



7P Terminal Block

7p terminal block connects the power, keyboard controller/DVR or video device and etc to the camera's main body. (Refer 'Installation Using Surface Mount Bracket' of page 10 for the connection of the terminal block.)

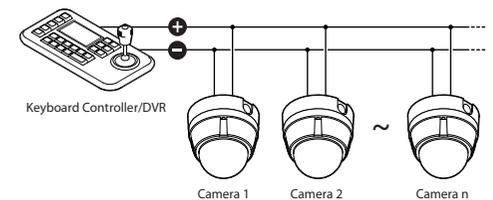


1 Video Output

Video out check the screen during installation.

2 Keyboard Controller/DVR

Controls PTZ by connecting with keyboard controller or DVR using RS-485 communication standards.



3 Power

- Please check the correct rated power.
- The rated power is marked on the bottom of the camera.

Heater	Power	Power Consumption
None	DC 12V	8W
Heater Model		20W

Check Points before Operation

Check Points before Operation

1. Before power is applied, please check the cables carefully.
2. The camera ID of the controller must be identical to that of the target camera. The camera ID can be checked by reading DIP switch of the camera.
3. If your controller supports multi-protocols, the protocol must be changed to match to that of the camera.
4. If you changed camera protocol by changing DIP switch, the change will be effective after you reboot the camera.
5. 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.

1 Preset and Pattern Function Pre-check

- Check how to operate preset and pattern function with keyboard controller/DVR in advance to operate camera function fully when using keyboard controller/DVR.

- If keyboard controller/DVR has no pattern key or function, use shortcut keys with preset numbers. For more information, refer to 'Reserved Preset' below.

2 Reserved Preset

Some preset numbers are reserved to special functions.

- Preset key + 95: Enters into OSD menu
- Preset key + 131~134: Runs pattern function 1 ~ 4
- Preset key + 141~148: Runs scan function 1 ~ 8
- Preset key + 151~158: Runs group function 1 ~ 8
- Preset key + 161: Sets relay output to OFF
- Preset key + 161: Sets relay output to ON
- Preset key + 165: Sets auto calibration to ON
- Preset key + 166: Sets auto calibration to OFF
- Preset key + 167: Zoom proportional jog ON
- Preset key + 167: Zoom proportional jog OFF
- Preset key + 170: Sets camera BLC mode to OFF
- Preset key + 171: Sets camera BLC mode to HIGH
- Preset key + 174: Sets camera focus mode to AUTO
- Preset key + 175: Sets camera focus mode to MANUAL
- Preset key + 176: Sets camera focus mode to SEMI-AUTO
- Preset key + 177: Sets day & night mode to AUTO1
- Preset key + 178: Sets day & night mode to NIGHT
- Preset key + 179: Sets day & night mode to DAY
- Preset key + 190: Sets OSD display mode to AUTO (Except privacy mask)
- Preset key + 191: Sets OSD display mode to OFF (Except privacy mask)
- Preset key + 192: Sets OSD display mode to ON (Except privacy mask)
- Preset key + 193: Sets all privacy mask display to OFF
- Preset key + 194: Sets all privacy mask display to ON
- Preset key + 195: Sets fan/heater to ON (Turning off after 5 min, turn to auto mode)
- Preset key + 196: Sets fan/heater to OFF (After turning off, turn to manual mode)
- Preset key + 197: Fan ON(Turning off after 5 min, turn to auto mode)
- Preset key + 198: Fan OFF(After turning off, turn to manual mode)
- Preset key + 200: Sets digital zoom to ON
- Preset key + 201: Sets digital zoom to OFF

3 Auto Calibration

- If the camera is exposed the high temperature(over 50°) for a long time, the camera can lose focus. As a result, you will get a blurry image. In this case, enter 'Preset key + 165' to enable auto calibration.

- If auto calibration is enabled, the camera will be re-focused once every 6 hours. If you want to disable this function, enter 'Preset key + 165'.

Main Functions

1 Preset

- Max. 127 positions can be stored as preset positions. The preset number can be assigned from 1 to 128, but 95 is reserved for starting OSD menu.
- Refer page 28 - 'ROOT MENU>FUNCTION SETUP>PRESET SETUP' for more detailed information.

1. Set Preset

- Method 1) Use keyboard controller:
 Refer to keyboard controller manual.
- Method 2) Use OSD menu.

2. Run Preset

- Method 1) Use keyboard controller:
 Preset key + Number key(1~128)

3. Delete Preset

- To delete preset, use OSD menu.

2 Scan

- By using scan function, you can make camera move between 2 preset positions repeatedly.
- Refer page 30 - 'ROOT MENU>FUNCTION SETUP>SCAN SETUP' for more detailed information.

1. Set Scan

- To set scan, use OSD menu.

2. Run Scan

- Method 1) If there is scan key on the keyboard controller:
 Scan key + Scan number(1~8) + Enter key
 Ex) Run scan 2 = Scan key + [2] + Enter key
- Method 2) If there is no scan key on the keyboard controller:
 Preset key + [Scan number(1~8) + 140]
 Ex) Run scan 2 = Preset key + [142]

3. Delete Scan

- To delete scan, use OSD menu.

3 Pattern

- 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.
- Refer page 31 - 'ROOT MENU>FUNCTION SETUP>PATTERN SETUP' for more detailed information.

1. Set Pattern

- To set pattern, use OSD menu.

2. Run Pattern

- Method 1) If there is pattern key on the keyboard controller:
 Pattern key + Pattern number(1~4) + Enter key
 Ex) Run pattern 2 = Pattern key + [2] + Enter key
- Method 2) If there is no pattern key on the keyboard controller:
 Preset key + [Pattern number(1~4) + 130]
 Ex) Run pattern 2 = Preset key + [132]

3. Delete Pattern

- To delete pattern, use OSD menu.

4 Group

- The group function allows running sequence of presets, pattern and/or scans.
- Refer page 32 - 'ROOT MENU>FUNCTION SETUP>GROUP SETUP' for more detailed information.

1. Set Group

- To set group, use OSD menu.

2. Run Group

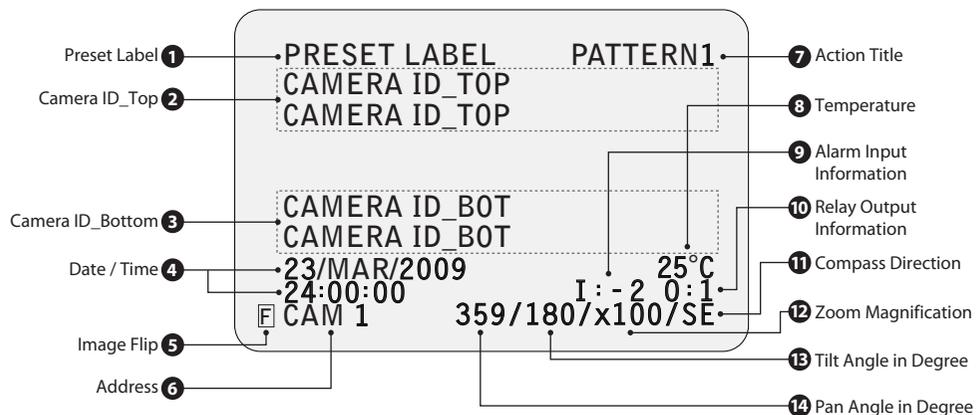
- Method 1) If there is group key on the keyboard controller:
 Group key + Group number(1~8) + Enter key
 Ex) Run group 2 = Group key + [2] + Enter key
- Method 2) If there is no group key on the keyboard controller:
 Preset key + [Group number(1~8) + 150]
 Ex) Run group 2 = Preset key + [152]

3. Delete Group

- To delete group, use OSD menu.

5 Schedule

- The schedule function allows running an appropriate function like preset, scan, group, pattern, home move at the designated day and time.
- Refer Page 34 - 'ROOT MENU>FUNCTION SETUP>SCHEDULE SETUP' for more detailed information.



1 Preset Label

- The label stored for specific preset.
- See the section 'ROOT MENU>FUNCTION SETUP>PRESET SETUP>LABEL'.

2 Camera ID_Top

- If 'CAMERA ID' sets 'TOP', camera ID displayed in this area.
- See the section 'ROOT MENU>DISPLAY SETUP>CAMERA ID'.

3 Camera ID_Bottom

- If 'CAMERA ID' sets 'BOT', camera ID displayed in this area.
- See the section 'ROOT MENU>DISPLAY SETUP>CAMERA ID'.

4 Date / Time

- Shows the current date/time.
- See the section 'ROOT MENU>SYSTEM SETUP>DATE/TIME SETUP'.

5 Image Flip

- Shows that images are currently reversed by auto flip function.
- See the section 'ROOM MENU>CAMERA SETUP>IMAGE FLIP'.

6 Address

- The current RS-485 address information.
- See the section 'ROOT MENU>DISPLAY'.

6 Action Title

Followings are possible action titles and their meaning.

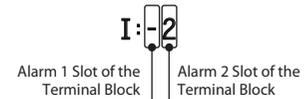
Action Title	Means
SET PRESET 123	Means to store preset 123.
PRESET 123	Means it reached preset 123.
PATTERN 1	Means the camera is running pattern 1.
SCN 1/PRESET 123	Means the camera is running scan 1.
RANGE OVER	Means the action received is not within the range supported.
UNDEFINED	Means the action received is not defined.

8 Temperature

- Current temperature: Boxed 'C' and 'F' means celsius and fahrenheit respectively.
- See the section 'ROOM MENU>DISPLAY SETUP>TEMPERATURE'.

9 Alarm Input Information

This information shows current state of alarm Input. If an input is on state it will show the number of input. If an input is off state, '-' will be displayed.



10 Relay Output Information

This information shows the current state of relay out. If the output is on state it will show the number of output. If an output is off state, '-' will be displayed.

