

IR SPEED DOME CAMERA USER MANUAL





If the product is to be put out of operation definitively, take it to a local recycling plant for a disposal which is not harmful to the environment.

Please read the instructions carefully for correct use of the product and preserve it for reference purposes. This specification is subject to change without any prior notice to improve the quality.

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Chapter 1. Warning and Cautions





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1.1 Warning and Cautions

Please carefully check these particulars for the safe use.

1.1.1 Examples of sign

	WARNING	This symbol indicates the cause of death or serious injury to the user.
	CAUTION	This symbol indicates the cause of equipment damage.

1.1.2 Examples of sign

	This symbol indicates the warning of electric shock.
	This symbol indicates the prohibition of disassembly.
	This symbol indicates to observe plug off.

1.2 Warning



WARNING

Install the product on firm and durable position.



Use a recommended adaptor by the manual.



Unplug the unit when there is any sign of electric leakage, short circuit or smog by burn.



Do not disassemble or remodel the product.



Please check the external terminal before connecting the signal cables




1.3 Caution




Caution


This product should be installed by expert installer.	
Do not install the product at the position exposed to the direct sun.	
Do not install the product where lighting is unstable.	
Do not drop, hit strongly nor vibrate the product.	
Please use the product at the proper environment as follow. – Temperature : $-20^{\circ}\text{C} \sim 60^{\circ}\text{C}$ ($-4^{\circ}\text{F} \sim 140^{\circ}\text{F}$) – Humidity : below 90%	
This product is produced only for the power as follow. *Be sure to connect power after all installation are completed. – Current consumption : 12V DC $\pm 10\%$ /18W, Max 2A 24V AC $\pm 10\%$ /18W, Max 1.5A	
Unplug it when any inflammable or conductive material goes into the product.	



Chapter 2. Overview



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2.1 Features

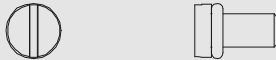
- 1) **360° continuous rotation, $-5^{\circ} \sim 185^{\circ}$ tilting range and High-speed pan & tilt at 250°/sec**
 - This is the high speed dome camera which has wide speed range.
 - Speed is controlled by user's option or the zoom magnification.
- 2) **Up to 128 preset**
 - This function provides preset camera settings such as pan, tilt, zoom and focus, which supports up to 128 presets.
- 3) **Pan position auto compensation (Min 0.08° detection)**
 - If the pan get out of the position by external factor, this function will find a right position.
- 4) **Day & Night function (ICR)**
 - This function provides automatic mode changeover by sensing day or night conditions.
- 5) **40pcs of IR LEDs.**
 - The camera equipped with 40pcs of IR LEDs. It can capture clear images as far as 30m away even in total darkness.
- 6) **Real Time Clock function**
 - Inside the camera adopted RTC function and battery, it can be save current time.
- 7) **Schedule**
 - Schedule enables you to schedule a sequencing action by day and time.
 - A maximum of 8 schedule can be set.
- 8) **Alarm input/Alarm output**
 - Sensor can connect to alarm input to detect motion from outside.
 - Alarm output supports "relay out" and "Open collector output".
- 9) **Motion Detection function**
 - This camera provides "Motion detection" function.
- 10) **RS-485**
 - The function of the camera can be controlled by RS-485.
- 11) **Warm up & Cooling**
 - If the air temperature is low or high, the camera warm up or cool down due to the camera detect the air temperature using temperature sensor.
- 12) **Prevent diffused reflection from the IR LED**
 - The camera separated with IR LED, It can be prevent diffused reflection perfectly.

