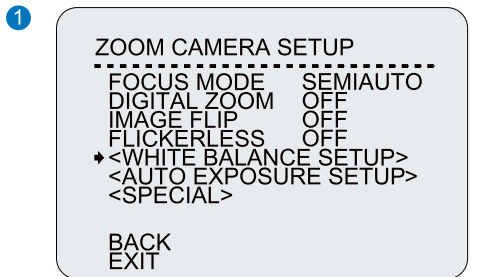


PTZ-A10X

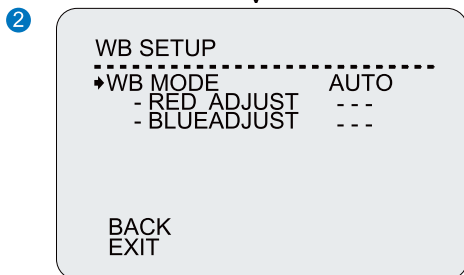


CCTV PTZ Camera
with 12x Optical Zoom (Sony Zoom Module)

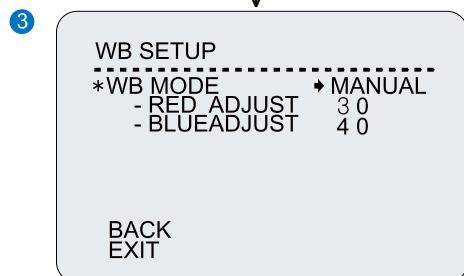
3 OSD - CAMERA SETUP >WB SETUP



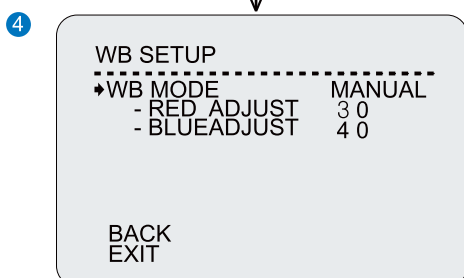
Press Near/Enter Key



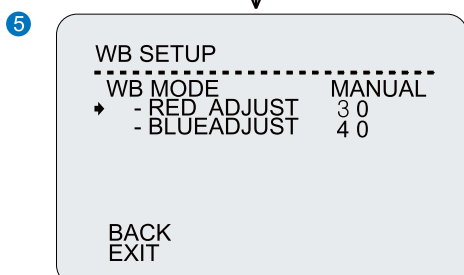
Press Near Key,
Joystick Down



Press Near/Enter Key



Joystick Down



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.

<WHITE BALANCE SETUP>

Starts 'WHITE BALANCE SETUP' setup screen.

<AUTO EXPOSURE SETUP>

Starts 'AUTO EXPOSURE SETUP' setup screen.

<SPECIAL>

Starts 'SPECIAL' setup screen.

2 WB SETUP

WB MODE AUTO / MANUAL / ATW / AWC / OUTDOOR / INDOOR

- AUTO: Camera perform white balance automatically.
- Manual: R/B gain level can be set up manually.
- ATW: Auto White Balance is performed in the wider range of color temperature than that of the 'AUTO' mode.
- AWC: When right direction key is clicked, one time white balance is performed for current illumination condition and the value is kept.
- INDOOR: WB will be done under assumption of Indoor illumination.
- OUTDOOR: WB will be done under assumption of Sun light.

RED ADJUST 0 ~ 255

BLUE ADJUST 0 ~ 255

3 OSD - CAMERA SETUP > AE SETUP

1

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

Press Near/Enter Key

2

AE SETUP	
* WDR/BLC	ALL OFF
DAY/NIGHT	AUTO
AE MODE	AUTO
■ IRIS LEVEL	---
■ GAIN LEVEL	---
■ SHUTTER SPD	---
■ BRIGHTNESS	---
■ SENS-UP	OFF
BACK	
EXIT	

2 AE SETUP

WDR/BLC	ALL OFF / WDR ON / BLC ON
---------	---------------------------

Sets the backlight compensation.

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 LEVEL	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)
------------	---

Works when 'AE MODE' is 'MANUAL' or 'IRIS' mode.

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

Works when 'AE MODE' is 'MANUAL'.

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

SHUTTER SPD	x64 / x32 / x16 / x8 / x4 / x2 / 1/60 / 1/90 / 1/100 / 1/125 / 1/180 / 1/250 / 1/350 / 1/500 / 1/725 / 1/1000 / 1/1500 / 1/2000 / 1/3000 / 1/4000 / 1/6000 / 1/10000 (22 steps)
-------------	---

Works when 'AE MODE' is 'MANUAL' or 'SHUTTER' mode.

BRIGHTNESS	0~31 (32 steps)
------------	-----------------

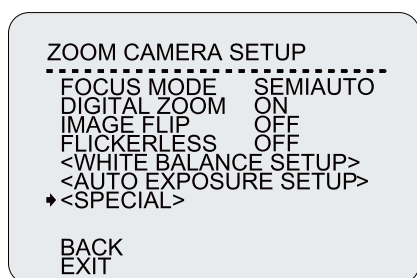
Works when 'AE MODE' is 'BRIGHT'.

Adjusts brightness of images. Iris, shutter speed and gain are adjusted automatically in correspondence with this value.

SENS-UP	OFF / x2 / x4 / x8 / x16 / x32 / x64 / x128 / x256 / x512
---------	---

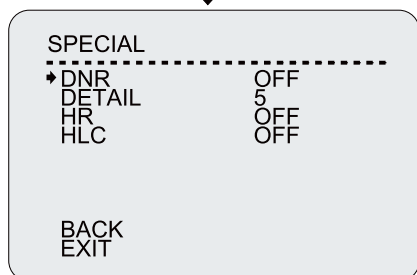
3 OSD - CAMERA SETUP > SPECIAL

1



Press Near/Enter Key

2



2 SPECIAL

Sets the special function related to the image.

DNR OFF / AUTO / MANUAL(1~10)

If reduces the noise caused by 'AGC' action. If set to AUTO or MANUAL, the noise will be reduced but the ghost effect on moving objects will be increased.

DETAIL 0 ~ 15

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.

HR(High Resolution) ON / OFF

This mode enhances edges and produces higher definition images.

HLC ON / OFF

Part where becomes brightness more than the standard value is automatically hid by mask on the video.

3 OSD - SYSTEM SETUP

1

```
SYSTEM SETUP
-----
▶<RELAYTYPE>
<PASSWORD>
<SET HOME POSITION>
<SET NORTH DIRECTION>
LANGUAGE ENGLISH
<FAN HEATER SETUP>
<PROTOCOL/BAUDRATE>

BACK
EXIT
```

2

```
RELAY TYPE SETUP
-----
▶RELAY1 NORMAL OPEN

BACK
EXIT
```

3

```
EDIT PASSWORD
-----
[ ] _ _ _ _ _ _ _ _ _ _
1 234567890 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 < > - / : . ' <
```

4

```
SET HOME POSOTION
-----

MOVETOTARGET POSITION
[NEAR:SELECT/FAR:CANCEL]
0/0/x1/E
```

1 SYSTEM SETUP

<RELAY TYPE>
Start'RELAY TYPE'setup.

<PASSWORD>
Start'PASSWORD'setup.

<SET HOME POSITION>
Starts'SET HOME POSITION'setup. See the screen 4 below.

<SET NORTH DIRECTION>
Starts'SET NORTH DIRECTION'setup.

LANGUAGE ENGLISH / ESPAÑOL / FRANÇAIS / DEUTSCH
/ ITALIANO / РУССКИЙ / PORTUGU ÊS
You can select a preferred Language of OSD display from 7 choices.
After selecting a language, press near or enter key.

<FAN HEATER SETUP>
Moves to'FAN HEATER SETUP'screen.

※ This setup is only applicable for fan/heater model.

<PROTOCOL/BAUDRATE>
Moves to'PROTOCOL/BAUDRATE'screen.

2 RELAY TYPE SETUP

RELAY1 NORMAL OPEN(N.O) / NORMAL CLOSE(N.C)
Contacts type of of 4ch. Relay out are defined.

3 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 default password is'4321'and the master password is'- - > g'.

4 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. Home is not effective to tilt angle.

By using joystick, move the camera to the desired position and press near key.

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.

If there are no setup for those functions like preset, pattern, scan, group camera will automatically move to home position after rebooting.

If power up action is set to be on, camera will continue the function which is executed lastly after rebooting. 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 maintain 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.

3 OSD - SYSTEM SETUP

5

SET NORTH DIRECTION

MOVETOTARGET POSITION
[NEAR:SELECT/FAR:CANCEL]
0/0/x1/ N

5 SET 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



Direction will be displayed from:

N(North) / S(South) / E(East) / W(West) / NE(Northeast) / NW(Northwest) / SE(Southeast) / SW(Southwest).

6

FAN HEATER SETUP

▶ FAN RUNTEMP 25°C
HEATER RUNTEMP 5°C

BACK
EXIT

6 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 20C ~ 80C (68F ~ 176F)

Above this temperature, the blower fan will start automatically.

HEATER RUN TEMP -10C ~ 20C (14F ~ 68F)

Below this temperature, the heater will be tuned on automatically.

7

PROTOCOL/BAUDRATE

▶ PROTOCOL PELCO-D
BAUDRATE 2400

BACK
EXIT

Press the
Near/Enter Key

8

PROTOCOL/BAUDRATE

* PROTOCOL * PELCO-D
BAUDRATE 2400

BACK
EXIT

Move the
Joystick Down

9

PROTOCOL/BAUDRATE

* PROTOCOL * PELCO-P
BAUDRATE 2400

BACK
EXIT

7 PROTOCOL/BAUDRATE

After installing the camera, you should set the communication protocol and baudrate.

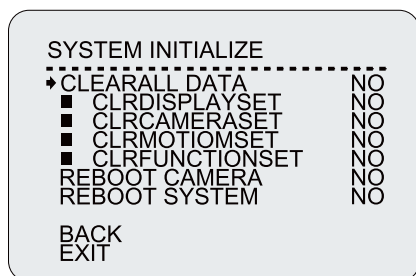
PROTOCOL AUTO / PELCO-D / PELCO-P / SAMSUNG-E /
PANASONIC / KALATEL / AD / SAMSUNG-S /
VICON / VCLTP / HONEYWELL / BOSCH

- Select the appropriate protocol.
- If you set the protocol as 'Auto' protocol, camera will automatically recognize PELCO-D, PELCO-P or 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 change camera protocol by changing DIP switch, the change will be effective after you reboot the camera.

BAUDRATE 2400 / 4800 / 9600 / 19200 / 38400

Select the appropriate baud rate.

3 OSD - SYSTEM INITIALIZE



SYSTEM INITIALIZE

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

CLR DISPLAY SET YES / NO
Initializes display configuration.

CLR CAMERA SET YES / NO
Initializes camera configuration.

CLR MOTION SET YES / NO
Initializes motion configuration.

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

REBOOT CAMERA YES / NO
Reboots zoom camera module.

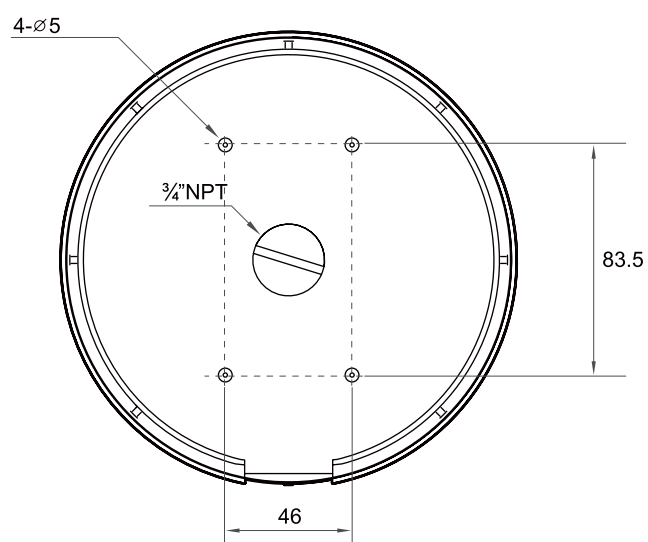
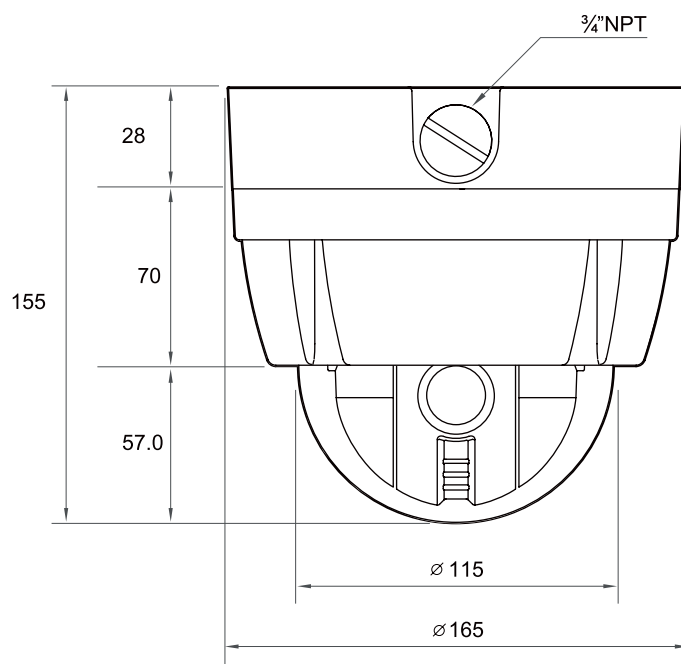
REBOOT SYSTEM YES / NO
Reboots speed dome camera.