Relay Out On	Relay Out Off
0:1	0:-

11 Compass Direction

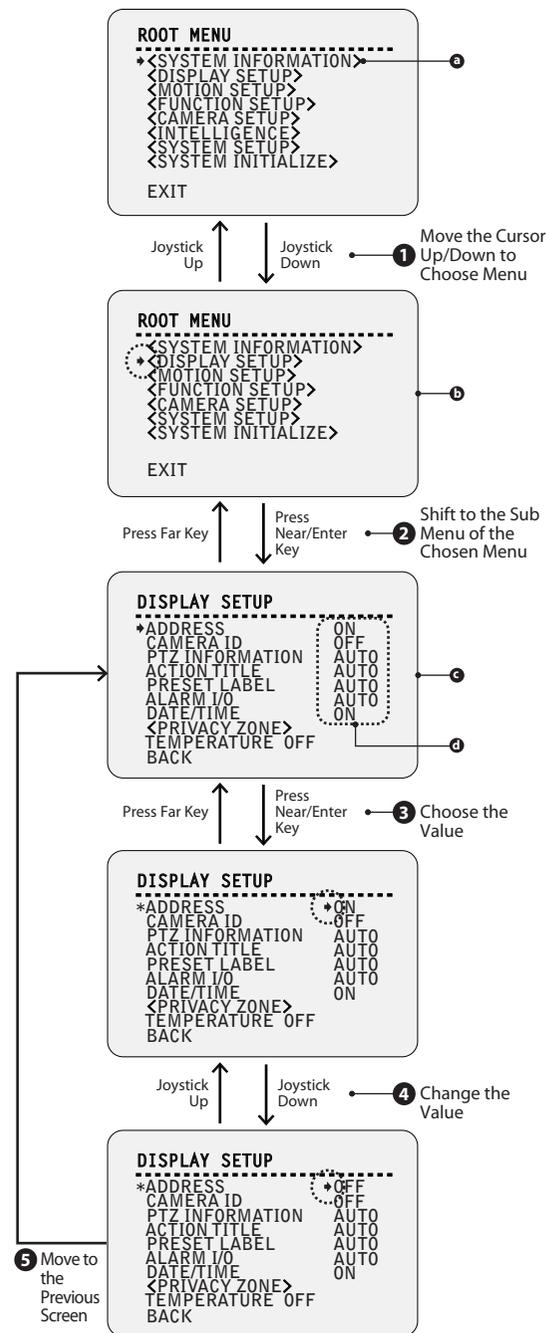
- Shows the current compass direction of the camera.
- The direction is shown as N(North), S(South), E(East), W(West), NE(Northeast), NW(Northwest), SE(Southeast), SW(Southwest).
- See the section 'ROOT MENU>SYSTEM SETUP>SET NORTH DIRECTION'.

12 Zoom Magnification

Shows the current zoom magnification.

13 14 Tilt / Pan Angle in Degree

Shows the current tilt(0 ~ 180) and pan(0 ~ 359) angle.



⊗ This page explains how to operate the OSD menu using keyboard controller.

⊗ Read the manual of the keyboard controller.

⊗ If there are no keys or functions described below, refer the manual of the keyboard controller.

1 Move the Cursor Up/Down to Choose Menu
To move from items to item in the menu, move the joystick Up/Down.

2 Shift to the Sub Menu of the Chosen Menu
For all menu level, to go into sub menu, press near/enter key.

3 Choose the Value
To change the value, press near/enter key to move the cursor to the value.

4 Change the Value
Move the joystick Up/Down to change the value.

5 Move to the Previous Screen
Press near key to save values and press far key to cancel values, then go to the previous screen.

a: The menu items surrounded with < > always have its sub menu. To move to the sub menu, press near/enter key.

b: This screen is the main menu of the **c** (DISPLAY SETUP).

c: This screen is the sub menu of 'DISPLAY SETUP' on the screen **d**.

d: **d** is the value of the each content.

3 OSD - ROOT MENU & SYSTEM INFORMATION

1 ROOT MENU

```

-----
* <SYSTEM INFORMATION>
<DISPLAY SETUP>
<MOTION SETUP>
<FUNCTION SETUP>
<CAMERA SETUP>
<INTELLIGENCE>
<SYSTEM SETUP>
<SYSTEM INITIALIZE>
EXIT
    
```

1 ROOT MENU
To enter this screen, enter 'Preset key + 95'.

<SYSTEM INFORMATION>
Shows information 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, scan, pattern, group and schedule.

<CAMERA SETUP>
Configure camera related functions and data.

<INTELLIGENCE>
Setup for detection of object moving or changing.

<SYSTEM SETUP>
Configure for basic system setup.

<SYSTEM INITIALIZE>
Initializes system configuration and sets all data to factory default configuration.

EXIT
To escape from the OSD setting, go to exit.

1 SYSTEM INFORMATION

```

-----
FIRMWARE VER 1.0
COLOR SYSTEM NTSC
PROTOCOL AUTO
BAUD RATE 2400
ADDRESS 1

BACK
EXIT
    
```

1 SYSTEM INFORMATION
Shows basic information and current configuration of the system.

FIRMWARE VER
Shows the current firmware version.

COLOR SYSTEM
Shows the current analog video system.

PROTOCOL
Shows the current PTZ control protocol.

BAUD RATE
Shows the current baud rate of the PTZ control.

ADDRESS
Shows the current RS-485 address of the PTZ control.

OSD - DISPLAY SETUP

1 DISPLAY SETUP

```

-----
ADDRESS ON / OFF
*CAMERA ID OFF
PTZ INFORMATION AUTO
ACTION TITLE AUTO
PRESET LABEL AUTO
ALARM I/O AUTO
DATE/TIME ON
<PRIVACY ZONE>
TEMPERATURE OFF
BACK
    
```

Press Near/Enter Key

2 DISPLAY SETUP

```

-----
ADDRESS ON
*CAMERA ID OFF
PTZ INFORMATION AUTO
ACTION TITLE AUTO
PRESET LABEL AUTO
ALARM I/O AUTO
DATE/TIME ON
<PRIVACY ZONE>
TEMPERATURE OFF
BACK
    
```

Joystick Right

3 DISPLAY SETUP

```

-----
ADDRESS ON
*CAMERA ID OFF
PTZ INFORMATION AUTO
ACTION TITLE AUTO
PRESET LABEL AUTO
ALARM I/O AUTO
DATE/TIME ON
<PRIVACY ZONE>
TEMPERATURE OFF
BACK
    
```

Joystick Right, Press Near/Enter Key

4 CAMERA ID

```

-----
1 2 3 4 5 6 7 8 9 0 OK
A B C D E F G H I J CANCEL
K L M N O P Q R S T
U V W X Y Z a b c d
e f g h i j k l m n
o p q r s t u v w x
y z < > - / : . <
    
```

Press Near/Enter Key

5 CAMERA ID

```

-----
AAAAAAAAAAAAAAAAAAAAAAAAAAAA
BBBBBBBBBBBBBBBBBBBBBBBBBBB
1 2 3 4 5 6 7 8 9 0 OK
A B C D E F G H I J CANCEL
K L M N O P Q R S T
U V W X Y Z a b c d
e f g h i j k l m n
o p q r s t u v w x
y z < > - / : . <
    
```

1 DISPLAY SETUP
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.

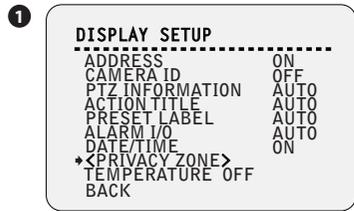
ADDRESS	ON / OFF
CAMERA ID	BOT / TOP / OFF Select the camera ID location. Refer to 'OSD Display of Main Screen'.
PTZ INFORMATION	ON / OFF / AUTO
ACTION TITLE	ON / OFF / AUTO
PRESET LABEL	ON / OFF / AUTO
ALARM I/O	ON / OFF / AUTO
DATE/TIME	ON / OFF
<PRIVACY ZONE>	Start Privacy Zone Mask setup Menu.
TEMPERATURE	CELSIUS / FAHRENHEIT / OFF

3 CAMERA ID - Alphabet Input
- Edits the camera ID to show on monitor when camera ID sets 'TOP(Top)' or 'BOT(Bottom)'.
- Max. 48 alphabets are allowed(Including space).

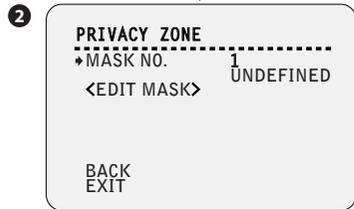
- 1 Current Cursor Position: In edit label menu, a reverse rectangular is cursor. As soon as finishing selecting alphabet, cursor moves to the next digit.
- 2 Selecting Alphabet: Using left/right/up/down of joystick, move to an appropriate character from the character set. To choose the character, press the near or enter key.
- 3 Space: If you want to use blank, choose space character (' ').
- 4 Back-Space: If you want to delete a character in front, use back space character ('←').

4 CAMERA ID - Complete Editing
If you complete the camera ID editing, move the cursor to 'OK' and press near key to save the completed camera ID. To abort the current change, move the cursor to 'CANCEL' and press the near key.

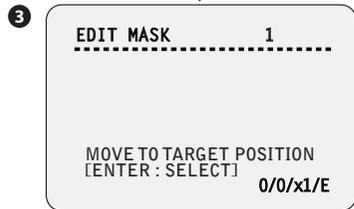
3 OSD - DISPLAY SETUP > PRIVACY ZONE



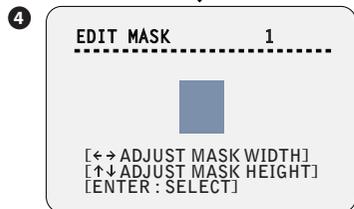
Press Near/Enter Key



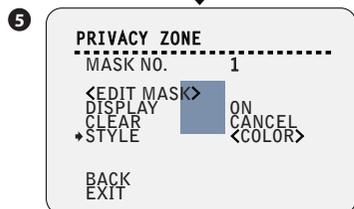
Select <EDIT MASK>, Press Near/Enter Key



Move Camera to Area to Mask, Press Near/Enter Key



Press Near Key to Save



1 DISPLAY SETUP

See the previous page.