2.2 Accessories

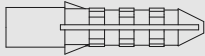
DRIVER TORX T10x105mm, 1EA



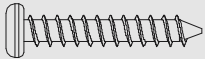
MOUNT SCREW M5x10, "-"TYPE, BRASS, 1EA



ANCHOR 6x35, 4EA



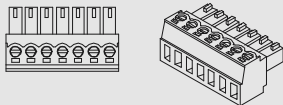
SCREW 4x35 Tp1, BIND SUS, 4EA



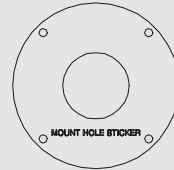
TERMINAL 15EDGR-3.81-5P, FEMALE



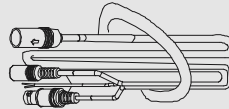
TERMINAL 15EDGR-3.81-7P, FEMALE



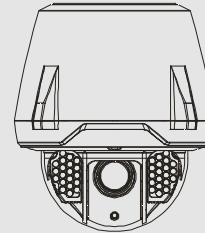
MOUNT HOLE STICKER, 1EA



CONVERT CABLE



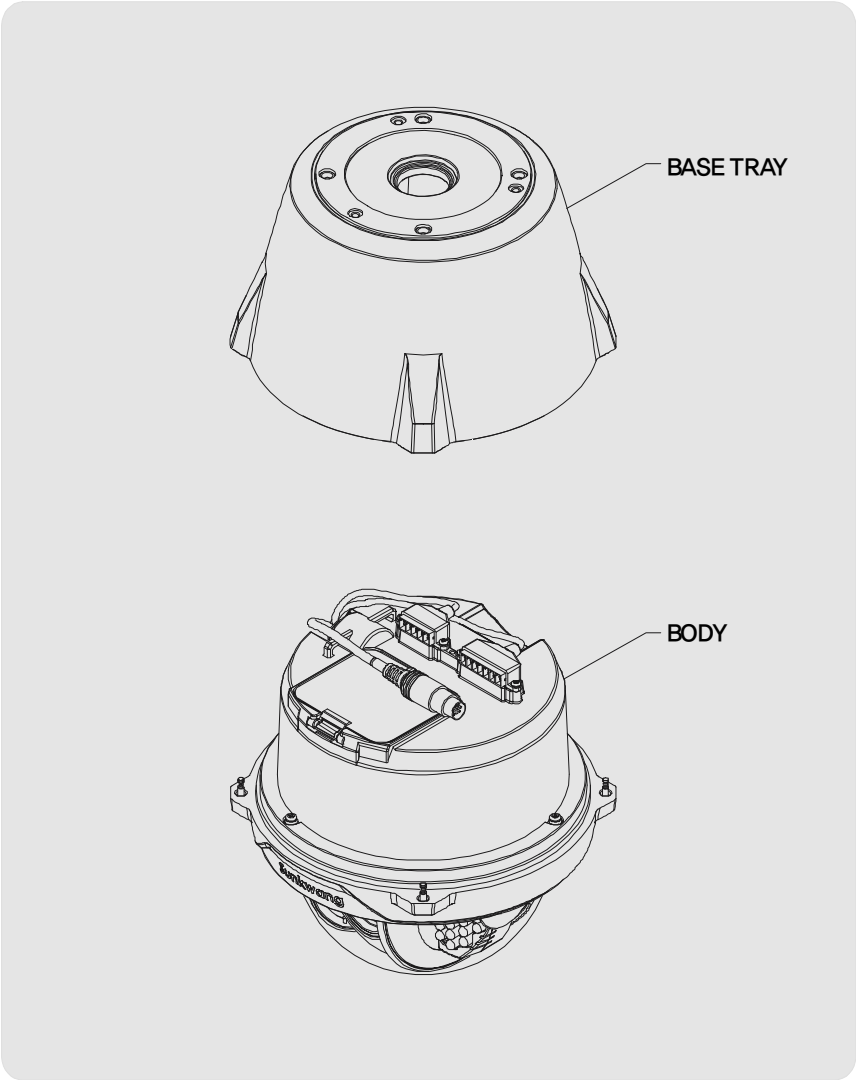
CAMERA



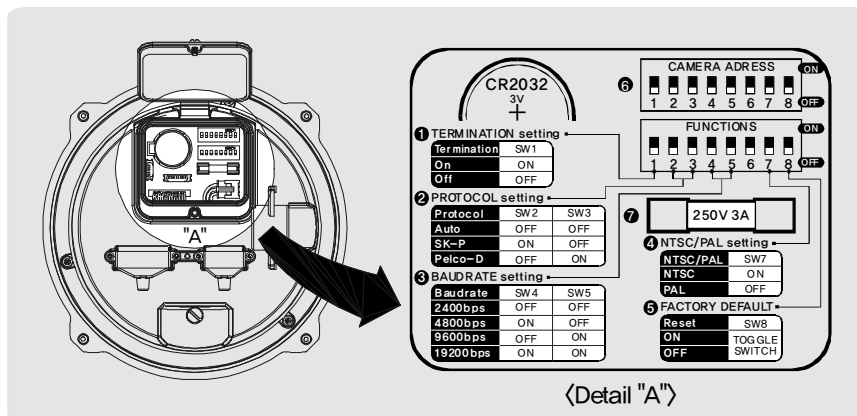
MANUAL



2.3 Designation
2.3.1 Configuration



2.3.2 Camera configuration



Switch setup

- ① Termination switch : Used for RS485 connection
- ON : Set on the last camera for 1:1 or multi communication between Camera and PC or a controller.
 - OFF : Set on all cameras except for the last camera for multi-communication.
 - Termination setting is as described on <Table 2-1>.

Termination	SW1
ON	ON
OFF	OFF

[Table 2-1] Termination switch

- ② Protocol setting switch
- Protocol can be set manually or automatically.
 - Upon selecting " Protocol Auto Detect" function, protocol will be selected automatically.
 - Protocol setting is as described on <Table 2-2>.

Protocol	SW2	SW3
Auto	OFF	OFF
SK-P	ON	OFF
Pelco-D	OFF	ON

[Table 2-2] Protocol setting switch

③ Baud rate setting switch

- Select baud rate.
- Baud rate setting is as described on <Table 2-3>.