Initial Configuration Table

Camera ID	ON	Display
PTZ Information	AUTO	
Action Title	AUTO	
Preset Label	AUTO	
Alarm I/O	AUTO	
Date/Time	ON	
Privacy Zone	Undefined	Motion
Preset Lock	OFF	
Power Up Action	ON	
Auto Flip	ON	
Jog Max Speed	140/sec	
Jog Direction	NORMAL	
Freeze In Preset	OFF	Function
Park Action	OFF	
Preset 1~255	Undefined	
Scan 1~8	Undefined	
Pattern 1~4	Undefined	
Group 1~8	Undefined	
Schedule 1~7	Undefined	Camera
Focus Mode	AUTO	
Digital Zoom	OFF	
Image Flip	OFF	
Flickerless	OFF	
White Balance	AUTO	
WDR/BLC	ALL OFF	
Day/Night	AUTO	
AE Mode	AUTO	
Iris Level	-	
Gain Level	-	
Shutter Speed	-	
Brightness	-	
Sens-up	OFF	
DNR	OFF	
Detail	5	
HR	OFF	
HLC	OFF	
Relay Type	Normal Open	System
Language	English	
Fan Run Temp	25	
Heater Run Temp	5	
Protocol	AUTO	
Baud Rate	2400	

4 Specifications - Dimension

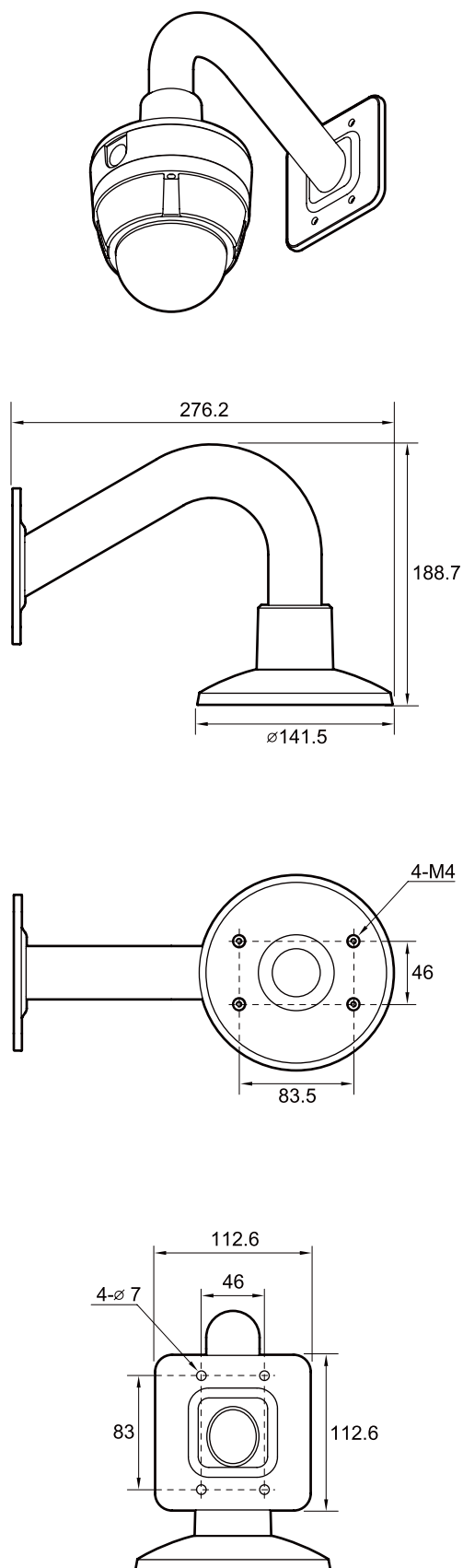
Unit: mm



4 Specifications - Dimensions of Option Brackets

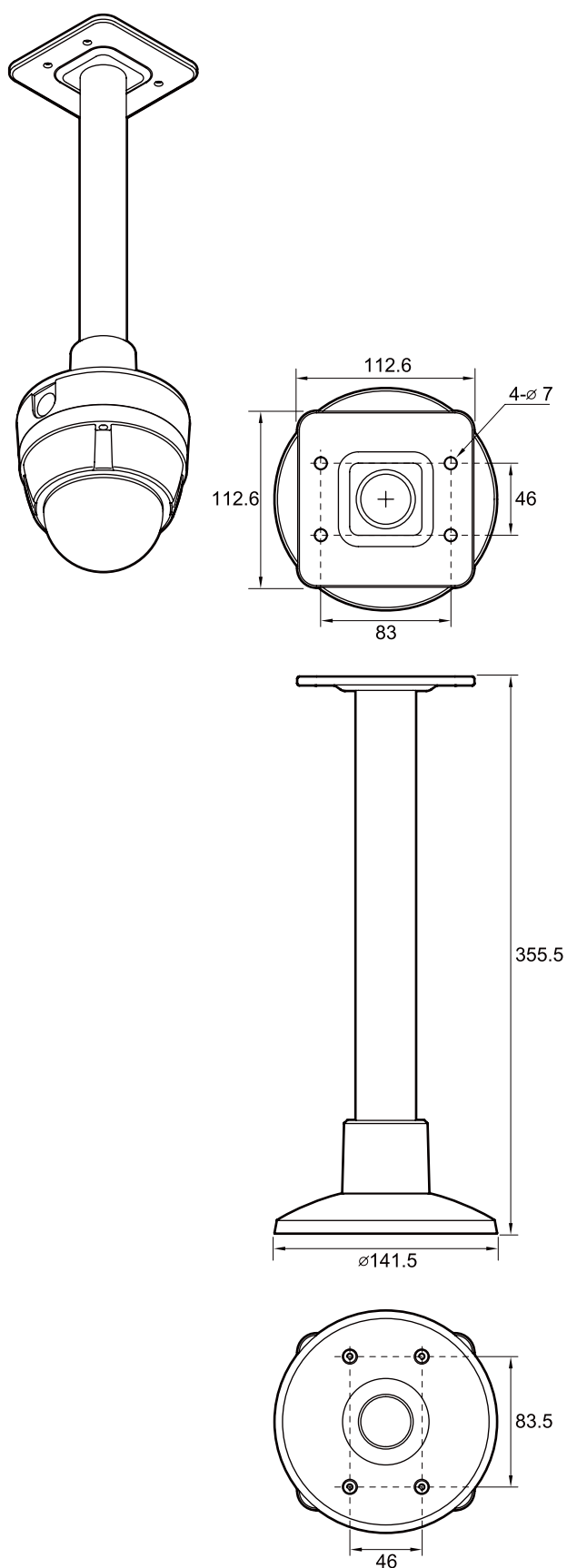
1. Wall Mount Bracket

Unit: mm



2. Ceiling Mount Bracket

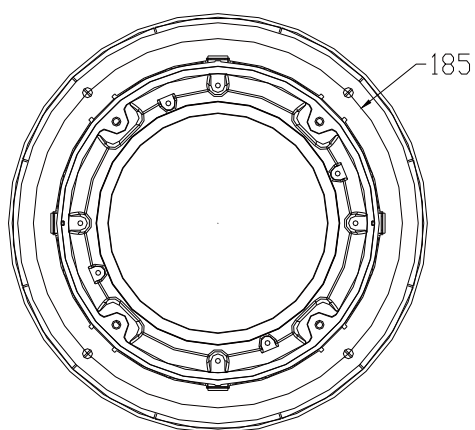
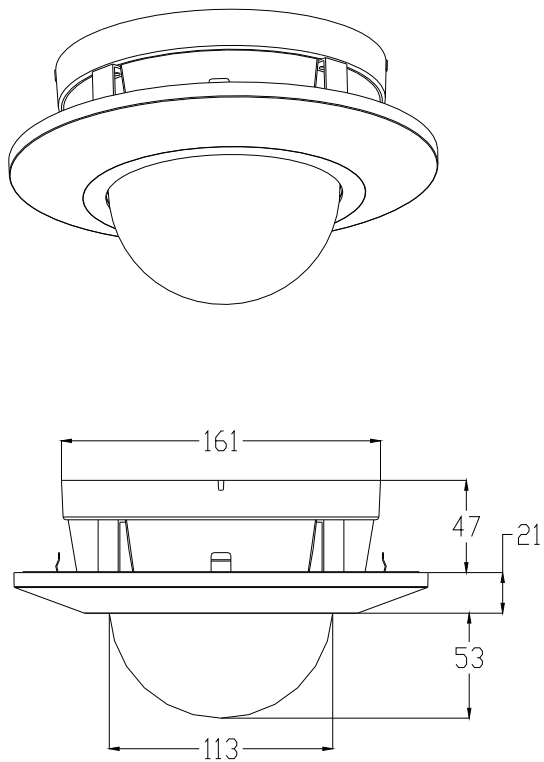
Unit: mm



4 Specifications - Dimensions of Option Brackets

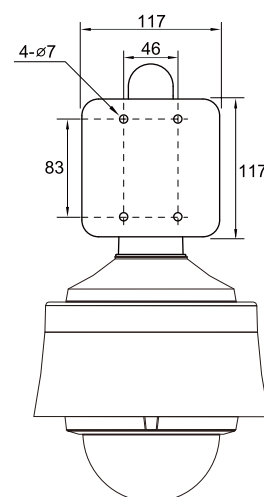
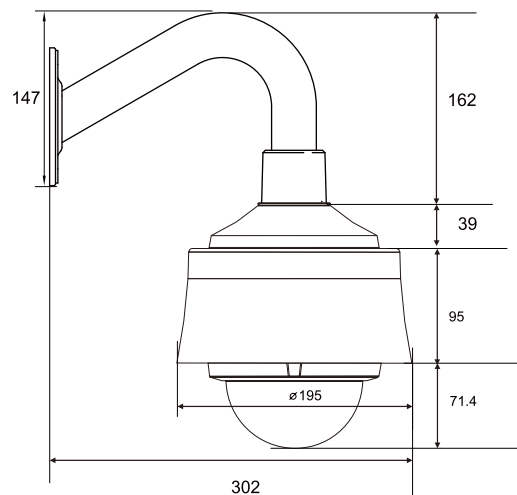
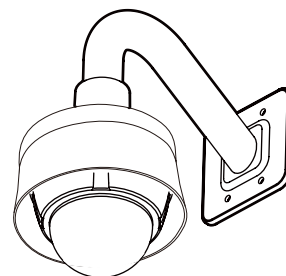
3. Flush Mount Bracket

Unit: mm



4. Sun Shield Mount Bracket

Unit: mm



4 Specifications- Specification

Camera

Image Device	1/4" SONY Super HAD II Double Scan CCD	
Effective Pixel	NTSC : 1028(H) x 508(V) PAL : 1028(H) x 596(V)	
H. Resolution	Color: 600 TV Line B/W: 650TV Line	
Zoom	12xOptical Zoom & x32 Digital Zoom	
Lens	f = 1.6(wide) ~ 2.7(tele) 3.8(Wide) ~45.6 (Tele)	
Min. Illuminance	Color: 0.5 Lux (DSS Off), 0.001 Lux (DSS On) B/W: 0.2 Lux (DSS Off), 0.0004 Lux (DSS ON)	
Shutter Speed	NTSC : 1/60~100,000 sec. PAL : 1/50~100,000 sec.	
Day & Night	Auto / Day / Night (ICR)	
Focus	Auto / Manual / Semi-auto	
White Balance	Auto / Manual / ATW / AWC / Outdoor / Indoor	
AGC	Auto / Manual / Max Gain Limit	
WDR	On / Off	
DNR	On / Off	
Other Functions	System Image Flip by Installation Type	

Pan/Tilt

Pan Range	360 (Endless)
Tilt Range	180(Auto-Flip On), 90(Auto-Flip Off)
Pan/Tilt Speed	Preset: 360
	Scan: 1 ~ 180/sec.
	Manual: 0.05 ~ 360/sec. (Zoom Proportional)
Preset	127 Presets with Labels
Pattern	4 Patterns
Scan	8 Scans
Group	8 Groups (Max. 20 Entities per Group)
Other Functions	Image Auto Flip, Auto Parking, Power-up Action & etc.

General

Video Out	BNC (VBS 1.0 V)
Sensor In/Out	Built-in 2 Input / 1 Output
Material	Body: Aluminum Die-casting • Clear Bubble: Polycarbonate
Approvals	FCC, CE, IP66, RoHS
Power	Dual Voltage: DC 12V • AC 24V / 10W
Housing	Vandal Proof Structure, White Pearl Color
Weight	Net: 1.9 Kg • Package: 3 Kg
Operating Temp.	-10 ~ 50 C (14 ~ 122 F)

※ With Sunshield Mount Type(Heater Model)

Power	Dual Voltage: DC 12V • AC 24V / Heater On: 21W, Heater Off: 10W
Housing	Weather Proof, Vandal Proof Structure, White Pearl Color
Weight	Net: 2.5 Kg • Package: 3.5 Kg
Operating Temp.	-45 ~ 50 C (-49 ~ 122 F)

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 SERVICE 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.

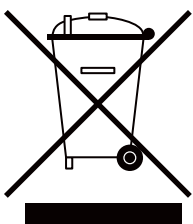
Installation and Storage

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 aswimming 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 fromover-heating. Theopeningsshould 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 abookcase or rack unless proper ventilation is provided and the manufacturer's unstructions have been adhere 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 thecart/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.





Disposal of Your Old Appliance

1. When this crossed-out wheel bin symbol is attached to a product it means the product is covered by the European Directive 2002/96/EC.
2. All electrical and electronic products should be disposed of separately from the municipal waste stream via designated by the government or the local authorities.
3. The correct disposal of your old appliance will help prevent potential negative consequences for the environment and human health.
4. For more detailed information about disposal of your old appliance, please contact your city office , waste disposal service or the shop where you purchased the product.