3 EDIT MASK - Move to Target Position

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 90° to 90°, you can not set up privacy zone mask.
- ☒ If tilt angle over 90° (image flipped region) is designated, camera will automatically move to identical position by changing tilt angle less than 90° and moving pan angle 180° relatively.

4 EDIT MASK - Adjust Mask Size

Adjust mask size. Use joystick or arrow buttons to adjust mask size.

- Move Joystick Left/Right(◀▶): Adjust Mask Width.
- Move Joystick Up/Down(▲▼): Adjust Mask Height.

- ☒ To hide a certain zone completely regardless of high speed pan/tilt motions, it is recommended that the size of mask must be 20% bigger than original target size.
- ☒ 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.

5 PRIVACY ZONE

Selects area in image to mask.

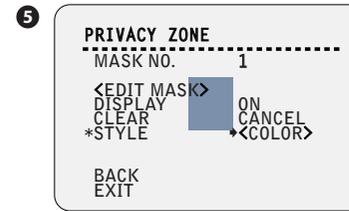
MASK NO. 1 ~ 8
Select mask number. If the selected mask has data already, camera moves as it was set. Otherwise, 'UNDEFINED' will be displayed under 'MASK NO.'.

DISPLAY ON / OFF
Sets if the camera makes mask shows or not on images.

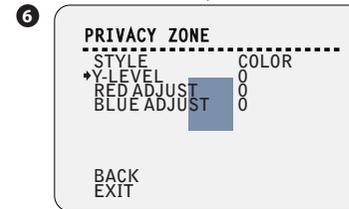
CLEAR MASK CANCEL / OK
Deletes data in the selected mask no.

STYLE <COLOR> / MOSAIC 1 ~ 4
Set the style of the mask. See the next page.

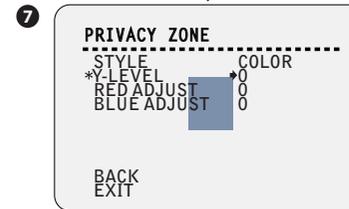
OSD - DISPLAY SETUP > PRIVACY ZONE



Press Near/Enter Key



Press Near Key to Save



7 PRIVACY ZONE - STYLE>COLOR

Set the color of the mask.

Y-LEVEL	0 ~ 100
Set the color 'Y-LEVEL' of the mask.	
RED ADJUST	0 ~ 100
BLUE ADJUST	0 ~ 100

1 MOTION SETUP

```

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

Press
Near/Enter
Key

2 PARKING ACTION SETUP

```

PARKING ACTION SETUP
-----
*PARK ENABLE     OFF
WAIT TIME        00:10:00
PARK ACTION      HOME
BACK
EXIT
    
```

1 MOTION SETUP

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.

PWR UP ACTION ON / OFF / <PWR P>
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 ON / OFF
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 'E' appears in screen. If this function is set to 'OFF', tilt movement range is 0° ~ 90°

JOG MAX SPEED 2/SEC ~ 360/SEC
Sets maximum jog speed. Jog speed is inversely proportional to zoom magnification. As zoom magnification goes up, pan/tilt speed goes down.

JOG DIRECTION INVERSE / NORMAL
If you set this to 'INVERSE', the view in the screen is moving same direction with jog tilting. If 'NORMAL' is selected, the view in the screen is moving reversely.

FRZ 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. This function availability should be different by models.

<PARKING ACTION SETUP>
Moves to 'PARKING ACTION SETUP' screen.

<ALARM INPUT SETUP>
Moves to 'ALARM INPUT ACTION' screen.

2 PARKING ACTION SETUP

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
Enables/Disables 'PARKING ACTION'.

WAIT TIME 00:00:05 ~ 04:00:00
The time is displayed with "hh:mm:ss" format and you can change this by 1 sec unit.

- To place the cursor on the time marked as below, press near key.
00:10:00
- Move joystick Left/Right to adjust hours, minutes and seconds.
- Move joystick Up/Down to select the digit.
- By pressing near key, save current setting.

PARKING ACTION HOME / PRESET 1~128 (Excluding 95) / SCAN 1~8 / PATTERN 1~4 / GROUP 1~8

Select the action of parking. Move joystick Up/Down to choose the appropriate action.

1 MOTION SETUP

```

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

Press
Near/Enter
Key

2 ALARM INPUT SETUP

```

ALARM INPUT SETUP
-----
*ALARM 1 N.O    NOT USED
ALARM 2 N.O    NOT USED
BACK
EXIT
    
```

Press
Near/Enter
Key

3 ALARM INPUT SETUP

```

ALARM INPUT SETUP
-----
*ALARM 1 NO    NOT USED
ALARM 2 N.O    NOT USED
BACK
EXIT
    
```

Joystick
Right

4 ALARM INPUT SETUP

```

ALARM INPUT SETUP
-----
*ALARM 1 N.O    NOT USED
ALARM 2 N.O    NOT USED
BACK
EXIT
    
```

Joystick
Down

5 ALARM INPUT SETUP

```

ALARM INPUT SETUP
-----
*ALARM 1 N.O    PRESET 1
ALARM 2 N.O    NOT USED
BACK
EXIT
    
```

2 ALARM INPUT SETUP

If an external sensor is activated, camera will move to corresponding action.

Alarm Type: N.O(Normal Open) / N.C(Normal Close)
- Sets sensor input type.
- Refer page 16 for more detailed information.

Alarm Action NOT USED / HOME / PRESET 1~128 (Excluding 95) / SCAN 1~8 / PATTERN 1~4 / GROUP 1~8

Assign counter-action to each alarm input. Among 149 actions, choose the action as explained below.

3 ALARM INPUT SETUP - Type Setup

- Move joystick Up/Down to set alarm type.
- Move joystick Left/Right to set alarm action.

4 5 ALARM INPUT SETUP - Alarm Action Setup

- Move joystick Up/Down to set the action(HOME, PRESET, SCAN, PATTERN, GROUP) and no.
- On screen 5, move joystick Left/Right to move the focus to set alarm type, function name and function no.
- By pressing near key, save the current setting.

OSD - FUNCTION SETUP > PRESET SETUP

1 FUNCTION SETUP

```

-----
*PRESET SETUP>
<SCAN SETUP>
<PATTERN SETUP>
<GROUP SETUP>
<SCHEDULE SETUP>

BACK
EXIT
    
```

Press
Near/Enter
Key

2 PRESET SETUP

```

-----
*PRESET NO. 1 UNDEFINED
<EDIT SCENE>

BACK
EXIT
    
```

Select <EDIT SCENE>,
Press Near/Enter Key

3 EDIT SCENE -PRESET1

```

-----
MOVE TO TARGET POSITION
(INEAR:SELECT/FAR:CANCEL)
0/0/x1/E
    
```

Press
Near/Enter
Key

4 PRESET SETUP

```

-----
*PRESET NO. 1
<EDIT SCENE>
<LABEL>
CLR PRESET CANCEL
CAM ADJUST GENERAL
ALARM OUT -
BACK
EXIT
    
```

1 FUNCTION SETUP

Configure 5 special functions with this menu.

- <PRESET SETUP>
Moves to 'PRESET SETUP' screen.
- <SCAN SETUP>
Moves to 'SCAN SETUP' screen. Refer page 30.
- <PATTERN SETUP>
Moves to 'PATTERN SETUP' screen. Refer page 31.
- <GROUP SETUP>
Moves to 'GROUP SETUP' screen. Refer page 32.
- <SCHEDULE SETUP>
Moves to 'SCHEDULE SETUP' screen. Refer page 34.

2 PRESET SETUP - Undefined Screen

127 presets from the number 1 to 128 can be assigned excluding preset 95 reserved for menu.

PRESET NO. 1 ~ 128 (Excluding 95)
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. (Refer screen 4) If a selected preset is not defined, "UNDEFINED" shows on monitor.

<EDIT SCENE>
Moves to 'EDIT SCENE' setup screen.

3 EDIT SCENE

1. Using joystick, move camera to desired position.
2. Using zoom key, move camera to desired screen size.
3. By pressing near key, the save current PTZ data

4 PRESET SETUP

If the preset is defined, the information will be shown on the OSD menu with the setting, and the alarm device (if defined) will be activated.

- PRESET NO.** 1 ~ 128 (Excluding 95)
- <EDIT SCENE>
- <LABEL>
Edits Label to show on monitor when preset runs. If the preset is not defined, this is not shown. Refer following page to setup label.
- CLR PRESET CANCEL / OK
Deletes current preset data. If the preset is not defined, this is not shown.
- CAM ADJUST GENERAL / SPECIAL
 - CAM ADJUST_GENERAL: The general mode means that WB or AE defined 'ROOT MENU>CAMERA SETUP' will be applied to this preset.
 - CAM ADJUST_SPECIAL: The Special mode means that WB or AE can be set up independently or separately for each preset in each preset setup menu.
 - Special WB/AE value should activate only when the camera arrives at each preset location. During jog operation, general WB/AE value should be applied.
 - Refer following page to set special WB/AE.
- ALARM OUT - / 1
Relay output can be linked with preset run. ' - ' means off, '1' means on.

OSD - FUNCTION SETUP > PRESET SETUP

1 PRESET SETUP

```

-----
PRESET NO. 1
<EDIT SCENE>
*LABEL>
CLR PRESET CANCEL
CAM ADJUST GENERAL
ALARM OUT -
BACK
EXIT
    
```

Press
Near/Enter
Key

2 LABEL PRESET1

```

-----
[ ]
1 2 3 4 5 6 7 8 9 0 OK
A B C D E F G H I J CANCEL
K L M N O P Q R S T
U V W X Y Z a b c d
e f g h i j k l m n
o p q r s t u v w x
y z < > - / : . <
    
```

Press
Near/Enter
Key

3 LABEL PRESET1

```

-----
[SKY]
1 2 3 4 5 6 7 8 9 0 *OK
A B C D E F G H I J CANCEL
K L M N O P Q R S T
U V W X Y Z a b c d
e f g h i j k l m n
o p q r s t u v w x
y z < > - / : . <
    
```

2 LABEL

- Edits label to show on monitor when preset runs.
- Max. 10 alphabets are allowed(Including space).