Baudrate	SW3	SW4
2400 bps	OFF	OFF
4800 bps	ON	OFF
9600 bps	OFF	ON
19200 bps	ON	ON

[Table 2-3] Baud rate setting switch

④ NTSC/PAL setting switch

- ON : NTSC
- OFF : PAL
- Please refer to <Table 2-4>.

NTSC/PAL	SW1
NTSC	ON
PAL	OFF

[Table 2-4] NTSC/PAL setting switch

⑤ Factory default switch

- This is switch for camera reset.
- If reset is done at the switch "on", from next time it will be off.
- Factory default table is as follow.

RESET	SW8
ON	Toggle Switch
OFF	

[Table 2-5] Factory default switch

⑥ Camera address switch

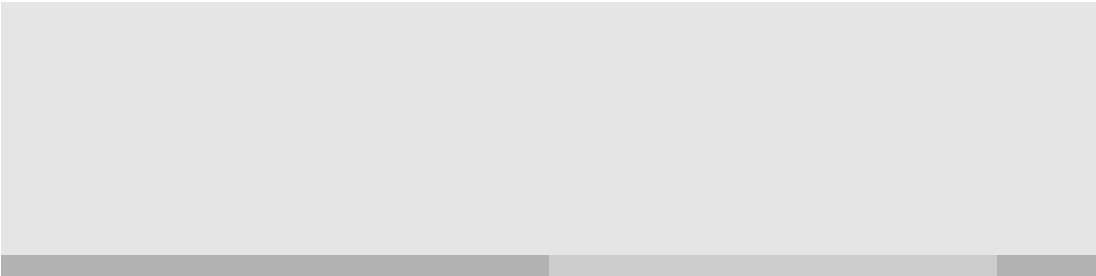
- It is to set camera ID to connect multiple cameras.
- Max. 255 of camera IDs(as binary notation) are available.
- Camera ID setting is as described on <Table 2-6>

Camera ID	SW1	SW2	SW3	SW4	SW5	SW6	SW7	SW8
1	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF
2	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF
3	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF
4	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF
5	ON	OFF	ON	OFF	OFF	OFF	OFF	OFF
6	OFF	ON	ON	OFF	OFF	OFF	OFF	OFF
7	ON	ON	ON	OFF	OFF	OFF	OFF	OFF
8	OFF	OFF	OFF	ON	OFF	OFF	OFF	OFF
9	ON	OFF	OFF	ON	OFF	OFF	OFF	OFF
10	OFF	ON	OFF	ON	OFF	OFF	OFF	OFF
11	ON	ON	OFF	ON	OFF	OFF	OFF	OFF
12	OFF	OFF	ON	ON	OFF	OFF	OFF	OFF
13	ON	OFF	ON	ON	OFF	OFF	OFF	OFF
14	OFF	ON	ON	ON	OFF	OFF	OFF	OFF
15	ON	ON	ON	ON	OFF	OFF	OFF	OFF
16	OFF	OFF	OFF	OFF	ON	OFF	OFF	OFF
17	ON	OFF	OFF	OFF	ON	OFF	OFF	OFF
18	OFF	ON	OFF	OFF	ON	OFF	OFF	OFF
19	ON	ON	OFF	OFF	ON	OFF	OFF	OFF
20	OFF	OFF	ON	OFF	ON	OFF	OFF	OFF
21	ON	OFF	ON	OFF	ON	OFF	OFF	OFF
22	OFF	ON	ON	OFF	ON	OFF	OFF	OFF
23	ON	ON	ON	OFF	ON	OFF	OFF	OFF
24	OFF	OFF	OFF	ON	ON	OFF	OFF	OFF
25	ON	OFF	OFF	ON	ON	OFF	OFF	OFF
26	OFF	ON	OFF	ON	ON	OFF	OFF	OFF
27	ON	ON	OFF	ON	ON	OFF	OFF	OFF
28	OFF	OFF	ON	ON	ON	OFF	OFF	OFF
29	ON	OFF	ON	ON	ON	OFF	OFF	OFF
30	OFF	ON	ON	ON	ON	OFF	OFF	OFF
31	ON	ON	ON	ON	ON	OFF	OFF	OFF
:	The rest is omitted.							