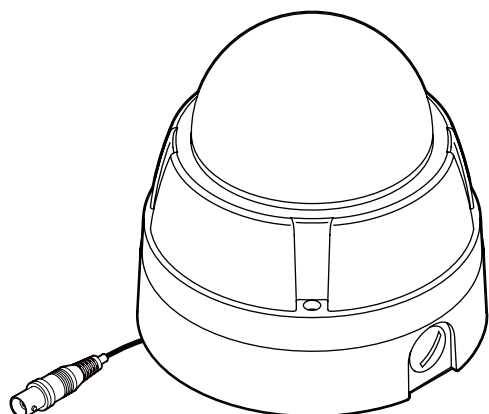


This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

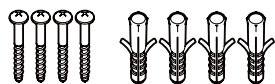
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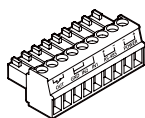
1 Introduction - Product & Accessories



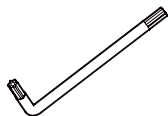
① Main Body + ② Ceiling Mount Bracket



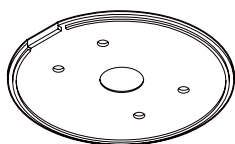
③ Screw & Plastic Anchor-4pcs



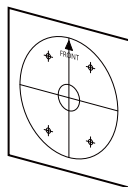
④ 9P Terminal Block



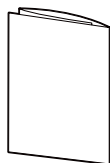
⑤ Torx Wrench



⑥ Rubber Gasket



⑦ Template Sheet

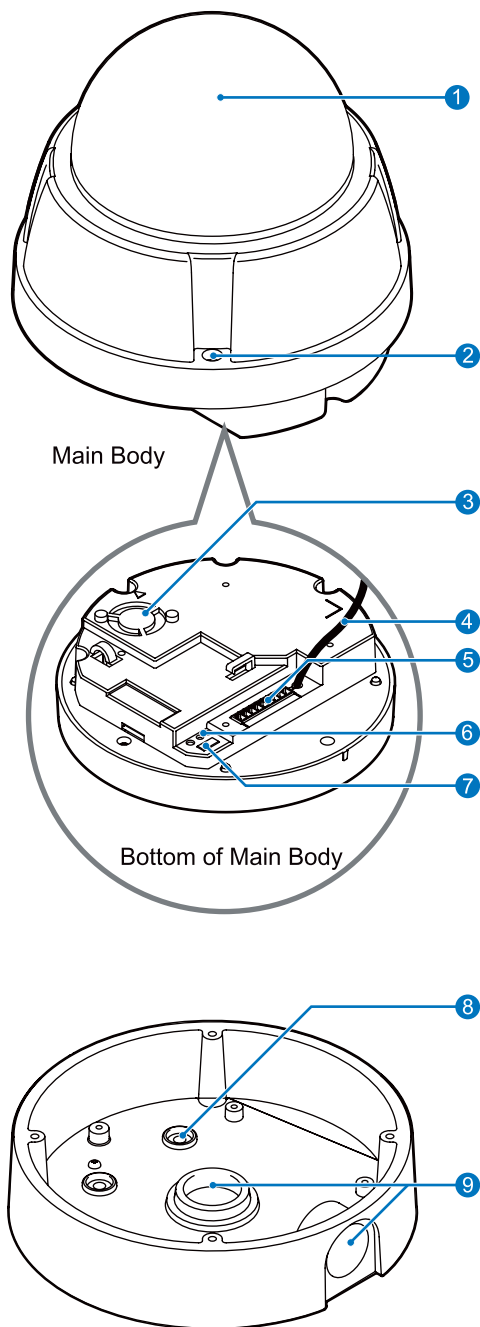


⑧ Quick Manual

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

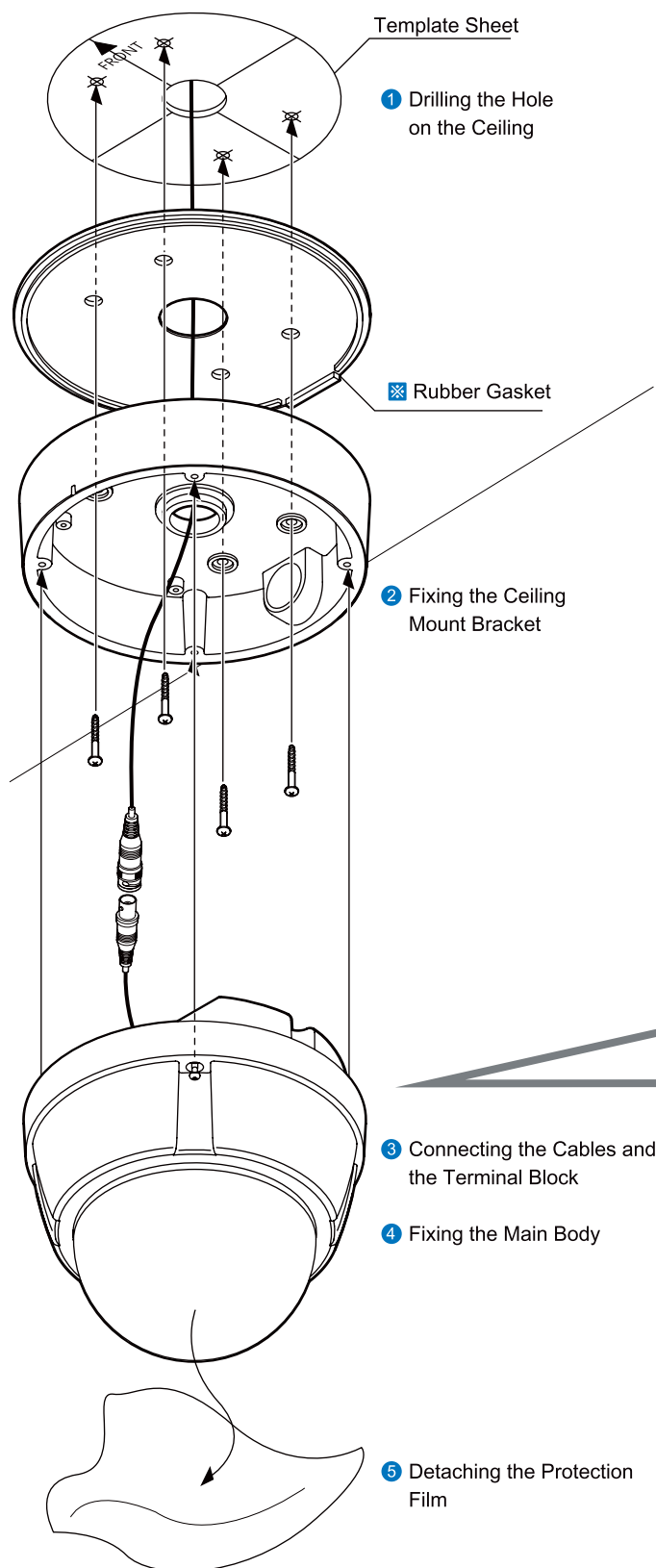
- ① Main Body
Camera module, BNC video cable, screws, terminal block slot are included.
- ② Ceiling Mount Bracket
-It is used when installing the camera on to the ceiling or bracket.
-To install the camera with the ceiling mount bracket, the bracket needs to be separated from the main body, then needs to be re-assembled the bracket and the main body according to the order.
- ③ Screw & Plastic Anchor
- Screws are used to fix the ceiling mount bracket to the ceiling or bracket.
- Plastic anchors are used to tighten the screws to the hole by inserting them into the holes in advance.
- ④ Terminal Block
Power, video, RS-485 and alarm input/output cables are connected through the terminal blocks to the camera.
- ⑤ Torx Wrench
It is used to screw/unscrew the fixed lock-up screws on the main body.
- ⑥ Rubber Gasket
It is installed between the ceiling mount bracket and wall/ceiling or other mount bracket to prevent the water leakage.
- ⑦ Template Sheet
It is used to decide accurate installation location.
- ⑧ Quick Manual
It gives a concise explanation of the installation of the camera.

1 Introduction - Part Name & Functions



- 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 ceiling mount bracket.
- 3 Fan
 - Fan for temperature control.
- 4 BNC Video Cable
 - Main video output cable.
- 5 9P Terminal Block Slot
 - 9P terminal block that is connected with cables is inserted in this slot.
- 6 LED & Reset Button
 - LED for active(yellow light), power(red light) status and Reset button for reset camera.
- 7 ID Setup Switch
 - Specify the camera ID.
- 8 Mounting Hole
 - This is used to attach the ceiling mount bracket to the ceiling.
- 9 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 Installation - Installation Using Ceiling Mount Bracket

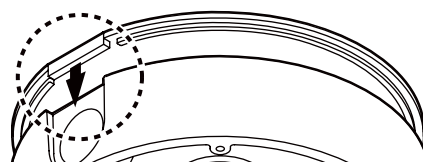


✖ Disassemble the main body with the ceiling mount before installation the camera.

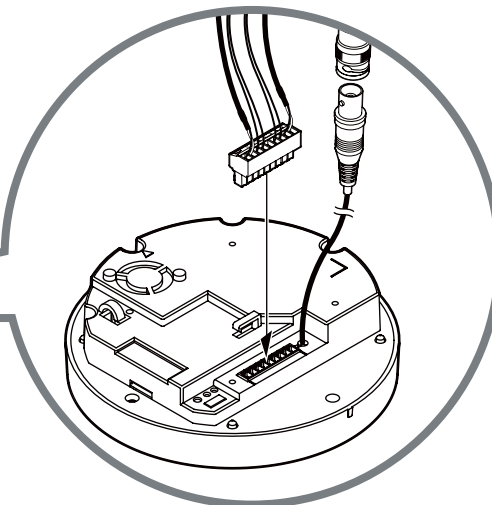
- 1 Drilling a Hole on the Ceiling
Using provided template sheet, drill a hole (30mm diameter) on the ceiling panel to pass cables.
- 2 Fixing the Ceiling Mount Bracket
Pass the cables through the $\frac{3}{4}$ " pipe hole, and screw the ceiling mount bracket to the ceiling.

✖ 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 ceiling mount bracket.

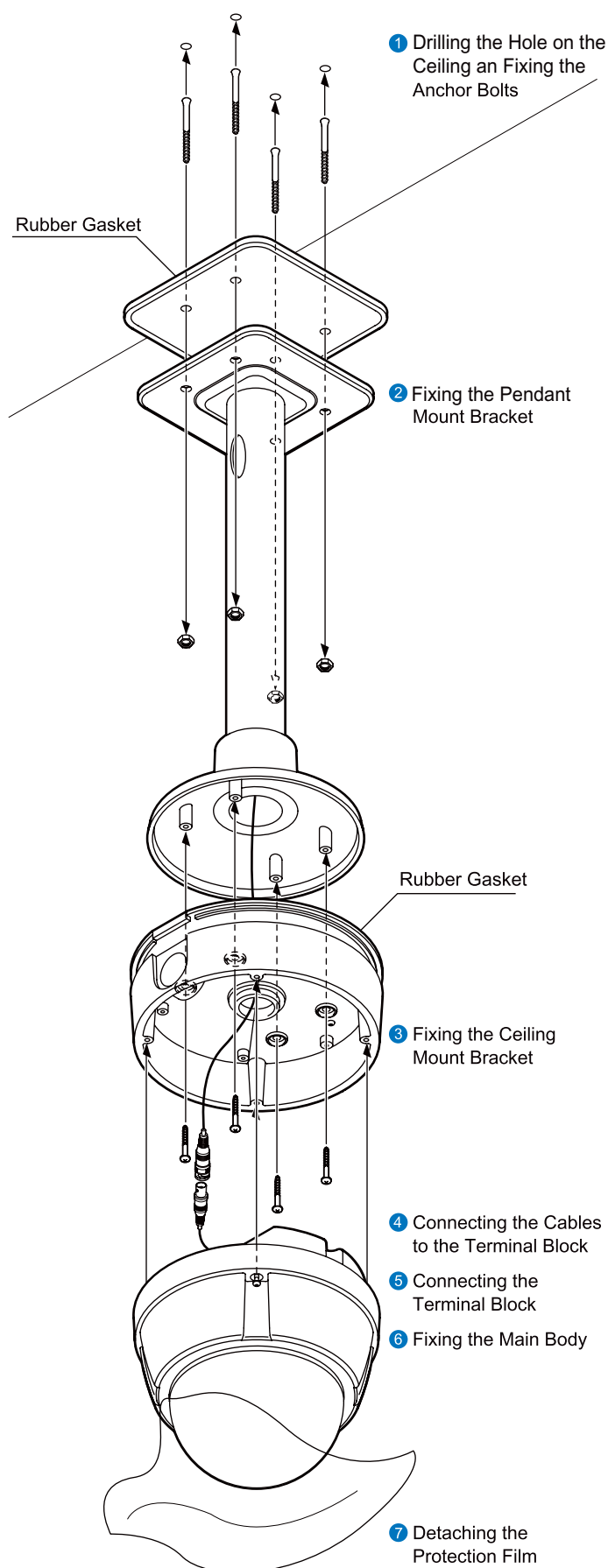


- 3 Connecting the Cables and the Terminal Block
Connect the cables to the terminal block and then put the terminal block in the slot of the main body. (See the section 'Terminal Block' for details.)



- 4 Fixing the Main Body
Screw the main body to the ceiling mount bracket by screwing 4 lock-up screws.
- 5 Detaching the Protection Film
Detach the protection film from the dome cover after finishing all installation.

2 Installation - Installation Using Pendant Mount Bracket(Optional)



✳ Disassemble the main body with the ceiling mount before installation the camera.