- 1 Preset NO. for Label
- 2 Input Cursor: The character which cursor is located will be input or edited.
- 3 Cursor Selecting Alphabet: Using Left/Right/Up/Down of joystick, move to an appropriate character from the character set.
- 4 Space: If you want to use blank, choose space character (" ").
- 5 Back-Space: If you want to delete a character before, use back space character ('←').

3 LABEL - Alphabet Input

- 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.

1 PRESET SETUP

```

-----
PRESET NO. 1
<EDIT SCENE>
<LABEL>
CLR PRESET CANCEL
*CAM ADJUST *SPECIAL>
ALARM OUT -
BACK
EXIT
    
```

Press
Near/Enter
Key

2 CAM ADJUST -PRESET1

```

-----
*WHITE BALANCE SETUP>
<AUTO EXPOSURE SETUP>

BACK
EXIT
    
```

2 CAM ADJUST

Sets WB/AE for the preset when 'CAM ADJUST' value is 'SPECIAL'.

- <WHITE BALANCE SETUP>
Moves to 'WHITE BALANCE SETUP' screen. Refer page 36.
- <AUTO EXPOSURE SETUP>
Moves to 'AUTO EXPOSURE SETUP' screen. Refer page 38.

OSD - FUNCTION SETUP > GROUP SETUP

1 FUNCTION SETUP

```

-----
<PRESET SETUP>
<SCAN SETUP>
<PATTERN SETUP>
* <GROUP SETUP>
<SCHEDULE SETUP>

BACK
EXIT
    
```

Press Near/Enter Key

2 GROUP SETUP

```

-----
* <GROUP NO. 1
CLEAR GROUP UNDEFINED
<EDIT GROUP> CANCEL

BACK
EXIT
    
```

Select <EDIT GROUP>, Press Near/Enter Key

3 EDIT GROUP 1

```

-----
* NO. ACTION NO. DWELL OPT
1 NONE
2 NONE
3 NONE
4 NONE
5 NONE
SAVE [NEAR:EDIT]
CANCEL
    
```

Press Near/Enter Key

4 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]
    
```

Press Near/Enter Key

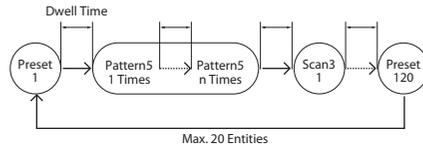
5 EDIT GROUP 1

```

-----
* NO. ACTION NO. DWELL OPT
1 NONE
2 NONE
3 NONE
4 NONE
5 NONE
SAVE [←→:MOVE CURSOR]
CANCEL [↑↓:CHANGE VAL.]
    
```

2 GROUP SETUP SCREEN

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.



GROUP NO. 1 ~ 8
Selects group number to edit. If a selected group number is not defined, 'UNDEFINED' will be displayed under the selected group number.

CLEAR GROUP CANCEL / OK
Deletes data in the current group.

<EDIT GROUP>
Moves to edit the group assigned.

3 EDIT GROUP - Initial Screen

To edit group, press near key to move screen 4.

At the current screen, if moves joystick Down, the cursor will move to 'SAVE' menu.

NO. 1 ~ 20
Means the sequence of the function in a group. The functions will be run from lower no. to higher no. by sequence.

ACTION NO. NONE / PRESET 1~128(Excluding 95) / PATTERN 1~4 / SCAN 1~8
Select the function. Select the function no. separately.

DWELL TIME 00:03 ~ 04:00 (min:sec)
Sets dwell time between function by moving joystick Up/Down. If the 'OPT' of pattern/group is set to repeat more than twice, it means the repeat interval.

OPT PRESET: 2~360 / PATTERN & SCAN: 1~255
It should be preset speed when preset is set in 'ACTION'. It should be the number of repeat when pattern or scan is selected in 'ACTION'.

4 EDIT GROUP - Select Function Sequence

Note that max. 20 functions are allowed in a group. Move cursor Up/Down to rotate among 20 functions.

5 EDIT GROUP - Assign Function

Move cursor to the 'NO.' to assign the function, press near key to set up. Select the function by moving joystick Up/Down.

OSD - FUNCTION SETUP > GROUP SETUP

6 EDIT GROUP 1

```

-----
NO. ACTION NO. DWELL OPT
* 1 PATTERN 1 00:03 1
2 NONE
3 NONE
4 NONE
5 NONE
SAVE [←→:MOVE CURSOR]
CANCEL [↑↓:CHANGE VAL.]
    
```

Press Near/Enter Key

7 EDIT GROUP 1

```

-----
NO. ACTION NO. DWELL OPT
* 1 PATTERN 1 00:03 1
2 NONE
3 NONE
4 NONE
5 NONE
SAVE [NEAR:EDIT ACT]
CANCEL [FAR :EDIT END]
    
```

Press Far Key

8 EDIT GROUP 1

```

-----
NO. ACTION NO. DWELL OPT
1 PATTERN 1 00:03 1
2 NONE
3 NONE
4 NONE
5 NONE
* SAVE
CANCEL
    
```

6 EDIT GROUP - Assign Function

Move cursor Left/Right to select items and move cursor Up/Down to change each value.

7 EDIT GROUP - Select Function Sequence

The function undefined cannot be set as action.

e.g.) If 'PATTERN 1' is not defined at 'ROOT MENU>FUNCTION SETUP>PATTERN SETUP', then the 'ACTION 1' will be automatically changed to 'NONE'.

EDIT GROUP 1

```

-----
NO. ACTION NO. DWELL OPT
* 1 PATTERN 1 00:03 1
    
```

Press Near Key

EDIT GROUP 1

```

-----
NO. ACTION NO. DWELL OPT
* 1 NONE
    
```

<In case that 'PATTERN 1' is not defined.>

8 EDIT GROUP - Saves the Setting

After finishing setting up all actions, place cursor on 'SAVE'. Then, press near key to save data.

3 OSD - FUNCTION SETUP > SCHEDULE SETUP

```

1 FUNCTION SETUP
-----
<PRESET SETUP>
<SCAN SETUP>
<PATTERN SETUP>
<GROUP SETUP>
* <SCHEDULE SETUP>

BACK
EXIT
    
```

Press
Near/Enter
Key

```

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

Joystick Down,
Press Near Key

```

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

Joystick
Down

```

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

Assign Value

```

5 SCHEDULE SETUP
-----
* MASTER ENABLE OFF
  DAY TIME ACT NO ON
* 1 ALL 12:00 PRS 128 ON
2 UNDEFINED
3 UNDEFINED
4 UNDEFINED
5 UNDEFINED
6 UNDEFINED
7 UNDEFINED
BACK
    
```

2 SCHEDULE SETUP SCREEN

- The schedule function allows running the appropriate function like preset, scan, group, pattern, home move at designated day and time.
- e.g.) 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.
- It is noted that due to the real time clock (ROOT MENU>SYSTEM SETUP>DATE/TIME SETUP), the time data will be kept regardless of blackout. The initial time and day setup is essential to proper schedule function.
- Max. 7 schedules are allowed.

MASTER ENABLE	ON / OFF
Decide whether schedule function is active or not.	
DAY	UNDEFINED / ALL / WKD / SUN ~ MON
Set the day for scheduling.	
- Undefined: Inactivate	
- All: Applies to every day	
- WKD: Applies to every day except for Saturday and Sunday	
- SUN-MON: Applies to designated day only	
TIME	00:00 ~ 23:59 (hour:min)
Set the time.	
ACT NO	HOM(HOME) / PRS(Preset) 1~128(Excluding 95) / SCN(Scan) 1~8 / PTN(Pattern) 1~4 / GRO(Group) 1~8
Set the function and no.	
<input checked="" type="checkbox"/> Unlike the group, the undefined function can be assigned in schedule. However, no action is taken at the schedule.	
ON	ON / OFF
Decide to make this rule effective or not.	

4 5 SCHEDULE SETUP - Assign Value

Each field (DAY, TIME, ACT, NO., ON) can be selected by Left/Right keys and the values in the field are changed using Up/Down keys.

OSD - FUNCTION SETUP > SCHEDULE SETUP

```

6 SCHEDULE SETUP
-----
MASTER ENABLE ON
DAY TIME ACT NO ON
1 MON 01:20 HOM ON
* 2 WED 07:00 PRS 12 ON
3 THU 11:40 SCN 3 ON
4 ALL 12:00 SCN 1 ON
5 UNDEFINED
6 UNDEFINED
7 UNDEFINED
BACK
    
```

6 SCHEDULE SETUP - Save Edited Setting

To save data and exit, click the enter button.

- If there are rules conflicts to each other, the higher number is the higher priority has.
- If you assign undefined function, there will be no action.
- Using reserved preset, you can make various schedules. For example, PRS179 and PRS178 are 'DAY' and 'NIGHT' mode respectively.