[Table 2-6] Camera address setting switch

⑦ Safety Fuse

– It prevent overflow of electricity for safety.(250V, 3A)



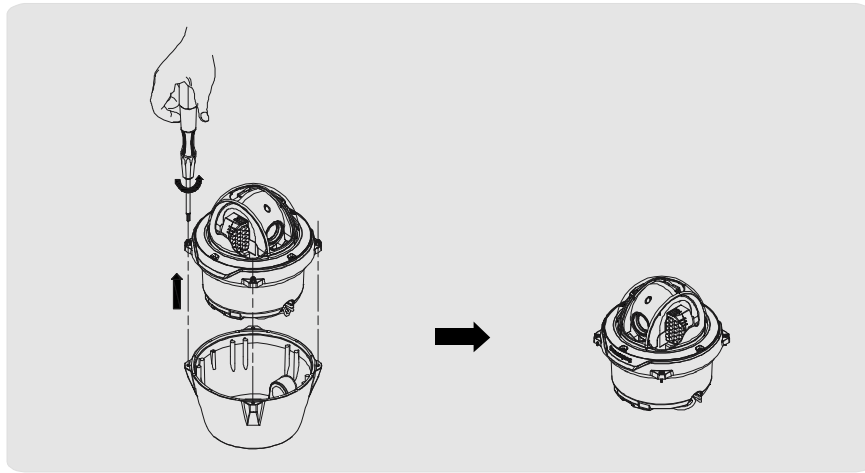
Chapter 3. How to install



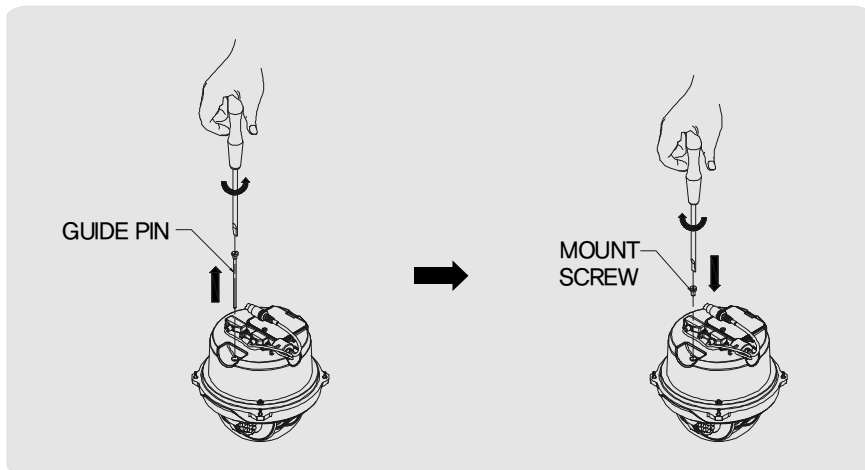
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3.1 How To Install

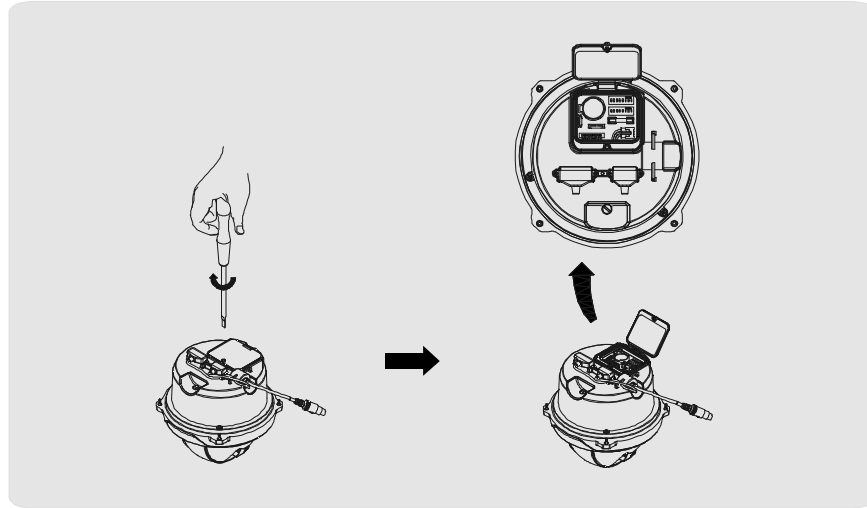
- 1) After loosening the fixing screw by supplied Torx driver, separate the body from the base tray.



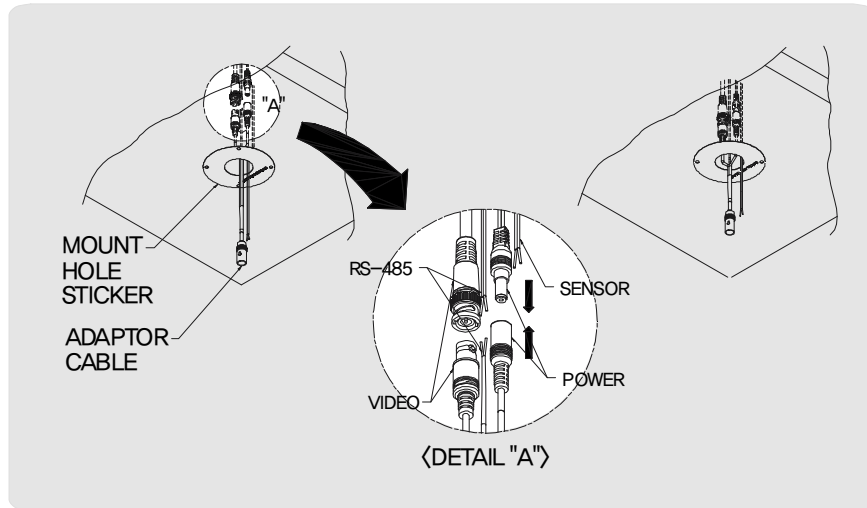
- 2) Remove the guide pin on the back side then fasten the fixing screw instead of guide pin.(※ Caution : If you don't get rid of the guide pin, The camera can't move.)