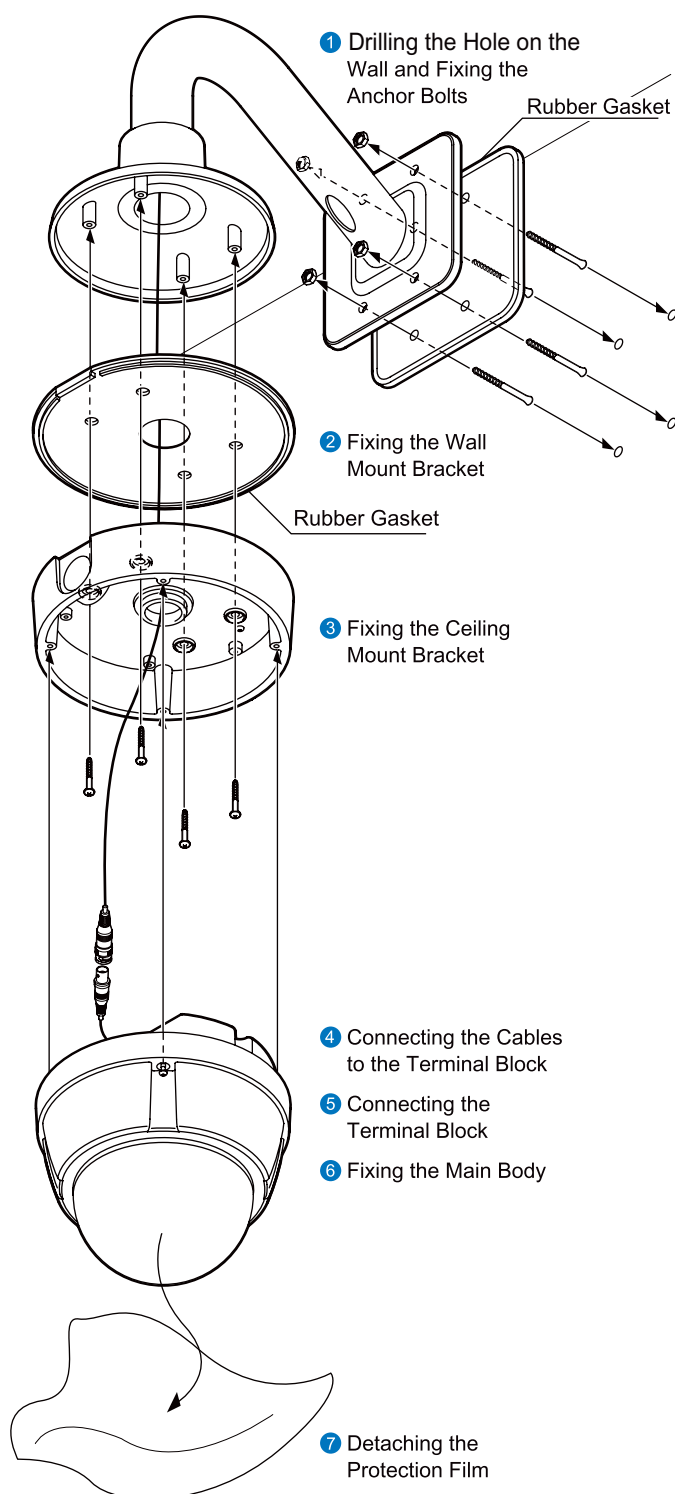
1. Installing on the Concrete Ceiling

- 1 Drilling the Hole on the Ceiling and Fixing the Anchor Bolts
To install the pendant mount bracket, drill four holes (6mm diameter/50mm depth) on the ceiling and insert the anchor bolts into the hole.
- 2 Fixing the Pendant Mount Bracket
 1. There is 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 pendant mount bracket.

- 1 To pass cables to upside of pendant, drill a hole (30mm diameter) on the ceiling.
- 2 Pass the cables into the pendant mount bracket, and screw the pendant mount bracket to the ceiling.

- 3 Fixing the Ceiling Mount Bracket
Pass the cables through the hole of the ceiling mount bracket, screw the ceiling mount bracket to the ceiling
- 4 Connecting the Cables to the Terminal Block
See the section 'Cabling the Terminal Block' for details.
- 5 Connecting the Terminal Block
Put the terminal block connected to the cables in the slot of the main body.
- 6 Fixing the Main Body
Screw the main body to the ceiling mount bracket by screwing 4 lock-up screws.
- 7 Detaching the Protection Film
Detach the protection film from the dome cover after finishing all installation.

2 Installation - Installation Using Wall Mount Bracket (Option)



✳ Disassemble the main body with the ceiling mount before installation the camera.

1. Installing on the Concrete Wall

1 Drilling the Hole on the Wall and Fixing the Anchor Bolts

To install the wall mount bracket, drill four holes (6mm diameter/50mm depth) on the wall and insert the anchor bolts into the hole.

2 Fixing the Wall Mount Bracket

1. There is 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 wall mount bracket.

1 Drilling a Hole on the Wall

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

2 Fixing the Wall Mount Bracket

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

3 Fixing the Ceiling Mount Bracket

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

4 Connecting the Cables to the Terminal Block

See the section 'Cabling the Terminal Block' for details.

5 Connecting the Terminal Block

Put the terminal block connected to the cables in the slot of the main body.

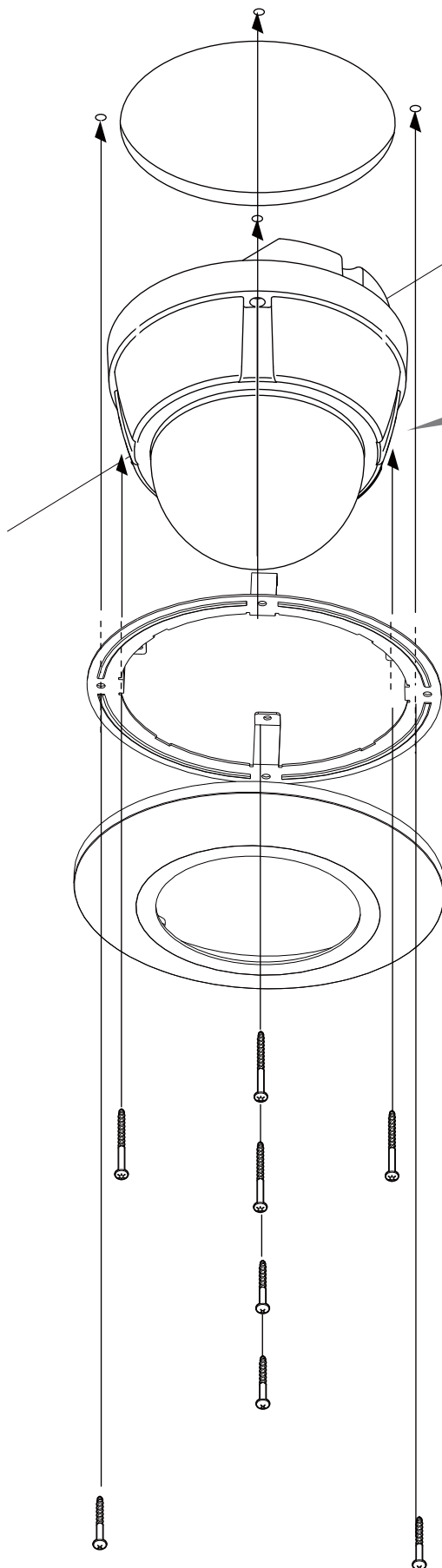
6 Fixing the Main Body

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

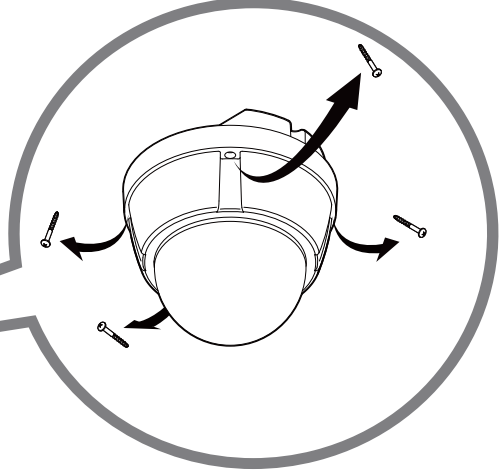
7 Detaching the Protection Film

Detach the protection film from the dome cover after finishing all installation.

2 Installation - Installation Using Flush Mount Bracket(Optional)

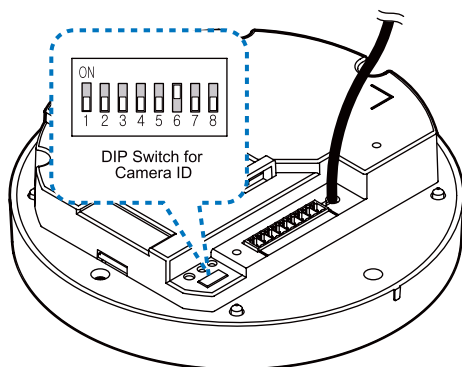


- 1 Drilling the Hole on the Ceiling
To pass main body through the ceiling, drill a hole(70mm diameter) on the ceiling.



- 2 Fix the Flush Mount Ring Bracket to the Main Body
Fix the flush mount ring bracket to the main body using torx screws.
- 3 Fix the flush mount ring bracket with main body to the ceiling
Fix the flush mount ring bracket to the ceiling using torx screws.
- 4 Snap the plastic ring Cover into the flush mount

2 Installation - Camera ID Setup



Bottom of Main Body

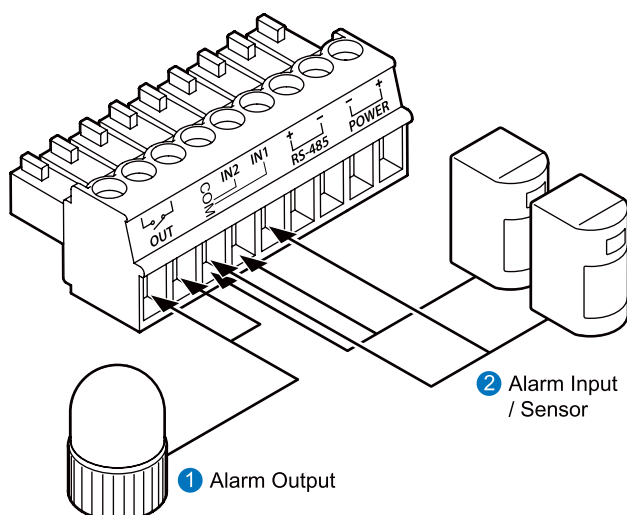
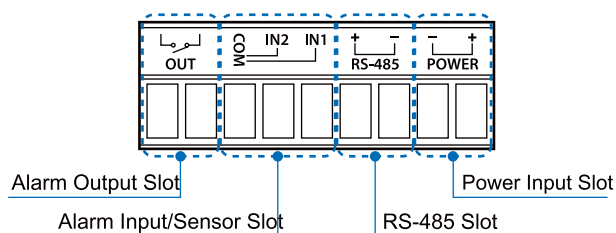
ID number of camera is set using binary number.
The example is shown below.

	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

-If you want to control acertain 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 - Terminal Block

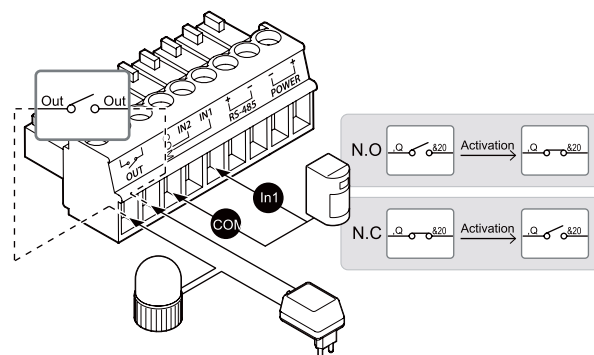


1 Alarm Output

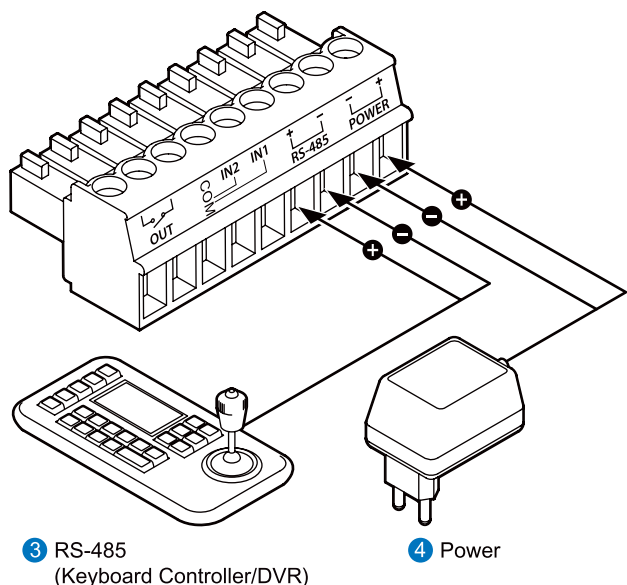
- It connects to the alarm lights, siren or lamps, and it is activated according to the OSD menu setting.
- There are 1 Alarm Output and it is relay contact type. Therefore, you do not have to care about polarity, AC/DC, and isolations between channels. Care must be taken for the power capacity of relay contact type.
- The sensor types are normal open and normal close.

2 Alarm Input / Sensor

- 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.
- The sensor types are normal open and normal close.



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



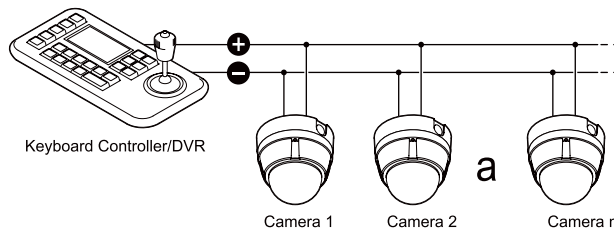
3 Power

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

Camera Type	Rated Power	Power Consumption
None Heater Model	Dual Voltage: DC 12V / AC 24V	10W
Heater Model		Heater Off: 10W Heater On: 21W

4 RS-485 Communication (Keyboard Controller/DVR)

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



3 OSD - 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.

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'.

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 OSD - Aux Functions

1 Preset

- Max. 255 positions can be stored as preset positions.
The preset number can be assigned from 1 to 255.
- See the section '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(1~255)
-

3. Delete Preset
To delete preset, use OSD menu.
-

2 Scan

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

-
1. Set Scan
To set scan, use OSD menu.
-

2. Run Scan
Method) Pattern key + Scan number(1~8) + 10
Ex) Run scan2=Pattern key+[12]+Enter key
-

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.
- See the section 'ROOT MENU>FUNCTION SETUP>PATTERN SETUP' for more detailed information.

-
1. Set Pattern
To set pattern, use OSD menu.
-

2. Run Pattern
Method 1) Pattern key + Pattern number(1~4) + Enter key
Ex) Run pattern2=Pattern key+[2]+Enter key
-

3. Delete Pattern
To delete pattern, use OSD menu.
-

- ☒ When the pattern is saved/executed, the pan/tilt is operated with 'AUTO FLIP-OFF'.