EX) The camera will move to 'Preset 127' at 12:00 on every Wednesday although 'Preset 128 and 127' were set at 12:00 on every Wednesday.

```

SCHEDULE SETUP
-----
* MASTER ENABLE OFF
  DAY TIME ACT NO ON
1 ALL 12:00 PRS 128 ON
2 WED 12:00 PRS 127 ON
3 UNDEFINED
4 UNDEFINED
5 UNDEFINED
    
```

1 ZOOM CAMERA SETUP

```

-----
FOCUS MODE      AUTO
DIGITAL ZOOM    ON
IMAGE FLIP      OFF
FLICKERLESS     OFF
DIS MODE        OFF
* <WHITE BALANCE SETUP>
<AUTO EXPOSURE SETUP>
<SPECIAL>
BACK
EXIT
    
```

Press Near/Enter Key

2 WB SETUP

```

-----
* DAY/NIGHT      DAY
- WB MODE        ATW2
- RED ADJUST     0
- BLUE ADJUST    0

BACK
EXIT
    
```

Joystick Down, Press Near Key

3 WB SETUP

```

-----
DAY/NIGHT      DAY
* - WB MODE    * ATW2
- RED ADJUST   0
- BLUE ADJUST  0

BACK
EXIT
    
```

Joystick Down

4 WB SETUP

```

-----
DAY/NIGHT      DAY
* - WB MODE    * AWC>
- RED ADJUST   0
- BLUE ADJUST  0
- R-GAIN       0
- B-GAIN       0

BACK
EXIT
    
```

Joystick Right

5 WB SETUP

```

-----
DAY/NIGHT      DAY
* - WB MODE    * AWC>
- RED ADJUST   0
- BLUE ADJUST  0
- R-GAIN       74
- B-GAIN       52

BACK
EXIT
    
```

1 ZOOM CAMERA SETUP

Setup the general functions of zoom camera module.

FOCUS MODE AUTO / MANUAL / SEMIAUTO

Sets the camera focus mode.

- **SEMIAUTO**: This mode exchanges the 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.

- **MANUAL**: 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' or '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

Sets if the image should be reversed or not.

FLICKERLESS ON / OFF

Turns 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.

DIS MODE ON / OFF

Sets the digital image stabilization mode.

<WHITE BALANCE SETUP>

Starts 'WHITE BALANCE SETUP' setup screen.

<AUTO EXPOSURE SETUP>

Starts 'AUTO EXPOSURE SETUP' setup screen.

<SPECIAL>

Starts to 'SPECIAL SETUP' screen.

2 WB SETUP - DAY

DAY/NIGHT DAY / NIGHT

The day/night mode can be set independently.

Only, night mode will be deactivated if 'AGC' in 'CAMERA SETUP' is set to 'OFF' or 'FIX'.

WB MODE ATW1 / ATW2 / AWC / 3200K / 5600K / OFF

- **ATW1**: The color temperature is adjusted automatically between 2500K and 9300K.

- **ATW2**: The color temperature is adjusted automatically between 2000K and 10000K.

- **AWC**: The color temperature is adjusted automatically once, then adjusted value of 'R-GAIN, B-GAIN' are maintained. Gain value can be adjusted manually by the user. It can be fixed as 3200K or 5600K.

- **OFF**: Only activated when 'NIGHT' is selected. At night, the setting will be same as day's setting.

RED/BLUE ADJUST -32 ~ +32

In every mode except 'OFF', users can adjust the red/blue adjust value to have the image they want.

R/B - GAIN 0 ~ 1023

If 'AWC' is on, the adjusted value will be marked. Also, the user can adjust the values after it was adjusted automatically.

6 WB SETUP

```

-----
DAY/NIGHT      NIGHT
* - WB MODE    * AWC>
- BRIGHTNESS   MIDDLE
- RED ADJUST   0
- BLUE ADJUST  0
- R-GAIN       74
- B-GAIN       52

BACK
EXIT
    
```

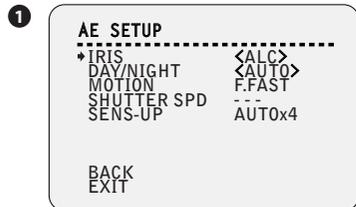
6 WB SETUP - NIGHT

BRIGHTNESS LOW / MIDDLE / HIGH

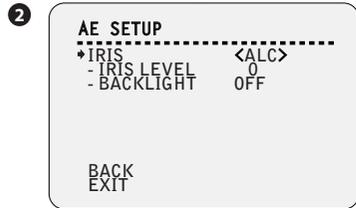
When 'NIGHT' is selected, it sets the criterion of the automatic day/night selection.

If set to 'LOW', the image has to be very dark to be recognized as night among 3 settings. If set to 'HIGH', the image will be recognized as night even though it is a little dark.

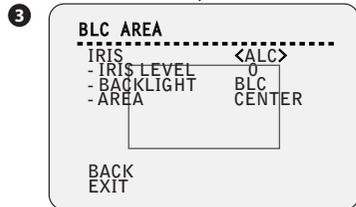
3 OSD - CAMERA SETUP > AE SETUP



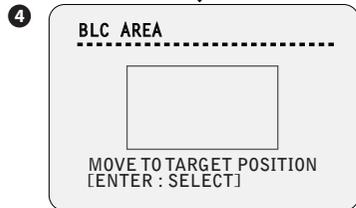
Press Near/Enter Key



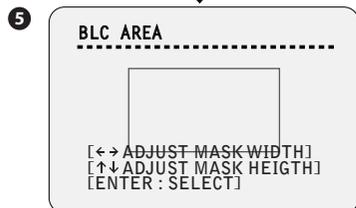
Select 'BACKLIGHT>BLC', Press Near/Enter Key



Select 'AREA>USER', Press Near/Enter Key



Move Camera to BLC Area, Press Near/Enter Key



1 AE SETUP

IRIS	ALC / MANUAL
------	--------------

See the below 2 AE SETUP - IRIS>ALC'

DAY/NIGHT	DAY / NIGHT / AUTO
-----------	--------------------

Color filter or B/W filter can be selected. If DAY/NIGHT is set to 'AUTO', starts 'DAY/NIGHT' editing. See the next page 2 'DAY/NIGHT'.

This is changed to 'AGC' or 'MOTION' according to the 'SENS-UP' setting.

AGC	VERY LOW / LOW / MIDDLE / HIGH / VERY HIGH / USER 1~16 / FIX 1~16
-----	---

Enhances the brightness of the image by amplifying gain when the illumination is low.

MOTION	S.SLOW / SLOW / NORMAL / FAST / F.FAST
--------	--

If 'MOTION' is set towards 'S.SLOW', the gain will be used less. However, so as compensate it, the shutter speed will be slower to obtain more light. Thus, there will be less noise but this can cause the ghost effect of the moving object. If 'MOTION' is set towards 'F.FAST', there will be more noise but this will reduce the ghost effect of the moving object.

SHUTTER SPD	OFF / 1/100 ~ 1/10K
-------------	---------------------

If this speed is faster, the moving object can be photographed without the ghost effect. However, picture can be dark if there is no sufficient lighting.

If 'SENS-UP' is set to 'AUTO', 'SHUTTER SPD' is deactivated.

SENS-UP	OFF / AUTO x2 ~ AUTO x256 / FIX x2 ~ FIX x256
---------	---

It activates the slow shutter function when luminance of image is too dark so that CCD can accumulate the light as much as it is multiplied by the number which is set.

2 AE SETUP - IRIS>ALC

If 'ALC' is selected, iris will be controlled automatically.

IRIS LEVEL	-32 ~ +32
------------	-----------

BACKLIGHT	OFF / WDR / BLC
-----------	-----------------

Using this function, the backlight effect, which the object displays dark on the monitor when there is intensive backlight, can be improved.

WDR: You can set the WDR value. See the next page for details.

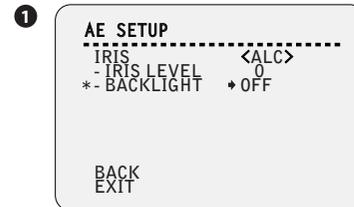
BLC: You can set the desired area, then the area will be bright. If it is set on the bright area, note that the area will be even more brighter.

3 BLC AREA

AREA	TOP / BOTTOM / LEFT / RIGHT / USER
------	------------------------------------

If set to 'USER', the user can set the area by him/herself. See the screen 1 3 on this page.

OSD - CAMERA SETUP > AE SETUP



Select 'BACKLIGHT>WDR'



2 AE SETUP - IRIS>ALC>WDR(Wide Dynamic Range)

In case there is a large difference in lightness(back light), the WDR function is intended to provide clear images under both very bright and dark areas simultaneously.

WEIGHT	LOW / MIDDLE / HIGH
--------	---------------------

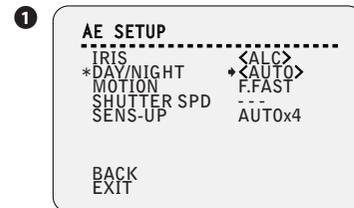
The 'HIGH' value reduces the lightness differences the most.

WDR LEVEL	-9 ~ 9
-----------	--------

This item can be divided in detail as WDR LEVEL. The bigger value means the difference in lightness becomes smaller.

WHITE BAL	INDOOR / OUTDOOR
-----------	------------------

INDOOR: WB will be done under the assumption of the Indoor illumination.
OUTDOOR: WB will be done under the assumption of the Sun light.



Press Near/Enter Key



2 DAY/NIGHT

It is automatically changed by sensing the brightness of the scene.

BURST	ON / OFF
-------	----------

If 'BURST' is set to 'ON', the burst signal is outputted although it is changed to B/W filter

BRIGHTNESS	LOW / MIDDLE / HIGH
------------	---------------------

When switched from color to B/W filter, it has to be darker if 'BRIGHTNESS' is the 'LOW' side. When switched from B/W to color, it has to be brighter if 'BRIGHTNESS' is the 'HIGH' side.

DWELL TIME	2 SEC / 3 SEC / 5 SEC / 10 SEC / 15 SEC / 20 SEC / 25 SEC / 30 SEC
------------	--

When the switching criterions are satisfied, the filter is changed after the status is maintained during the dwell time.

MASK AREA	1 / 2
-----------	-------

If the streetlights or traffic lights are present, the mode might not be changed to B/W. In this occasion, if you set 'MASK AREA' on those kind of the spot light, this can reduce the effect of the interference on criterion.

If 'BACKLIGHT' is set to 'BLC', 'MASK AREA' function is deactivated.