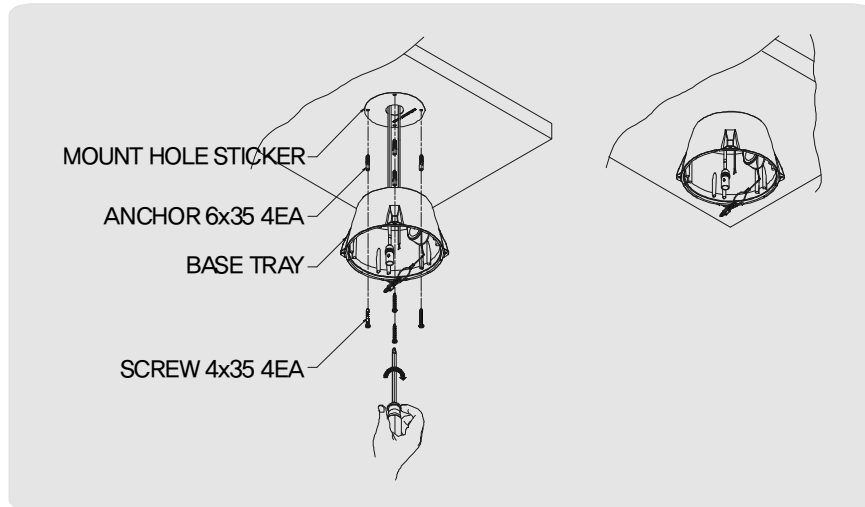
- 3) Open the switch door by "-" driver then adjust the switch. After finish setting, close the door.



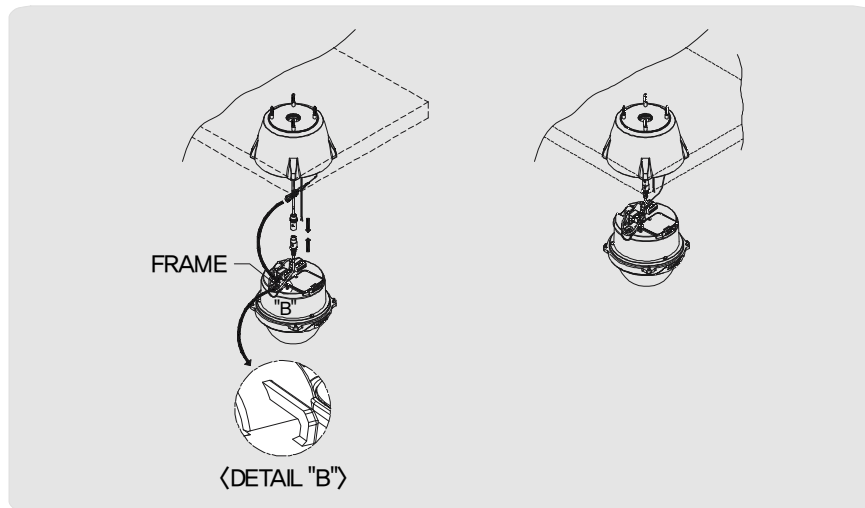
- 4) Make a hole using supplied "MOUNT HOLE STICKER" after that put the cable in the hole.



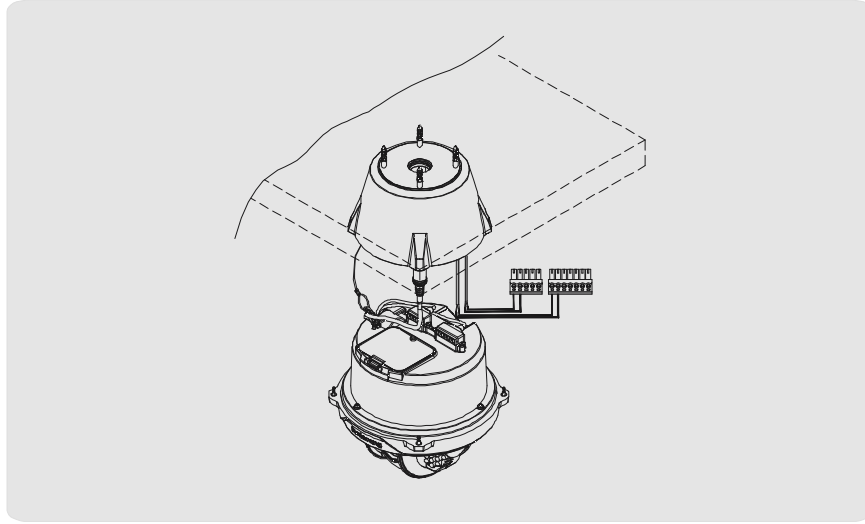
5) Firstly push in the anchor then fasten four screws to fix the base tray.