4 Group

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

-
1. Set Group
To set group, use OSD menu.
-

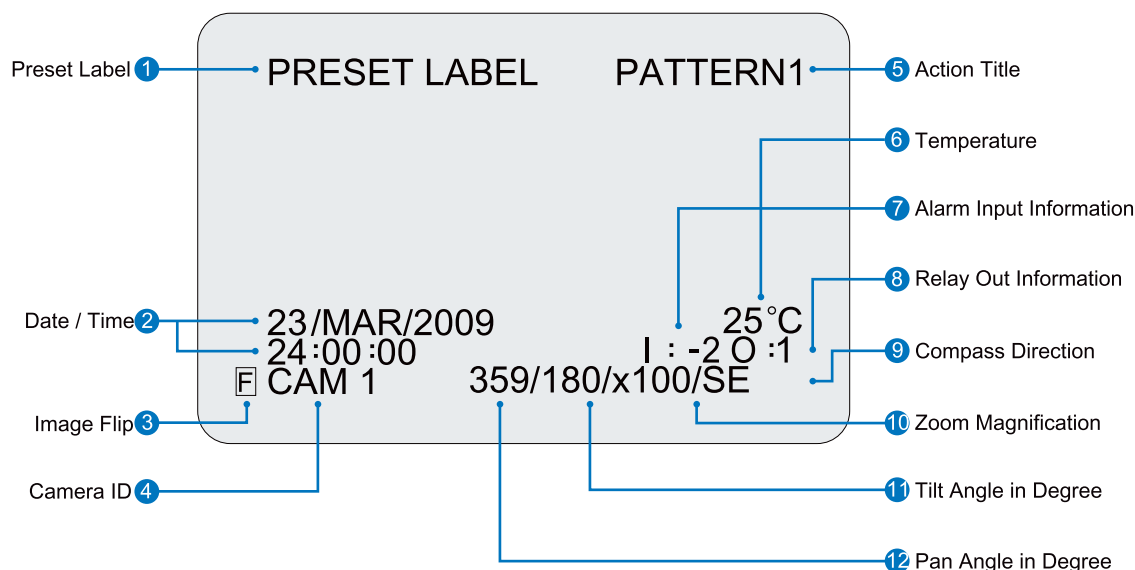
2. Run Group
Method) Pattern key + [Group number(1~8) + 20]
Ex) Run group 2 = Pattern key + [22] + Enter key
-

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.
- See the section 'ROOT MENU>FUNCTION SETUP>SCHEDULE SETUP' for more detailed information.

3 OSD - OSD Information



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

- 2 Date / Time**
 - Shows the current date/time.
 - See the section '5'Setup - Date/Time Setup'.

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

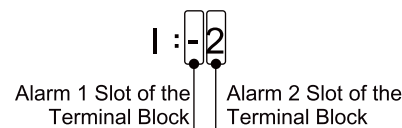
- 4 Camera ID**
 - The current camera ID(Address).
 - See the section 'ROOT MENU>SYSTEM INFORMATION'.

- 5 Action Title**
 Followings are possible action titles and their meanin

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.

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

- 7 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.



- 8 Relay Out 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.



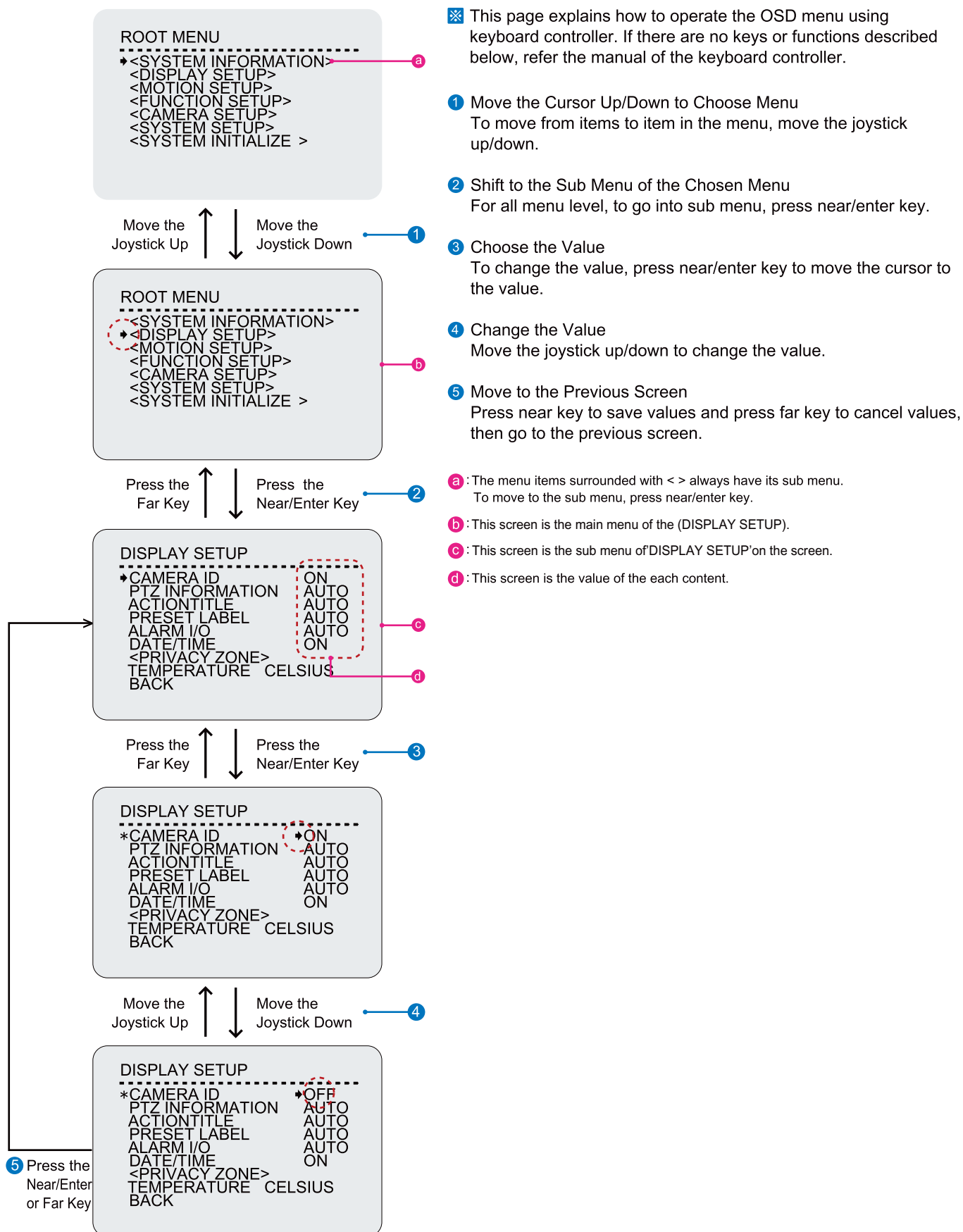
- 9 Compass Direction**
 - Shows the current compass direction of the camera.
 - The direction is shown as N(North), S(South), E(East), W(West), NE(Northeast), NW(Northwest), SE(Southeast), SW(Southwest).
 - See the section 'ROOT MENU>SYSTEM SETUP>SET NORTH DIRECTION'.

- 10 Zoom Magnification**
 Shows the current zoom magnification.

- 11 Tilt Angle in Degree**
 Shows the current tilt(0 ~ 180) angle.

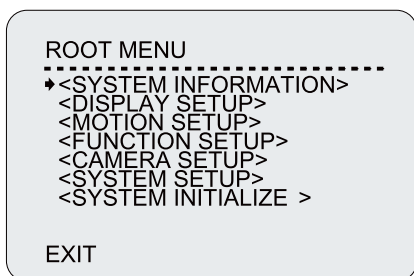
- 12 Pan Angle in Degree**
 Shows the current fan(0 ~ 359) angle.

3 OSD - General Rules of Menu Operation



3 OSD - ROOT MENU & SYSTEM INFORMATION

1



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.

<SYSTEM SETUP>

Configure for basic system setup.

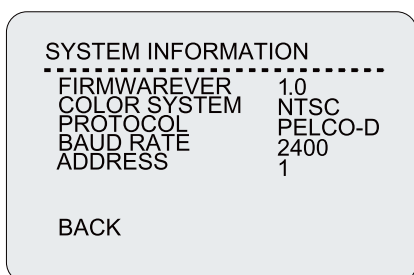
<SYSTEM INITIALIZE>

Initializes system configuration and sets all data to factory default configuration.

EXIT

To escape from the OSD setting, go to exit.

1



1 SYSTEM INFORMATION

FIRMWARE VER

Shows the current firmware version.

COLOR SYSTEM

Shows the current analog video system.

PROTOCOL

Shows the current PTZ control protocol.

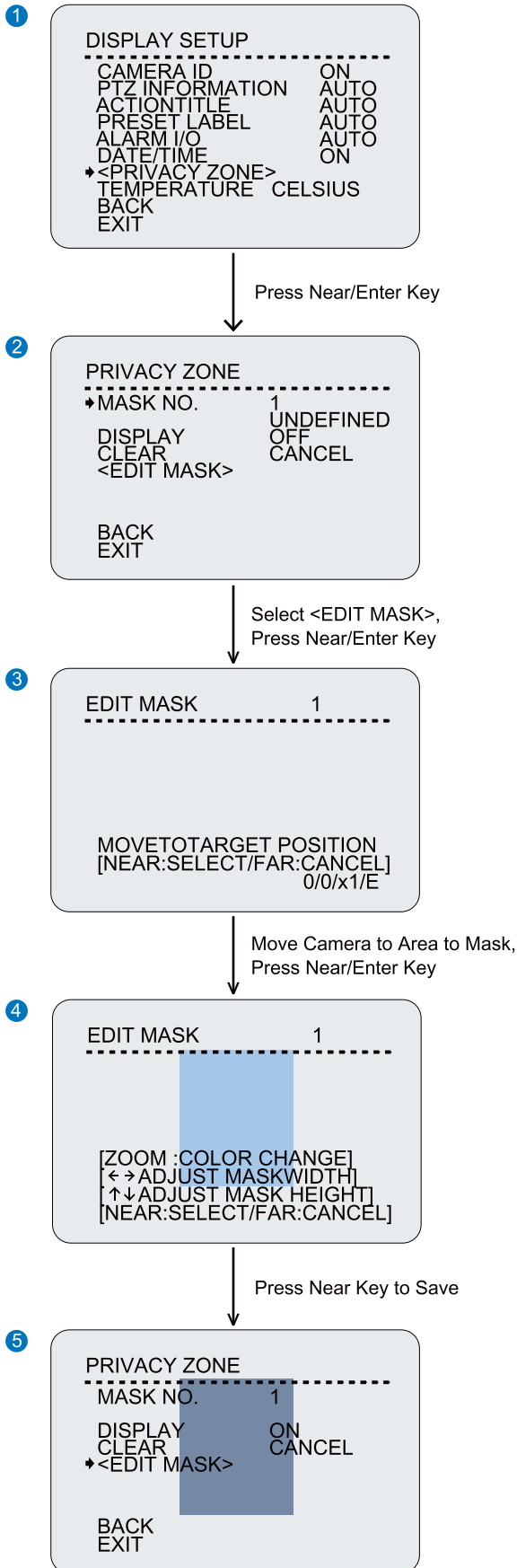
BAUD RATE

Shows the current baud rate of the PTZ control.

ADDRESS

Shows the current camera ID of the PTZ control.

3 OSD - DISPLAY SETUP



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.

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.
TEMPERATURE	CELSIUS / FAHRENHEIT / OFF

2 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	CANCEL / OK
Deletes data in the selected mask no.	
<EDIT MASK>	Moves to setup the mask no.

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 cannot 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 - Color Change & Adjust Mask Size

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

- Zoom In/Out: Change Color of Mask.
- 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.

3 OSD - MOTION SETUP

1

MOTION SETUP	
PRESET LOCK	OFF
PWR UPACTION	ON
AUTO FLIP	ON
JOG MAX SPEED	140/SEC
JOG DIRECTION	NORMAL
FRZ IN PRESET	OFF
<PARKING ACTION SETUP>	
BACK	
EXIT	

Press Near/Enter Key

2

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

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 appears in screen. If this function is set to 'OFF', tilt movement range is 0 ~ 90.

JOG MAX SPEED 2/SEC ~ 200/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 '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.

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.

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

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.

1. To place the cursor on the time marked as below, press near key.

00:10:00

2. Move joystick Left/Right to adjust hours, minutes and seconds.

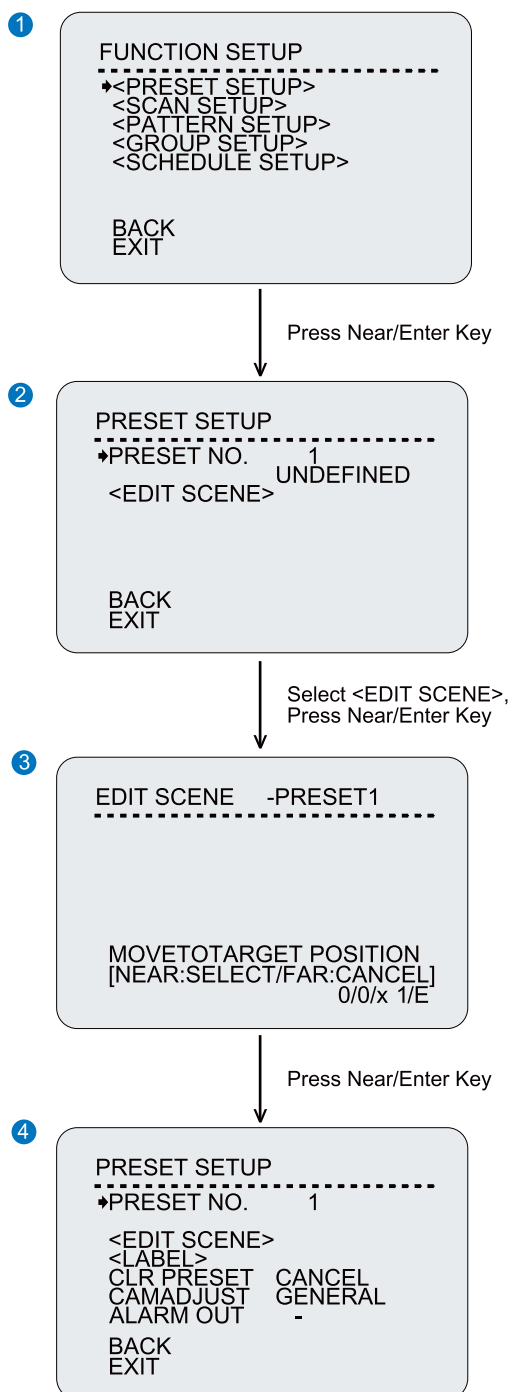
3. Move joystick Up/Down to select the digit.