3 OSD - CAMERA SETUP > SPECIAL

1 ZOOM CAMERA SETUP

```

-----
FOCUS MODE SEMIAUTO
DIGITAL ZOOM ON
IMAGE FLIP OFF
FLICKERLESS OFF
DIS MODE OFF
<WHITE BALANCE SETUP>
<AUTO EXPOSURE SETUP>
* <SPECIAL>
BACK
EXIT
    
```

Press Near/Enter Key

2 SPECIAL

```

-----
* DNR MIDDLE
ZOOM SPEED 4
DETAIL 2
AGC COLOR SUP MIDDLE
PIP OFF
POSI/NEGA +

BACK
EXIT
    
```

1 SPECIAL

Sets the special function related to the image.

DNR OFF / LOW / MIDDLE / HIGH / USER 1~16
If reduces the noise caused by 'AGC' action. If set towards 'HIGH', the noise will be reduced but the ghost effect on moving objects will be increased.

ZOOM SPEED 1 ~ 4
Zoom speed while zoom in/out action can be adjusted. 1 is the slowest, and 4 is the fastest.

DETAIL 0 ~ 3
The distinction can be set as 4 levels.
If the level is high, the outline is clear but the noise is increased.

AGC COLOR SUP LOW / MIDDLE / HIGH
The color range of the noise caused by 'AGC' can be reduced.
If set towards 'HIGH', the color element of the noise is reduced.
However, the overall color sense of the scene can be decreased.

PIP ON / OFF
Selects if the sub screen will be displayed.
Sub screen will be displayed on the bottom of the right side.
Even though the main image enables the digital zoom, the sub screen will only display with maximum optical zoom.

POSI/NEGA + / -
If set to '+', the normal image will be outputted. However, if set to '-', the brightness signal and color signal will be outputted as reverse.

OSD - INTELLIGENCE > MASK AREA

1 INTELLIGENCE

```

-----
MOTION OFF
ADVANCED OFF
* MASK AREA 1 2 3 4
DISPLAY OFF
SENSITIVITY 5
RESOLUTION 3
<ALARM OUT>

BACK
EXIT
    
```

Press Near/Enter Key

2 INTELLIGENCE

```

-----
MOTION OFF
ADVANCED OFF
* MASK AREA 1 2 3 4
DISPLAY OFF
SENSITIVITY 5
RESOLUTION 3
<ALARM OUT>

BACK
EXIT
    
```

Joystick Up or Down

3 INTELLIGENCE

```

-----
MOTION OFF
ADVANCED OFF
* MASK AREA 1 2 3 4
DISPLAY OFF
SENSITIVITY 5
RESOLUTION 3
<ALARM OUT>

BACK
EXIT
    
```

Press Near/Enter Key

4 INTELLIGENCE

```

-----
[ ]

MOVE TO TARGET POSITION
[ENTER : SELECT]
    
```

Press Near/Enter Key

5 INTELLIGENCE

```

-----
[ ]

[←→ ADJUST MASK WIDTH]
[↑↓ ADJUST MASK HEIGHT]
[ENTER : SELECT]
    
```

1 INTELLIGENCE

You can enable the motion detection and tracking functions.

MOTION OFF / DETECTION / TRACKING
You can enable the motion detection and tracking functions.

☒ If you set it to 'DETECTION', the 'FIX/MOVE' option of 'ADVANCED' menu will not be available.

☒ In following situations, motion detection and tracking function may not work properly.

- When there is sudden changes of brightness.
- When the device moves.
- When a certain object's movement fills most of the framing area.
- When there is difficulties in distinguishing the moving object and background.

ADVANCED OFF / FIX/MOVE
You can detect motions and mark the video that contains such motion, and enables tracking of the movement.

Selecting the 'FIX/MOVE' option will mark a region if an existing object disappears, or a new object appears and fixed for a certain period of time.

☒ In following situations, 'FIX/MOVE' detection may not work properly.

- When multiple motions continue arbitrarily.
- When the object that is fixed continues to move in the same position.
- When a newly appearing object conceals another object that is moving.

MASK AREA 1 / 2 / 3 / 4
Select the number of the area to be masked that will be excluded from motion detection.

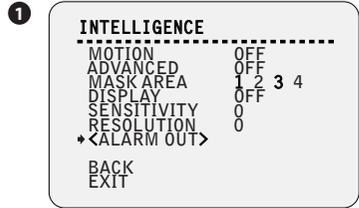
DISPLAY ON / OFF
When selected 'ON', it displays the motion detected and detection of configured advanced function.

SENSITIVITY 1 ~ 7
Sets the sensitivity of motion sensor.

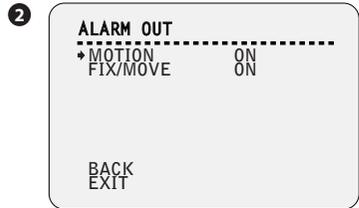
RESOLUTION 0 ~ 4
The bigger the resolution setting, the smaller the object that can be detected.

<ALARM OUT>
Start to 'ALARM OUT' menu.

3 OSD - INTELLIGENCE > ALARM OUT



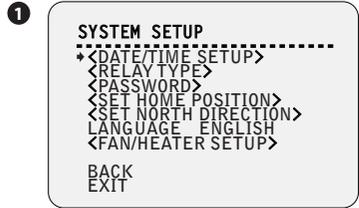
Press Near/Enter Key



2 ALARM OUT
When selected 'ON', it outputs alarm signal when the motion is detected and on a detection of configured advanced function.

MOTION	ON / OFF
FIX/MOVE	ON / OFF

OSD - SYSTEM SETUP



Press Near/Enter Key



1 SYSTEM SETUP
<DATE/TIME SETUP>
Moves to 'DATE/TIME SETUP' screen. Refer screen 2 below.

<RELAY TYPE>
Moves to 'RELAY TYPE' setup screen. Refer screen 3 below.

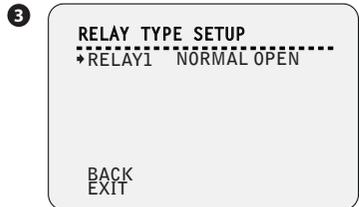
<PASSWORD>
Moves to 'PASSWORD' setup screen. Refer screen 4 below.

<SET HOME POSITION>
Moves to 'SET HOME POSITION' screen. Refer screen 5 on next page.

<SET NORTH DIRECTION>
Moves to 'SET NORTH DIRECTION' screen. Refer screen 6 on next page.

LANGUAGE ENGLISH / ESPAÑOL / FRANÇAIS / DEUTSCH / ITALIANO / РУССКИЙ / PORTUGUÉS
Select a preferred language among English, Spanish, French, German, Italian, Russian and Portuguese.

<FAN/HEATER SETUP>
Moves to 'FAN/HEATER SETUP' screen. Refer screen 7 on next page.
☒ This setup is only applicable for fan/heater model.



2 DATE/TIME SETUP
DATE 01 / JAN / 2000 ~ 31 / DEC / 2037
Date is displayed in dd/mm/yy format.
1. If you press the near key, the focus will be placed on 'dd'.
2. Sets date moving joystick Up/Down.
3. Moves joystick Left/Right to move to date-month-year.
4. The values in the field are changed using Up/Down keys.
☒ The day is automatically calculated when you set the day.

TIME
Time is displayed in HH:MM:SS format.
Sets time same as setting date.



3 RELAY TYPE SETUP
RELAY1 NORMAL OPEN(N.O) / NORMAL CLOSE(N.C)
- Contacts type of relay out are defined.
- Refer page 14 for the detailed information.

4 EDIT PASSWORD
- Sets the 4 characters long password. If this function is set to 'ENABLE', the password is required whenever you enter OSD menu. The master password is '4321'.
☒ To input password, refer 'LABEL' on page 29.

5

SET HOME POSITION

MOVE TO TARGET POSITION
[NEAR:SELECT/FAR:CANCEL]
0/0/x1/E

6

SET NORTH DIRECTION

MOVE TO TARGET POSITION
[NEAR:SELECT/FAR:CANCEL]
0/0/x1/N

7

FAN/HEATER SETUP

FAN RUN TEMP 25°C
HEATER RUN TEMP 5°C

BACK
EXIT

5 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 near key.
- Home is not effective to tilt angle.
- If you change the location of the home position, all horizontal location of functions such as preset, scan, pattern, group and privacy zone mask will be shifted based on the changed home position.

☒ 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 the same pan orientation. Therefore, all function data depending on pan orientation such as preset, scan, pattern, group 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.

☒ For setup, refer 'EDIT SCENE' on page 28.

6 SET NORTH DIRECTION

The direction will be displayed on the right-bottom of the screen, pan is '0' and direction is 'N'.

NEAR:SELECT/FAR:CANCEL
0/0/x1/N

7 FAN/HEATER SETUP

Sets the fan/heater enabled/disabled according to the temperature.

☒ This menu will be displayed only for fan/heater model.

FAN RUN TEMP 20°C ~ 80°C (68°F ~ 176°F)
Above this temperature, the blower fan will start automatically.

HEATER RUN TEMP -10°C ~ 20°C (14°F ~ 68°F)
Below this temperature, the heater will be tuned on automatically.

1

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

1 SYSTEM INITIALIZE

Initializes to the camera setting.

CLEAR ALL DATA NO / YES
Deletes all configuration data such as display, camera, motion setup and so on.

CLR DISPLAY SET NO / YES
Initializes display configuration.

CLR CAMERA SET NO / YES
Initializes camera configuration.

CLR MOTION SET NO / YES
Initializes motion configuration.

CLR FUNCTION SET NO / YES
Deletes preset data, scan data, pattern data, group data and schedule data.

REBOOT CAMERA NO / YES
Reboots zoom camera module.

REBOOT SYSTEM NO / YES
Reboots speed dome camera.

☒ OSD menu contents on next page, default values of each content are marked in bold.