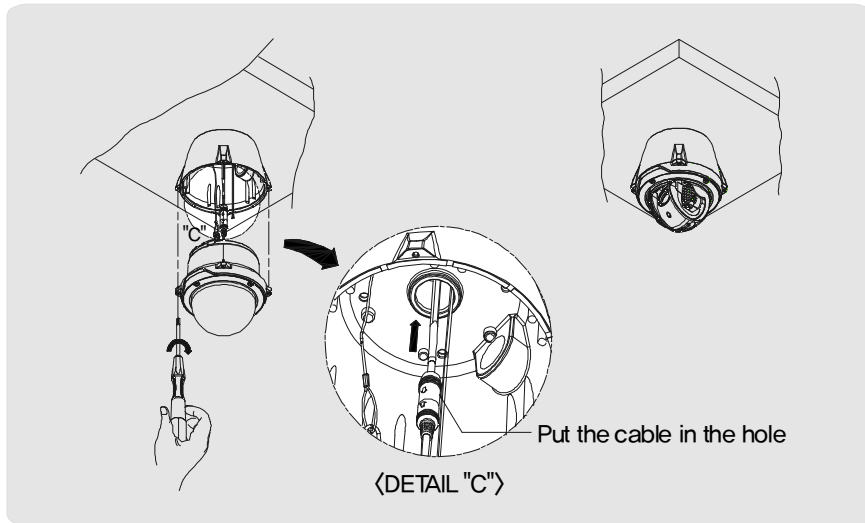
6) Hook the safety wire on the frame as below picture and connect a din cable.
(※Caution : You must hook the wire for preventing a falling accident.)



7) Separate the "TERMINAL BLOCK" and then wire the sensor cable to "Alarm In/Out".



8) Reassemble the base tray with body.



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Chapter 4. Menu configuration and operating

Not only basic function such as Pan/Tilt/Zoom but additional functions are available for this camera. Additional functions are as follow.

1. PRESET	Setting functions of speed dome such as Preset and Motion detection
2. MOTION CONTROL	Setting function of speed dome such as Sequence/Random Scan, Custom/CW/CCW Scan and Pattern/Schedule
3. TIME SET	Set current time
4. PRIVACY ZONE	Hide the points for which area masking is selected from the screen.
5. ALARM IN	Set regarding sensor input
6. ALARM OUT	Set operation of the connected sensor
7. SETUP	Set up for camera, motor and display
8. SYSTEM	System setting such as Password, Reboot, Reset, System Information and Step Out Init.
9. SCHEDULE	Schedule enables you to schedule a sequencing by day and time.
10. STEP OUT INITIAL	Compensate the pan position of camera

This functions are set on OSD.

[Table 4-1] Main menu description

OSD Menu setup by the specialty controller

1) MENU : Press "MENU" button to go to the menu(P/T/Z function would be stopped.)

2) IRIS OPEN : Move to the sub menu or select the menu.

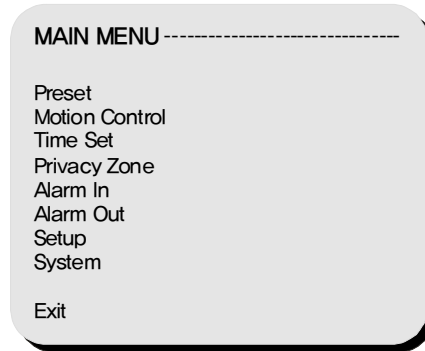
3) IRIS CLOSE : Move to the above menu or move the cursor to "EXIT"

4) JOY STICK :

- Right : Move the cursor to the right or the sub menu.
- Left : Move the cursor to the left or the previous menu.
- Up : Move the cursor to the above or increase the value.
- Down : Move the cursor to the below or decrease the value.

*If you move the joystick when working this function(Pattern, Preset) the function will stop, after finishing the control, the function will work again.

This is first page of the OSD menu.

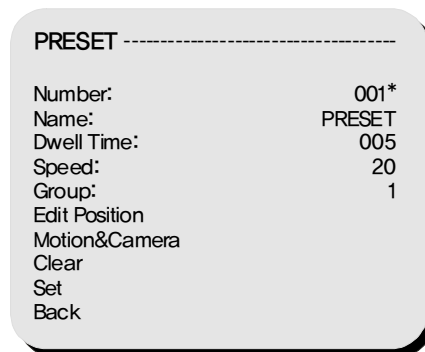


[Menu 4-1] Main Menu

4.1 PRESET

4.1.1 PRESET(Path : MAIN MENU↓ / PRESET)

This function is to save, delete, or call the specific position of Pan, Tilt, Zoom or Focus by user's option.