4. By pressing near key, save current setting.

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

Ex) If 'HOME' is selected for park action, camera will move to home position when there is no PTZ command during the assigned 'WAIT TIME.'

3 OSD - FUNCTION SETUP > PRESET SETUP



1 FUNCTION SETUP

Configure 5 special functions with this menu.

2 PRESET SETUP - Undefined

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

PRESET NO. 1 ~ 128 (95 excepted)

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>

Redefine the current preset scene position(i.e. PTZ).

3 EDIT SCENE

1. Using joystick, move camera to the desired position.
2. By pressing near key, save the current PTZ data.
3. Press far key to cancel.

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 (95 excepted)

<EDIT SCENE>

<LABEL>

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

CAM ADJUST GENERAL / SPECIAL

-WB(White Balance) and AE(Auto Exposure) can be set up independently for each preset.

- GENERAL: WB or AE can be set up totally and simultaneously for all presets in 'ROOT MENU>CAMERA SETUP' menu.

- SPECIAL: WB or AE can be set up independently or separately for each preset in each preset setup menu.

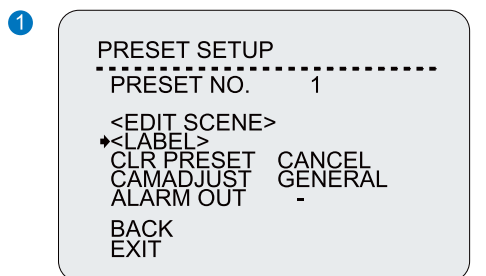
- Each special WB/AE value should be activated correspondingly when camera arrives at each preset location. During jog operation, general WB/AE value should be applied.

- All special WB/AE value should not be changed although general WB/AE value is changed. If 'SPECIAL' is selected, the menu to set WB/AE is shown on monitor.

ALARM OUT - / 1

Relay output can be linked with preset run. '-' means off, '1' means on.

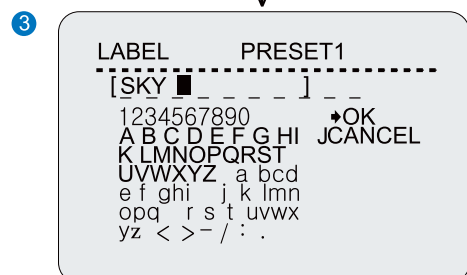
3 OSD - FUNCTION SETUP > PRESET SETUP



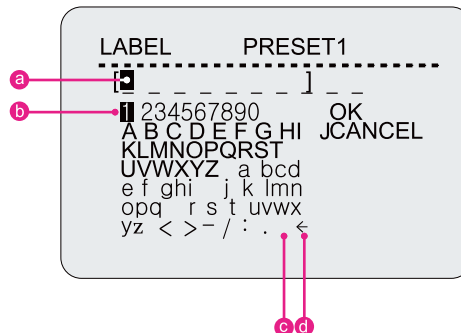
Press Near/Enter Key



Press Near/Enter Key

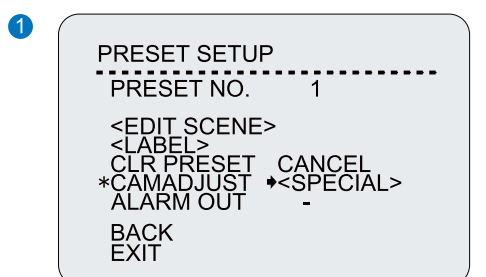


- 2 LABEL
- Edits label to show on monitor when camera arrives at preset.

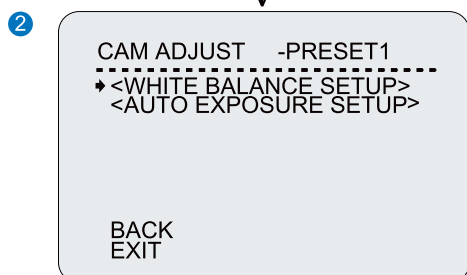


- a Current Cursor Position: In edit label menu, a reverse rectangular is cursor. As soon as finishing selecting alphabet, cursor moves to the next digit.
- b Selecting Alphabet: Using left/right/up/down of joystick, move to an appropriate character from the character set. To choose the character, press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

- 3 LABEL-Complete Editing
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.



Press Near/Enter Key



- 2 CAM ADJUST
Edits label to show on monitor when the camera arrives at presets.

<WHITE BALANCE SETUP>
See the section 'ROOT MENU>CAMERA SETUP>WB SETUP'.

<AUTO EXPOSURE SETUP>
See the section 'ROOT MENU>CAMERA SETUP>AE SETUP'.

3 OSD - FUNCTION SETUP > SCAN SETUP

1

```

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

BACK
EXIT
    
```

Press Near/Enter Key

2

```

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

SCAN SPEED 30/SEC
CLEAR SCAN CANCEL

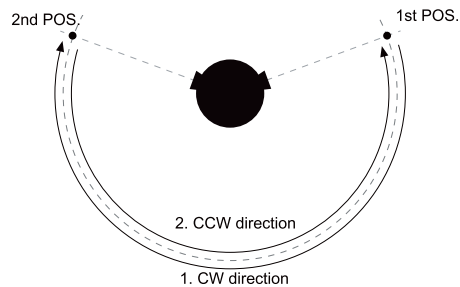
BACK
EXIT
    
```

2 SCAN SETUP

By using the scan function, you can make the camera to move between 2 preset positions repeatedly.

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



SCAN NO. 1 ~ 8

Selects the scan number to edit. If a selected scan has not defined, 'NOT USED' is displayed in 1st position and 2nd position.

1ST POS. / 2ND POS. PRESET 1 ~ 128 (95 excepted) / NOT USED

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. *PRESET1
2ND POS. NOT USED
          UNDEFINED
SCAN SPEED 30/SEC
    
```

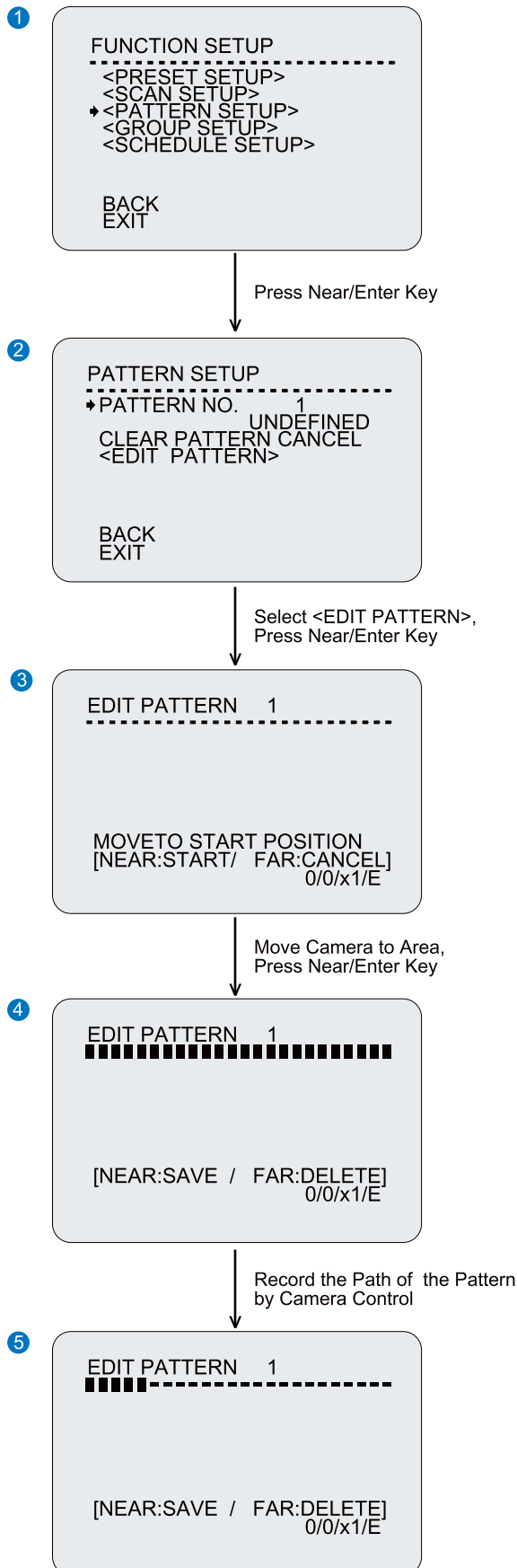
SCAN SPEED 1/SEC ~ 180/SEC

Sets the scan speed.

CLEAR SCAN CANCEL / OK

Deletes the current scan data.

3 OSD - FUNCTION SETUP > PATTERN SETUP



2 PATTERN SETUP

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 max. 1000 communication commands can be stored in a pattern.

PATTERN NO. 1 ~ 4

Select pattern number to edit. If a selected pattern number is not defined, 'UNDEFINED' will be displayed under selected pattern number.

CLR PATTERN CANCEL / OK
Deletes data in the current pattern.

<EDIT PATTERN>
Starts editing pattern.

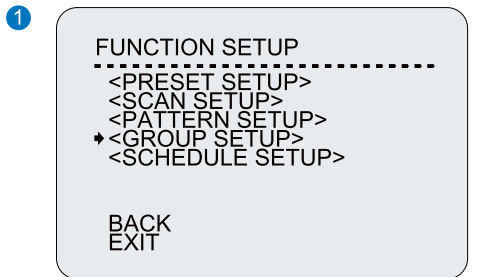
3 EDIT PATTERN - Select the Position

1. By using joystick, move to the start position with appropriate zoom.
2. To start the pattern recording, press near or enter key.
3. To exit this menu, press far key.

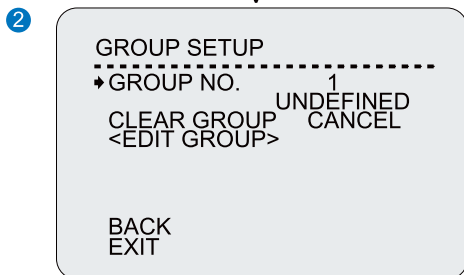
4 EDIT PATTERN - Records

1. Move the camera with joystick of the controller or run preset function to memorize the path (mostly curve path) in a selected pattern.
2. The total memory size and the rest memory size is displayed in the form of bar.
3. To save data and exit, press near key.
4. To cancel recording and delete the recorded data, press far key.

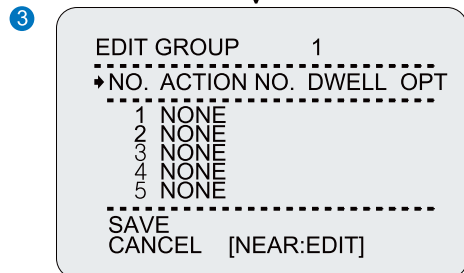
3 OSD - FUNCTION SETUP > GROUP SETUP



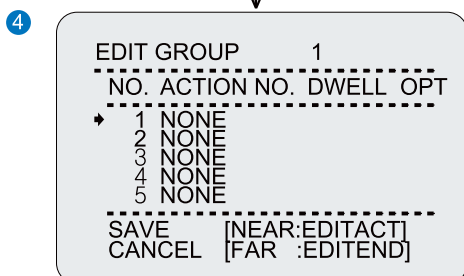
Press Near/Enter Key



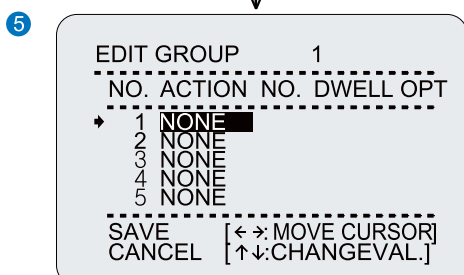
Select <EDIT GROUP>,
Press Near/Enter Key



Press Near/Enter Key



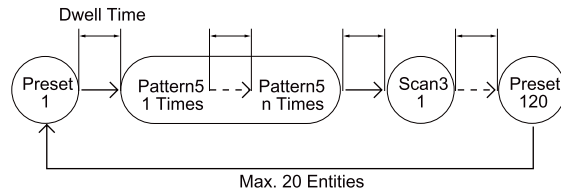
Press Near/Enter Key



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.

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.



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>

Starts editing group.

3 EDIT GROUP - Initial Screen

Press near or enter key in 'NO' list to start group setup.

ACTION NO. NONE / PRESET 1~128 (95 excepted) /
PATTERN 1~4 / SCAN 1~8

DWELL TIME 00:03 ~ 04:00 (min:sec)

Sets dwell time between function by moving joystick up/down.

OPT PRESET: 2~360 / PATTERN & SCAN: 1~255

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'.

4 EDIT GROUP-Select Function Sequence

Note that max. 20 functions are allowed in a group.

Move cursor up/down and press near or enter key to set up.

5 6 EDIT GROUP - Assign Function

Set up 'ACTION', 'DWELL' and 'OPT'. Note that selected item is displayed in reverse. Move cursor left/right to select items and move cursor up/down to change each value.

3 OSD - FUNCTION SETUP > GROUP SETUP

6

```

EDIT GROUP      1
-----
NO. ACTION NO. DWELL OPT
-----
1 PATTERN1 00:0 3 1
2 NONE
3 NONE
4 NONE
5 NONE
-----
SAVE  [←→: MOVE CURSOR]
CANCEL [↑↓: CHANGEVAL.]
  
```

Press Near/Enter Key

7

```

EDIT GROUP      1
-----
NO. ACTION NO. DWELL OPT
-----
1 PATTERN1 00:0 3 1
2 NONE
3 NONE
4 NONE
5 NONE
-----
SAVE  [NEAR:EDITACT]
CANCEL [FAR :EDITEND]
  
```

Press Far Key

8