OSD Menu Contents

ROOT MENU	The 1st screen	The 2nd screen	The 3rd screen	The 4th screen	Value		
<SYSTEM INFORMATION>	FIRMWARE VER				1.0		
	COLOR SYSTEM				NTSC (or PAL)		
	PROTOCOL				AUTO		
	BAUD RATE				2400		
	ADDRESS				1		
<DISPLAY SETUP>	ADDRESS				ON / OFF		
	CAMERA ID				TOP / BOT / 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>	MASK NO.				1(UNDEFINED) ~ 12(UNDEFINED)	
		DISPLAY				ON / OFF	
		CLEAR MASK				CANCEL / OK	
		<EDIT MASK>	Select the Target Position	Select the Mask Size			
	<STYLE>	MOSAIC				1 ~ 4 (Default: 1)	
		<COLOR>	Y-LEVEL			0 ~ 100 (Default: 0)	
			RED ADJUST				0 ~ 100 (Default: 0)
			BLUE ADJUST				0 ~ 100 (Default: 0)
TEMPERATURE				CELSIUS / FAHRENHEIT / OFF			
<MOTION SETUP>	PRESET LOCK				ON / OFF		
	PWR UP ACTION	ON / OFF / <PWR P>	Select the Target Position		ON / OFF		
	AUTO FLIP				ON / OFF		
	JOG MAX SPEED				2/SEC ~ 360/SEC (Default: 140/SEC)		
	JOG DIRECTION				INVERSE / NORMAL		
	FRZ IN PRESET				ON / OFF		
	<PARKING ACTION SETUP>	PARK ENABLE				ON / OFF	
		WAIT TIME				00:00:05 ~ 04:00:00	
		PARK ACTION				HOME / PRESET / SCAN / PATTERN / GROUP	
	<ALARM INPUT SETUP>	ALARM TYPE				N.O(Normal Open) / N.C(Normal Close)	
		ALARM ACTION				NOT USED / HOME / PRESET 1~128 (Excluding 95) / SCAN 1~8 / PATTERN 1~4 / GROUP 1~4	
	<FUNCTION SETUP>	<PRESET SETUP>	PRESET NO.			1(UNDEFINED) ~ 128(UNDEFINED)	
<EDIT SCENE>			Select the Camera location				
<LABEL>			Input Label				
CLR PRESET						CANCEL / OK	
CAM ADJUST						GENERAL / SPECIAL	
<SCAN SETUP>		SCAN NO.				1(UNDEFINED) ~ 8(UNDEFINED)	
		1ST POSITION				PRESET 1 ~ 128 (Excluding 95)	
		2ND POSITION				PRESET 1 ~ 128 (Excluding 95)	
		SCAN SPEED				1/SEC ~ 180/SEC (Default: 30/SEC)	
		CLEAR SCAN				CANCEL / OK	
<PATTERN SETUP>		PATTERN NO.				1(UNDEFINED) ~ 4(UNDEFINED)	
		CLR PATTERN				CANCEL / OK	
		<EDIT PATTERN>	Select the Camera location				

OSD Menu Contents

ROOT MENU	The 1st screen	The 2nd screen	The 3rd screen	The 4th screen	Value		
<FUNCTION SETUP>	<GROUP SETUP>	GROUP NO.			1(UNDEFINED) ~ 8(UNDEFINED)		
		CLEAR GROUP			CANCEL / OK		
		<EDIT GROUP>	Select the camera action, operation time and option			1(NONE) ~ 20(NONE)	
	<SCHEDULE SETUP>	MASTER ENABLE				ON / OFF	
		Schedule No.				1(UNDEFINED) ~ 7(UNDEFINED)	
<ZOOM CAMERA SETUP>	FOCUS MODE				AUTO / MANUAL / SEMIAUTO		
	DIGITAL ZOOM				ON / OFF		
	IMAGE FLIP				ON / OFF		
	FLICKERLESS				ON / OFF		
	DIS MODE				ON / OFF		
	<WHITE BALANCE SETUP>	DAY/NIGHT				Day / Night	
		WB MODE				ATW1 / ATW2 / AWC> / 3200K / 5600K / OFF	
		BRIGHTNESS				LOW / MIDDLE / HIGH	
		RED ADJUST				-32 ~ +32(Default: 0)	
		BLUE ADJUST				-32 ~ +32(Default: 0)	
		R-GAIN				0 ~ 1023(Default: 64)	
	B-GAIN				0 ~ 1023(Default: 64)		
	<EXPOSURE SETUP>	IRIS	<ALC>	IRIS LEVEL		-32 ~ +32(Default: 0)	
				BACKLIGHT			OFF / WDR / BLC
				(BLC)AREA			CENTER / TOP / BOTTOM / LEFT / RIGHT / USER
				(WDR)WEIGHT			LOW / MIDDLE / HIGH
				(WDR)WDR LEVEL			-9 ~ 9 (Default: 0)
			(WDR)WHITE BAL			INDOOR / OUTDOOR	
			IRIS LEVEL			-32 ~ +32(Default: 0)	
			DAY/NIGHT	DAY			
				NIGHT			
				<AUTO>	BURST		
BRIGHTNESS						LOW / MIDDLE / HIGH	
DWELL TIME						2 SEC ~ 30 SEC (Default: 5 SEC)	
MASK AREA					1 / 2 (Default: Undefined)		
AGC					VERY LOW / LOW / MIDDLE / HIGH / VERY HIGH / USER 1~16 / FIX 1~16		
MOTION					S.SLOW / SLOW / NORMAL / FAST / F.FAST		
SHUTTER SPD					OFF / 1/100 ~ 1/10K		
SENS-UP				OFF / AUTO x2 ~ AUTO x256 / FIX x2 ~ FIX x256 (Default: AUTO x4)			
<SPECIAL>	DNR				OFF / LOW / MIDDLE / HIGH / USER 1~16		
	ZOOM SPEED				1 ~ 4 (Default: 4)		
	DETAIL				0 ~ 3 (Default: 2)		
	AGC COLOR SUP				LOW / MIDDLE / HIGH		
	PIP				ON / OFF		
	POSI/NEGA				+ / -		
<INTELLIGENCE>	MOTION				OFF / DETECTION / TRACKING		
	ADVANCED				OFF / FIX/MOVE		
	MASK AREA				1 / 2 / 3 / 4 (Default: Undefined)		
	DISPLAY				ON / OFF		
	SENSITIVITY				1 ~ 7 (Default: 5)		
	RESOLUTION				0 ~ 4 (Default: 3)		
	<ALARM OUT>	MOTION				ON / OFF	
		FIX/MOVE				ON / OFF	

3

OSD Menu Contents

ROOT MENU	The 1st screen	The 2nd screen	Value
<SYSTEM SETUP>	<DATE/TIME SETUP>	DATE	dd / mm / yyyy
		TIME	hh : mm : ss
	<RELAY TYPE>	RELAY 1	NORMAL OPEN / NORMAL CLOSE
	<PASSWORD>	Input Password	
	<SET HOME POSITION>	Select the Camera location	
	<SET NORTH DIRECTION>	Select the Camera location	
	LANGUAGE		ENGLISH / ESPAÑOL / FRANÇAIS / DEUTSCH / ITALIANO / РУССКИЙ / PORTUGUÊS
	<FAN/HEATER SETUP> ☒	FAN RUN TEMP	20°C ~ 80°C (68°F ~ 176°F) (Default: 25°C)
HEATER RUN TEMP		-10°C ~ 20°C (14°F ~ 68°F) (Default: 5°C)	
<SYSTEM INITIALIZE>	CLEAR ALL DATA		NO / YES
	CLR DISPLAY SET		NO / YES
	CLR CAMERA SET		NO / YES
	CLR MOTION SET		NO / YES
	CLR FUNCTION SET		NO / YES
	REBOOT CAMERA		NO / YES
	REBOOT SYSTEM		NO / YES

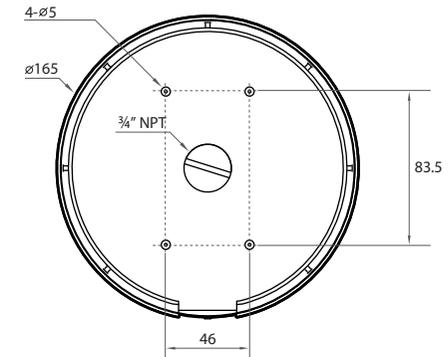
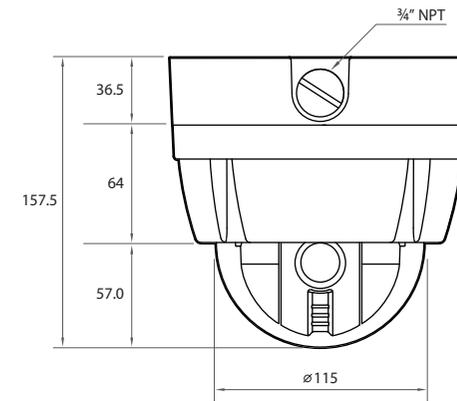
☒ The bold characters of the value are the default value of the system. (Refer page 45 – 'SYSTEM INITIALIZE')

☒ The menu of 'ROOT MENU>SYSTEM SETUP>FAN/HEATER SETUP' is applicable only for fan/heater model.