[Menu 4-2] Preset Menu

4.1.1.1 SAVE PRESET POSITION

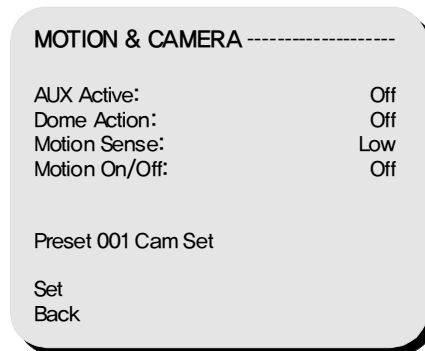
- 1) **Number** : Change the number.(If you already set the number, The "*" will appear at the right of the number.)
- 2) **Name** : Press "IRIS OPEN" or "MENU" button of the controller to set the name of preset.

4.1.1.2 CALL THE PRESET POSITION

- 1) Input the preset number you want to move on "NUMBER".
 - 2) In case "*" appears at the right of the number, press "IRIS CLOSE" button.
- [TIP] With special controller(option), you can use "PRESET" function easily.

4.1.2 MOTION DETECTION(Path : MAIN MENU↵ / PRESET↵ / MOTION & CAMERA)

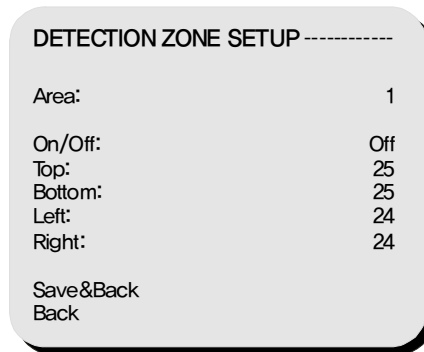
This is the sub menu for preset. You can set eight specific zones on the screen and upon detection of motion on the zones, the camera would operate as what you set.



[Menu 4-5] Motion & Camera Menu

4.1.2.1 MOTION DETECTION SETTING

- 1) AUX Active :
 - Off : No action.
 - AUX1 : Relay upon detection of motion.
 - AUX2 : Activate output of "Open collector".
- 2) Dome Action :
 - Off : No action.
 - PTRN1 ~ PTRN4 : The camera move as PTRN1~PTRN4 upon detection of motion.
 - CW : Scan clockwise automatically upon detection of motion.
 - CCW : Scan counterclockwise automatically upon detection of motion.
 - CUSTOM : Patrol the area set by the user on "Custom set".
- 3) Motion Sense : Sets sensitivity of motion sensor. Low or High is selectable.
- 4) Motion On/Off : You can select enable/disable of the motion detection. This has sub menu for setting Detection zone

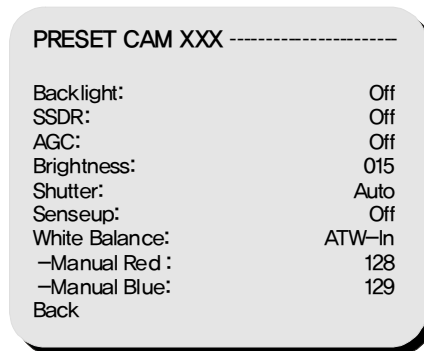


[Menu 4-6] Detection Zone Setup

- ①Area : Select 8 Motion Detection Zones.
- ②On/Off : Select On/Off of each area.
- ③Top : Setting top size of selected area.(01~26)
- ④Bottom : Setting bottom size of selected area.(05~30)
- ⑤Left : Setting left size of selected area.(01~44)
- ⑥Right : Setting right size of selected area.(05~48)
- ⑦Save&Back : Save the current value and then move back to menu.
- ⑧Back : Move back to menu without save.

4.1.3. PRESET XXX CAM SET

User can setting the camera in each preset number.



[Menu 4-7] Preset Cam XXX Menu

Chapter 4. Menu configuration and operating

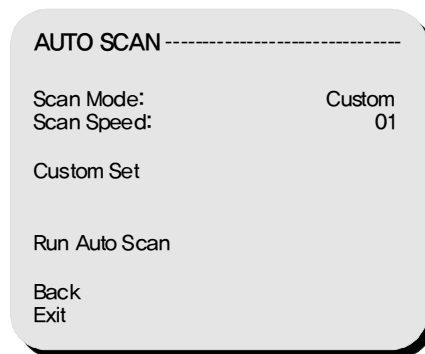
The set-up of above menu is changed to camera set-up which fits each preset number in case of executing Sequence/Random Scan, after executing change/save. Please refer to "4.7.1 Camera Setup" section for the explanation of operation on above menu.