```

EDIT GROUP      1
-----
NO. ACTION NO. DWELL OPT
-----
1 PATTERN1 00:0 3 1
2 NONE
3 NONE
4 NONE
5 NONE
-----
→SAVE
CANCEL
  
```

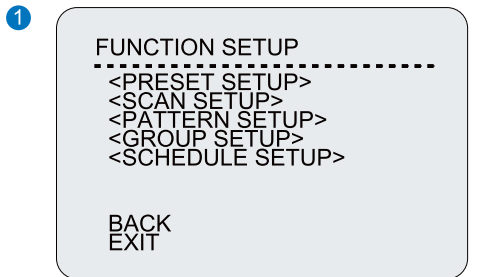
7

EDIT GROUP - Selects Function Sequence
After finishing setting up an 'ACTION', press near or enter key to one-upper-level menu. Move cursor up/down to select 'ACTION NO.' and repeat to step 4 ~ step 6 to edit the selected group.

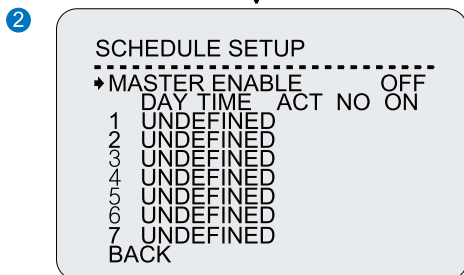
8

EDIT GROUP - Saves the Setting
After finishing setting up all actions, press far key to exit. Then cursor should be moved to 'SAVE'. Press near or enter key to save the data.

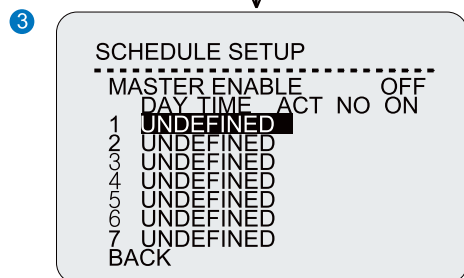
3 OSD - FUNCTION SETUP > SCHEDULE SETUP



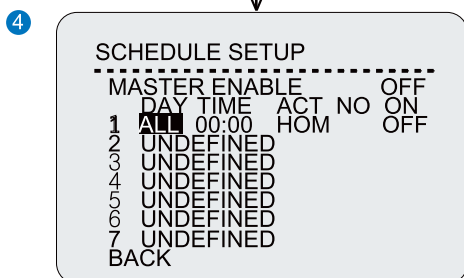
Press Near/Enter Key



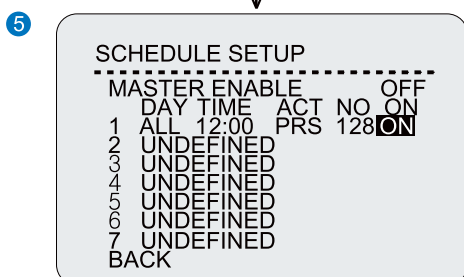
Joystick Down,
Press Near Key



Joystick Down



Assign Value



2 SCHEDULE SETUP SCREEN

The schedule function allows running an appropriate function like preset, scan, pattern, group, home move at designated day and time.

EX) 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 9:00 AM. If you choose weekday, camera will move to main gate everyday except weekend.

It is noted that due to the real time clock (ROOT MENU> SYSTEM SETUP> DATA/TIME SETUP), the time data will be kept regardless of blackout. The initial time and day setup is essential to proper schedule function.

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 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 (95 excepted) / SCN(Scan) 1~8 / PTN(Pattern) 1~4 / GRO(Group) 1~8
--------	---

Set the function and no.

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.

3 OSD - FUNCTION SETUP > SCHEDULE SETUP

6

SCHEDULE SETUP

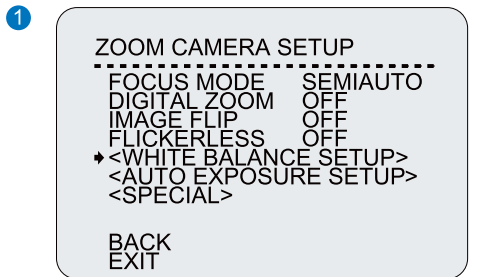
```
-----
MASTER ENABLE          ON
DAY TIME ACT NO ON
1 MON 01:20 HOM 12 ON
2 WED 07:00 PRS 12 ON
3 THU 11:40 SCN 3 ON
4 ALL 12:00 SCN 1 ON
5 UNDEFINED
6 UNDEFINED
7 UNDEFINED
BACK
```

EX)

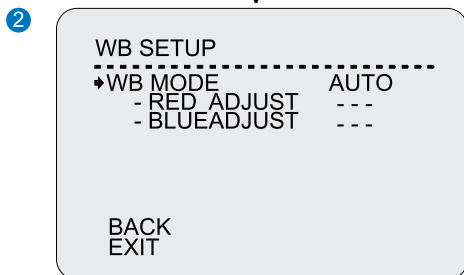
The second rule means camera will move to preset 12 position at 7:00 on every wednesday.

- ⌘ 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, PRS125 and PRS124 are 'DAY' and 'NIGHT' mode respectively.
(Refer to Reserved Preset list in this manual.)

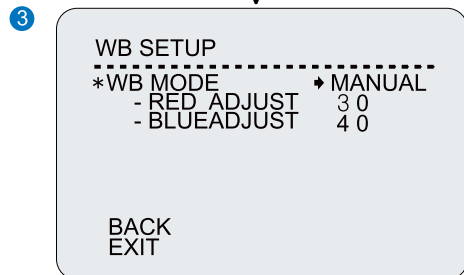
3 OSD - CAMERA SETUP >WB SETUP



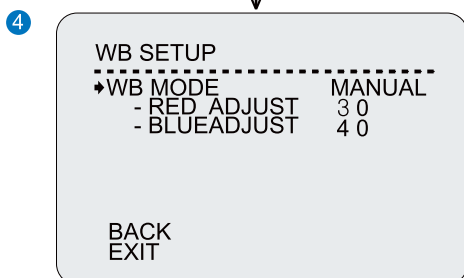
Press Near/Enter Key



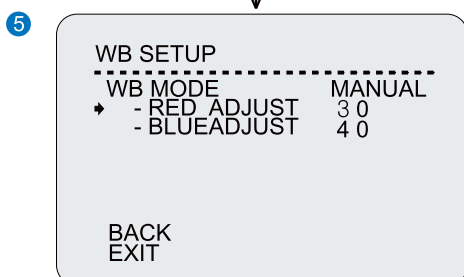
Press Near Key,
Joystick Down



Press Near/Enter Key



Joystick Down



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.

<WHITE BALANCE SETUP>

Starts 'WHITE BALANCE SETUP' setup screen.

<AUTO EXPOSURE SETUP>

Starts 'AUTO EXPOSURE SETUP' setup screen.

<SPECIAL>

Starts 'SPECIAL' setup screen.

2 WB SETUP

WB MODE AUTO / MANUAL / ATW / AWC / OUTDOOR / INDOOR

- AUTO: Camera perform white balance automatically.
- Manual: R/B gain level can be set up manually.
- ATW: Auto White Balance is performed in the wider range of color temperature than that of the 'AUTO' mode.
- AWC: When right direction key is clicked, one time white balance is performed for current illumination condition and the value is kept.
- INDOOR: WB will be done under assumption of Indoor illumination.
- OUTDOOR: WB will be done under assumption of Sun light.

RED ADJUST 0 ~ 255

BLUE ADJUST 0 ~ 255

3 OSD - CAMERA SETUP > AE SETUP

1

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

Press Near/Enter Key

2

AE SETUP	
* WDR/BLC	ALL OFF
DAY/NIGHT	AUTO
AE MODE	AUTO
■ IRIS LEVEL	---
■ GAIN LEVEL	---
■ SHUTTER SPD	---
■ BRIGHTNESS	---
■ SENS-UP	OFF
BACK	
EXIT	

2 AE SETUP

WDR/BLC	ALL OFF / WDR ON / BLC ON
---------	---------------------------

Sets the backlight compensation.

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 LEVEL	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)
------------	---

Works when 'AE MODE' is 'MANUAL' or 'IRIS' mode.

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

Works when 'AE MODE' is 'MANUAL'.

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

SHUTTER SPD	x64 / x32 / x16 / x8 / x4 / x2 / 1/60 / 1/90 / 1/100 / 1/125 / 1/180 / 1/250 / 1/350 / 1/500 / 1/725 / 1/1000 / 1/1500 / 1/2000 / 1/3000 / 1/4000 / 1/6000 / 1/10000 (22 steps)
-------------	---

Works when 'AE MODE' is 'MANUAL' or 'SHUTTER' mode.

BRIGHTNESS	0~31 (32 steps)
------------	-----------------

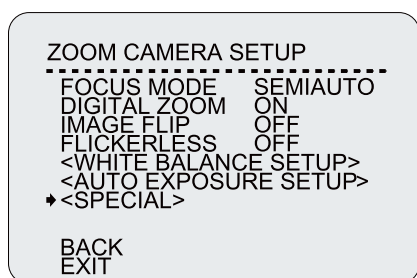
Works when 'AE MODE' is 'BRIGHT'.

Adjusts brightness of images. Iris, shutter speed and gain are adjusted automatically in correspondence with this value.

SENS-UP	OFF / x2 / x4 / x8 / x16 / x32 / x64 / x128 / x256 / x512
---------	---

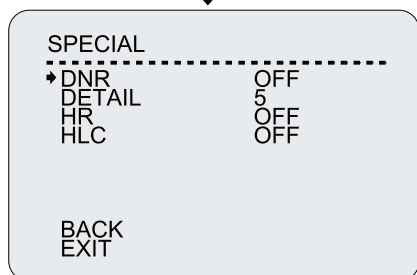
3 OSD - CAMERA SETUP > SPECIAL

1



Press Near/Enter Key

2



2 SPECIAL

Sets the special function related to the image.

DNR OFF / AUTO / MANUAL(1~10)

If reduces the noise caused by 'AGC' action. If set to AUTO or MANUAL, the noise will be reduced but the ghost effect on moving objects will be increased.

DETAIL 0 ~ 15

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.

HR(High Resolution) ON / OFF

This mode enhances edges and produces higher definition images.

HLC ON / OFF