4

Dimension

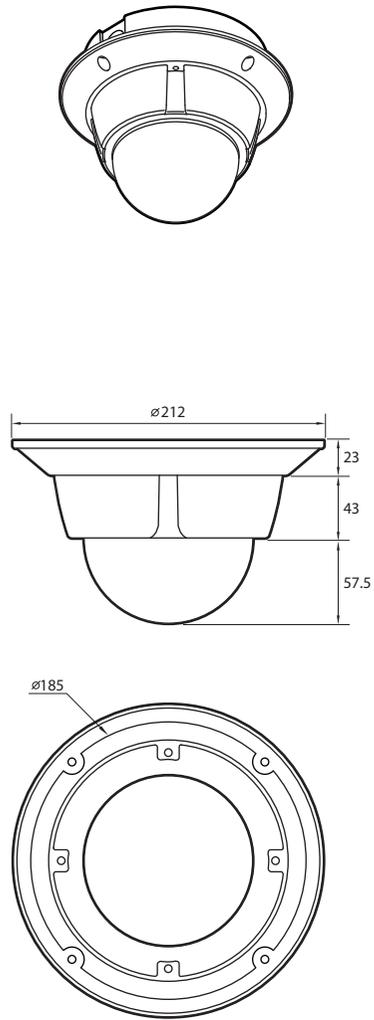
Unit: mm



4 Dimensions of Option Brackets

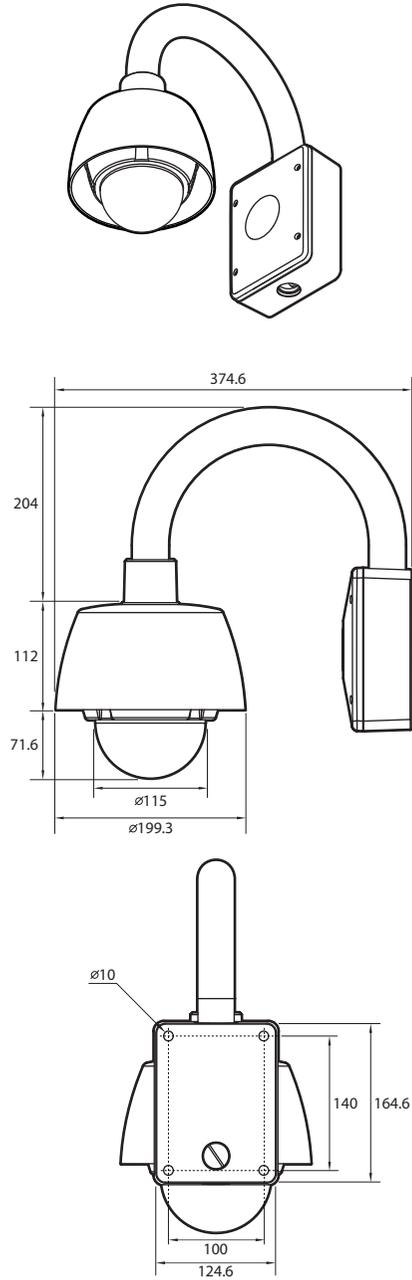
1. Flush Mount Ring Bracket

Unit: mm



2. Sun Shield Mount Bracket

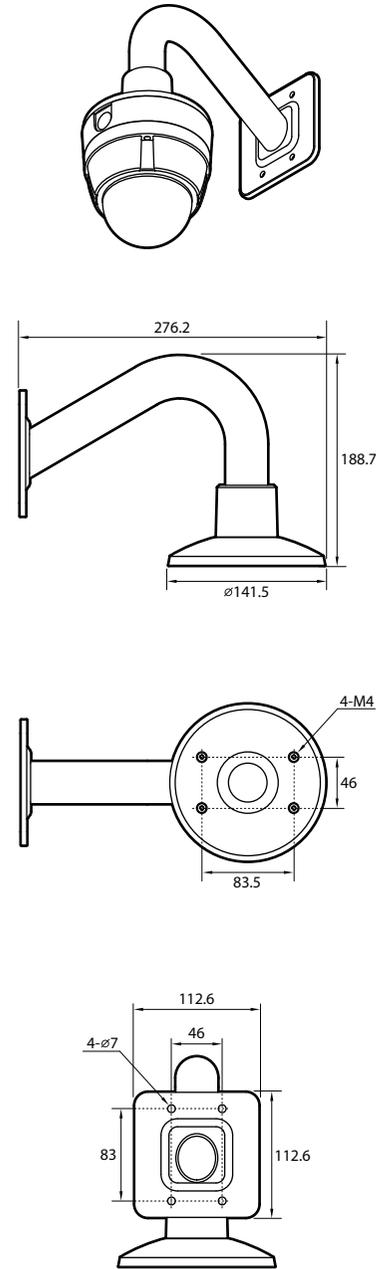
Unit: mm



Dimensions of Option Brackets

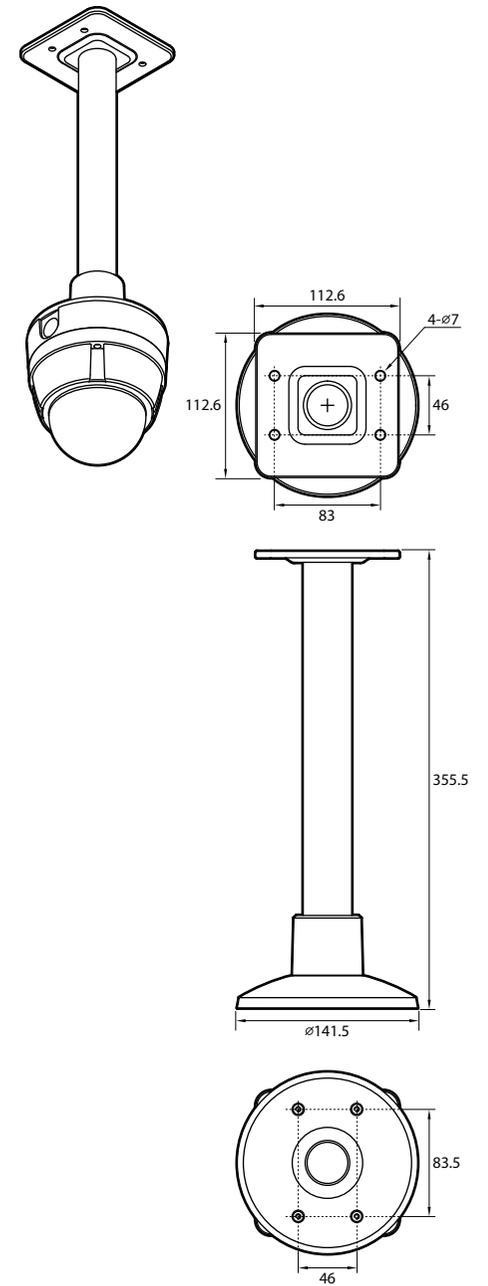
3. Wall Mount Bracket

Unit: mm



2. Ceiling Mount Bracket

Unit: mm



4 Specification

Camera	Image Device	1/4" SONY Super-HD CCD	
	Total Pixel	NTSC : 410K pixels [811 (H) x 508 (V)] • PAL : 470K pixels [795 (H) x 596 (V)]	
	Effective Pixel	NTSC : 380K pixels [768 (H) x 494 (V)] • PAL : 440K pixels [752 (H) x 582 (V)]	
	H. Resolution	Color: 560 TV Lines • B/W: 600 TV Lines	
	S/N Ratio	50dB	
	Zoom	x12 Optical Zoom & x12 Digital Zoom	
	Focal Length	F1.6 to F2.0, f=3.6mm~ 44.3mm2.1(T)	
	Min. Illuminance	Color: 1.2 Lux(Sens up Off), 0.004 Lux (Sens up x 256) @ 50 IRE B/W:0.12Lux(Sens up Off), 0.0004 Lux (Sens up x 256) @ 50 IRE	
	Day & Night	AUTO / DAY / NIGHT (ICR)	
	Focus	AUTO / MANUAL / SEMIAUTO	
	Angle of View	H:54.44° (W) ~ 4.64°(T) • V: 41.42° (W) ~ 3.52°(T)	
	Shutter Speed	NTSC : x256~x2, 1/60~1/10,000 sec. • PAL : x256~x2, 1/50~1/10,000 sec.	
	White Balance	ATW1 / ATW2 / AWC(Red&Blue Adjust and Gain adjustable) / 3200K / 5600K	
	AGC	OFF / VERY LOW / LOW / MIDDLE / HIGH / VERY HIGH / USER 1~16 / FIX 1~16	
	Backlight	OFF / WDR / BLC	
	DNR	OFF / LOW / MIDDLE / HIGH / USER 1~16	
DIS	ON / OFF		
Other Functions	FRZ IN PRESET, INTELLIGENCE		
Pan / Tilt	Range	Pan: 360° (Endless) Tilt: 0° ~ 180° (Auto-Flip On), 0° ~ 90° (Auto-Flip Off)	
	Pan/Tilt Speed	Preset: 360°/sec Manual: 0.05° ~ 360°/sec (Zoom Proportional) Scan: 1° ~ 180°/sec	
	Preset	127 Presets with Labels / Independent Camera Setup	
	Pattern	4 Patterns	
	Scan	8 Scans	
	Group	8 Groups (Max. 20 Enters for Each Group)	
	Schedule	7 Rules (Condition: Day, Time → Action: Preset, Scan, Group, Pattern)	
	Other Functions	Image Auto Flip, Auto Parking, Power-up Action & etc.	
	General	Video Out	CVBS: 1.0 V p-p / 75Ω
		Communication	RS-485
Protocol		Auto, Pelco-D, Pelco-P, Samsung, Panasonic, GE(Kalatel), AD(American Dynamics) Selectable	
Privacy Zone		12 Zones	
Sensor In/Out		Built-in 2 Input / 1 Relay Output	
OSD		Temperature, Day and Date & Time Display, Support 7 Languages: ENGLISH / ESPAÑOL / FRANÇAIS / DEUTSCH / ITALIANO / РУССКИЙ / PORTUGUÊS	
Power		DC 12V(8W) (Fan & Heater Model Consumes 20W) Dual Voltage Model: AC 24V (21W) / DC 12V (12W)	
Approvals		FCC, CE, RoHS, IP66	
Outdoor Housing		IP 66 / Vandal Proof Structure (Housing & Accessories : AL Die-cast), (Dome cover:PC)	
Demension		Dome: Ø115 mm Housing : Ø165 x 101.5(H) mm	
Weight		Approx. 2.4 Kg (5.3Lbs)	
Operating Temp.		-10°C ~ 50°C (14°F ~ 122°F) Fan & Heater Model: -40°C ~ 50°C (-40°F ~ 122°F)	