Part where becomes brightness more than the standard value is automatically hid by mask on the video.

3 OSD - SYSTEM SETUP

32

3 OSD - SYSTEM SETUP

5

SET NORTH DIRECTION

MOVETOTARGET POSITION
[NEAR:SELECT/FAR:CANCEL]
0/0/x1/ N

5 SET 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



Direction will be displayed from:

N(North) / S(South) / E(East) / W(West) / NE(Northeast) / NW(Northwest) / SE(Southeast) / SW(Southwest).

6

FAN HEATER SETUP

▶ FAN RUNTEMP 25°C
HEATER RUNTEMP 5°C

BACK
EXIT

6 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 20C ~ 80C (68F ~ 176F)

Above this temperature, the blower fan will start automatically.

HEATER RUN TEMP -10C ~ 20C (14F ~ 68F)

Below this temperature, the heater will be tuned on automatically.

7

PROTOCOL/BAUDRATE

▶ PROTOCOL PELCO-D
BAUDRATE 2400

BACK
EXIT

Press the
Near/Enter Key

8

PROTOCOL/BAUDRATE

* PROTOCOL * PELCO-D
BAUDRATE 2400

BACK
EXIT

Move the
Joystick Down

9

PROTOCOL/BAUDRATE

* PROTOCOL * PELCO-P
BAUDRATE 2400

BACK
EXIT

7 PROTOCOL/BAUDRATE

After installing the camera, you should set the communication protocol and baudrate.

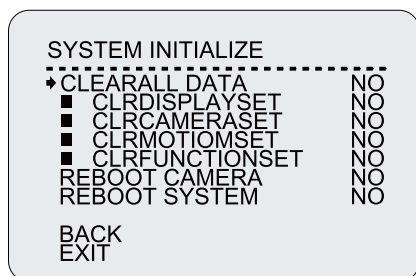
PROTOCOL AUTO / PELCO-D / PELCO-P / SAMSUNG-E /
PANASONIC / KALATEL / AD / SAMSUNG-S /
VICON / VCLTP / HONEYWELL / BOSCH

- Select the appropriate protocol.
- If you set the protocol as 'Auto' protocol, camera will automatically recognize PELCO-D, PELCO-P or 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 change camera protocol by changing DIP switch, the change will be effective after you reboot the camera.

BAUDRATE 2400 / 4800 / 9600 / 19200 / 38400

Select the appropriate baud rate.

3 OSD - SYSTEM INITIALIZE



SYSTEM INITIALIZE

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

CLR DISPLAY SET YES / NO
Initializes display configuration.

CLR CAMERA SET YES / NO
Initializes camera configuration.

CLR MOTION SET YES / NO
Initializes motion configuration.

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

REBOOT CAMERA YES / NO
Reboots zoom camera module.

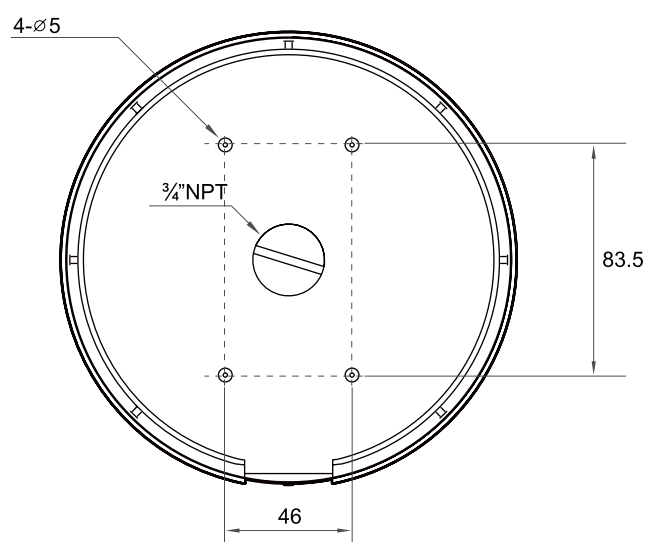
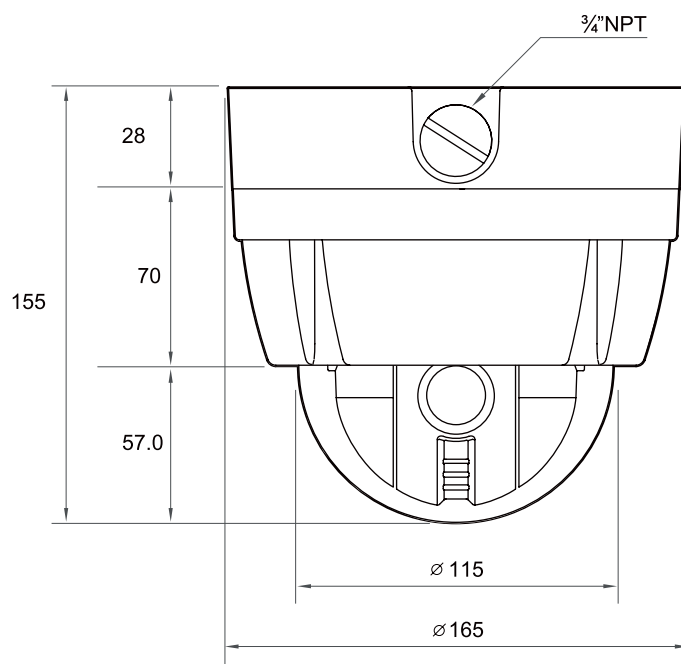
REBOOT SYSTEM YES / NO
Reboots speed dome camera.

Initial Configuration Table

Camera ID	ON	Display
PTZ Information	AUTO	
Action Title	AUTO	
Preset Label	AUTO	
Alarm I/O	AUTO	
Date/Time	ON	
Privacy Zone	Undefined	Motion
Preset Lock	OFF	
Power Up Action	ON	
Auto Flip	ON	
Jog Max Speed	140/sec	
Jog Direction	NORMAL	
Freeze In Preset	OFF	Function
Park Action	OFF	
Preset 1~255	Undefined	
Scan 1~8	Undefined	
Pattern 1~4	Undefined	
Group 1~8	Undefined	
Schedule 1~7	Undefined	Camera
Focus Mode	AUTO	
Digital Zoom	OFF	
Image Flip	OFF	
Flickerless	OFF	
White Balance	AUTO	
WDR/BLC	ALL OFF	
Day/Night	AUTO	
AE Mode	AUTO	
Iris Level	-	
Gain Level	-	
Shutter Speed	-	
Brightness	-	
Sens-up	OFF	
DNR	OFF	
Detail	5	
HR	OFF	
HLC	OFF	
Relay Type	Normal Open	System
Language	English	
Fan Run Temp	25	
Heater Run Temp	5	
Protocol	AUTO	
Baud Rate	2400	

4 Specifications - Dimension

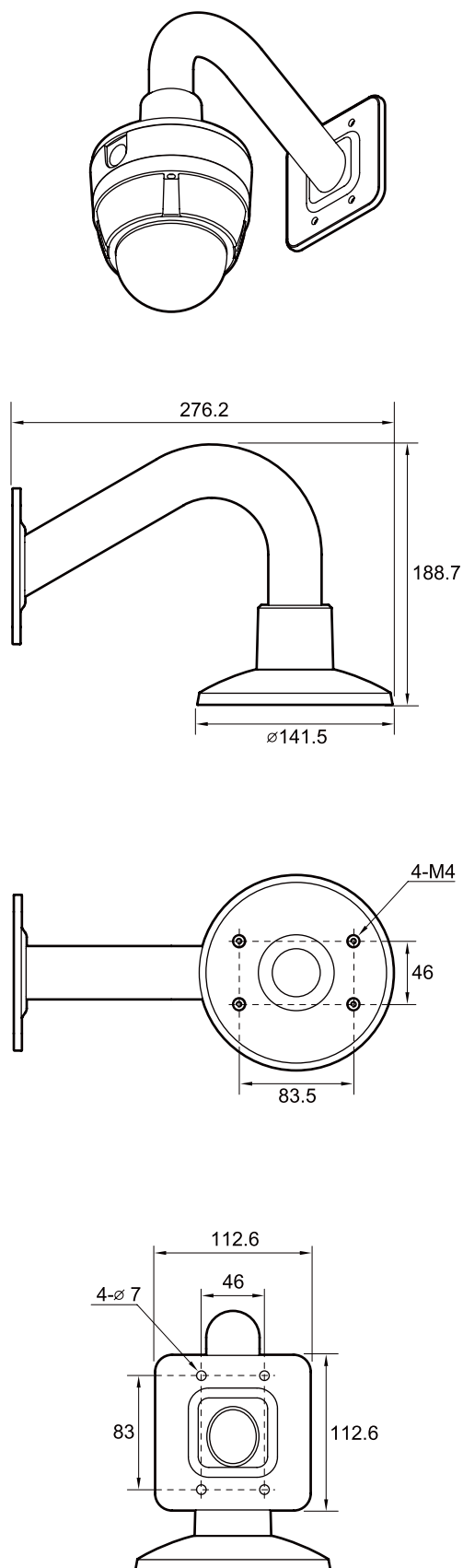
Unit: mm



4 Specifications - Dimensions of Option Brackets

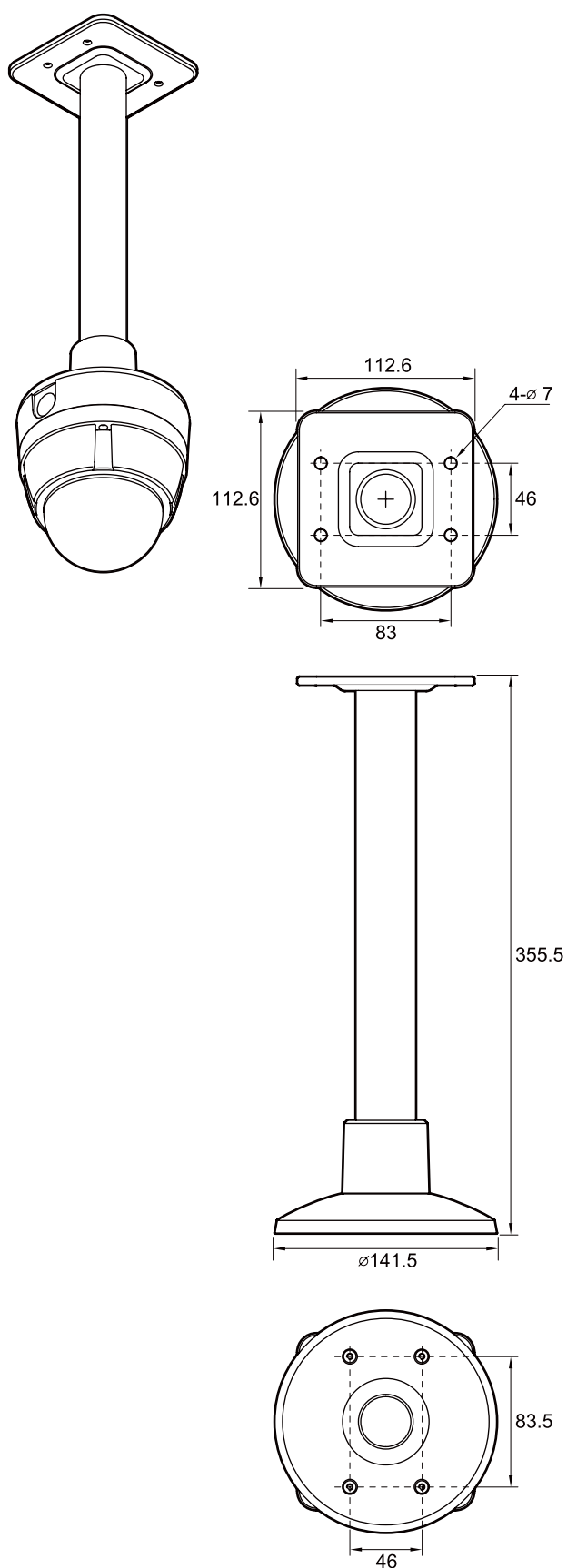
1. Wall Mount Bracket

Unit: mm



2. Ceiling Mount Bracket

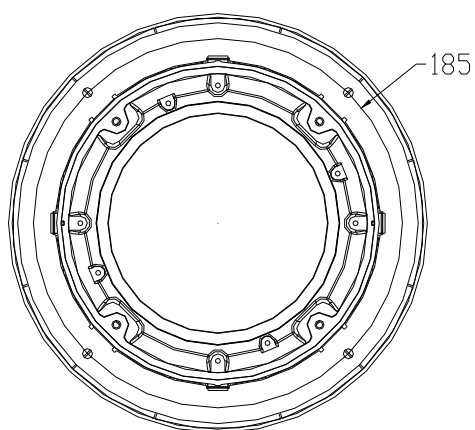
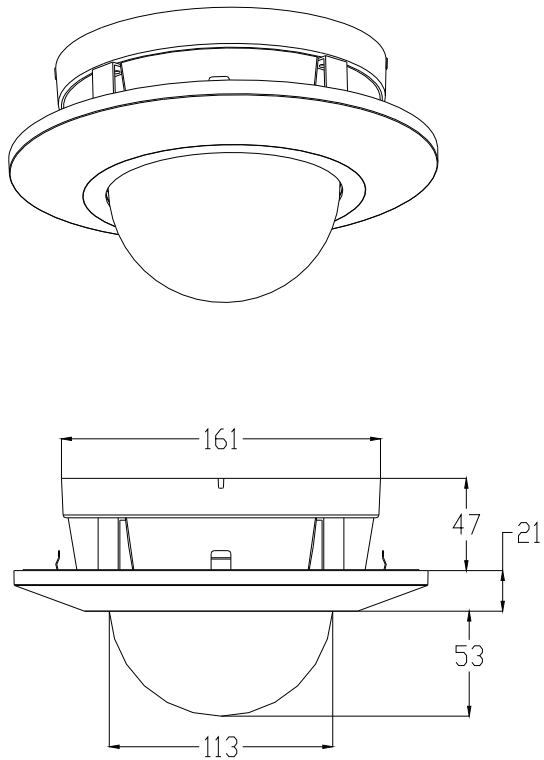
Unit: mm



4 Specifications - Dimensions of Option Brackets

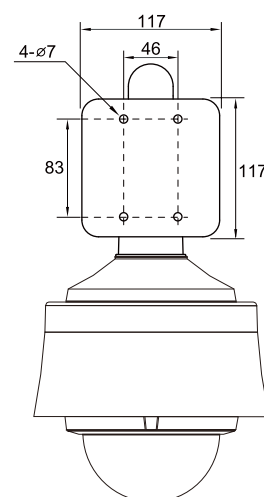
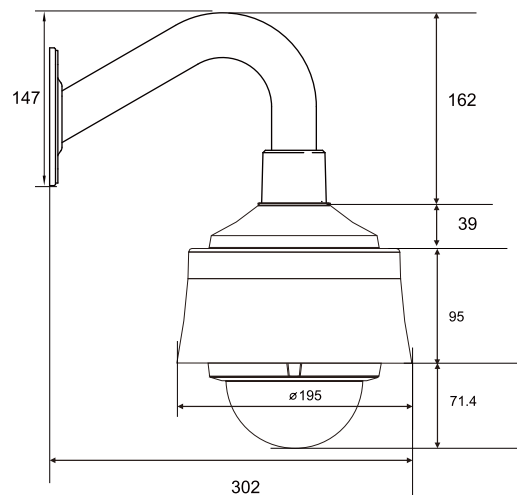
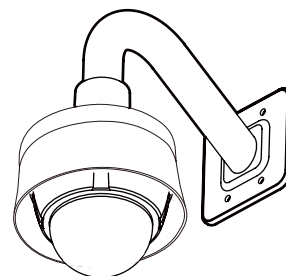
3. Flush Mount Bracket

Unit: mm



4. Sun Shield Mount Bracket

Unit: mm



4 Specifications- Specification

Camera

Image Device	1/4" SONY Super HAD II Double Scan CCD	
Effective Pixel	NTSC : 1028(H) x 508(V) PAL : 1028(H) x 596(V)	
H. Resolution	Color: 600 TV Line B/W: 650TV Line	
Zoom	12xOptical Zoom & x32 Digital Zoom	
Lens	f = 1.6(wide) ~ 2.7(tele) 3.8(Wide) ~45.6 (Tele)	
Min. Illuminance	Color: 0.5 Lux (DSS Off), 0.001 Lux (DSS On) B/W: 0.2 Lux (DSS Off), 0.0004 Lux (DSS ON)	
Shutter Speed	NTSC : 1/60~100,000 sec. PAL : 1/50~100,000 sec.	
Day & Night	Auto / Day / Night (ICR)	
Focus	Auto / Manual / Semi-auto	
White Balance	Auto / Manual / ATW / AWC / Outdoor / Indoor	
AGC	Auto / Manual / Max Gain Limit	
WDR	On / Off	
DNR	On / Off	
Other Functions	System Image Flip by Installation Type	

Pan/Tilt

Pan Range	360 (Endless)
Tilt Range	180(Auto-Flip On), 90(Auto-Flip Off)
Pan/Tilt Speed	Preset: 360
	Scan: 1 ~ 180/sec.
	Manual: 0.05 ~ 360/sec. (Zoom Proportional)
Preset	127 Presets with Labels
Pattern	4 Patterns
Scan	8 Scans
Group	8 Groups (Max. 20 Entities per Group)
Other Functions	Image Auto Flip, Auto Parking, Power-up Action & etc.

General

Video Out	BNC (VBS 1.0 V)
Sensor In/Out	Built-in 2 Input / 1 Output
Material	Body: Aluminum Die-casting • Clear Bubble: Polycarbonate
Approvals	FCC, CE, IP66, RoHS
Power	Dual Voltage: DC 12V • AC 24V / 10W
Housing	Vandal Proof Structure, White Pearl Color
Weight	Net: 1.9 Kg • Package: 3 Kg
Operating Temp.	-10 ~ 50 C (14 ~ 122 F)

※ With Sunshield Mount Type(Heater Model)

Power	Dual Voltage: DC 12V • AC 24V / Heater On: 21W, Heater Off: 10W
Housing	Weather Proof, Vandal Proof Structure, White Pearl Color
Weight	Net: 2.5 Kg • Package: 3.5 Kg
Operating Temp.	-45 ~ 50 C (-49 ~ 122 F)