4.2. MOTION CONTROL

4.2.1. AUTO SCAN(Path : MAIN MENU-↓ / MOTION CONTROL-↓ / AUTO SCAN)

This function is to make the camera panning automatically at the fixed speed. "TILT" or "Zoom" function can be set by user's option on AUTO SCAN mode.

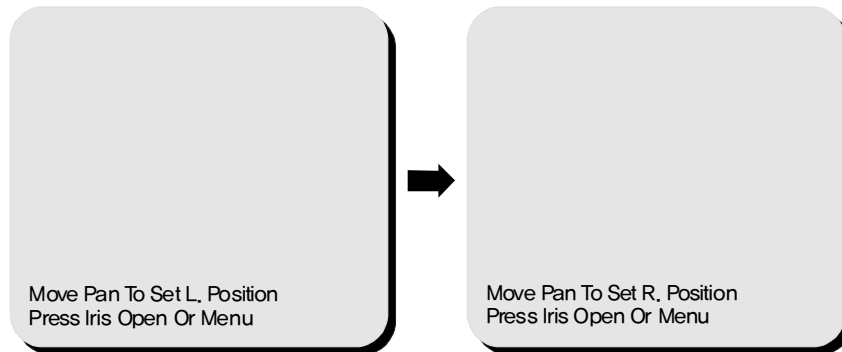
〈Caution〉 Move joystick to the right or the left to stop AUTO SCAN mode but after few seconds the auto scan action again. If you want to stop this function, send "STOP" command by the controller.



[Menu 4-8] Auto Scan Menu

4.2.1.1 AUTO SCAN SETTING

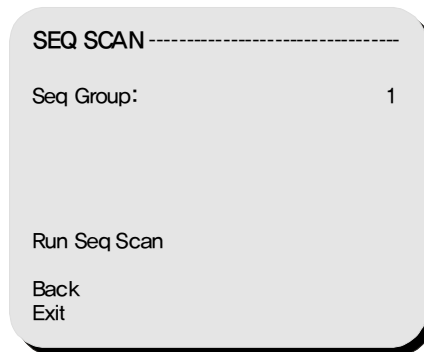
- 1) Scan Mode :
 - CW : Clockwise auto scan
 - CCW : Counterclockwise auto scan.
 - Custom : Patrol the area set by the user on "Custom set".
- 2) Scan Speed : Max, 20 levels are selectable. Higher number means higher speed. Default value is "5"
- 3) Custom Set : Limits the range of movement in the PAN direction. Determine the left/right end position using the joystick and press "IRIS OPEN" or "MENU" key to complete custom set.
- 4) Run Auto Scan : Start the Auto scan by user setting mode.
- 5) Move the joystick to stop the auto scan, after few seconds the auto scan again.
- 6) Send the command of Auto Scan Stop or menu key to move out the Auto scan.



[Menu 4-9] Custom Scan Setting Menu

4.2.2 SEQ SCAN(Path : MAIN MENU↵ / MOTION CONTROL↵ / SEQ SCAN)

This function is to move the camera to the memorized positions one by one according to the group.



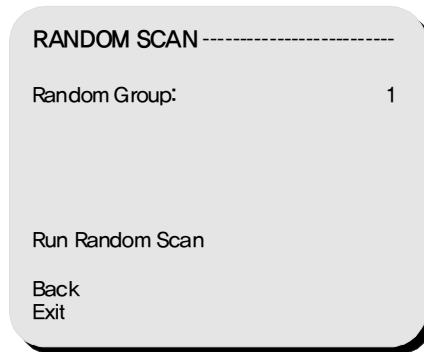
[Menu 4-10] Seq Scan Menu

4.2.2.1 SEQ SCAN SETTING

- 1) **Seq Group** : The camera moves to the memorized positions one by one according to the group. Please refer to "4.1 Preset" to set group. Max. 8 groups are available.
- 2) **Run Seq Scan** : Run SEQ SCAN by user set group.
- 3) Move the joystick to stop the seq scan, after few seconds the seq scan again.
- 4) Send the command of Sequential Scan Stop or menu key to move out the Sequential scan.

4.2.3 RANDOM SCAN(Path : MAIN MENU↵ / MOTION CONTROL↵ / RANDOM SCAN)

This function is to move the camera to the memorized positions randomly.



[Menu 4-11] Random Scan Menu

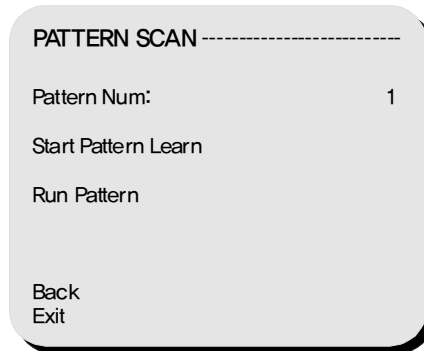
4.2.3.1 RANDOM SCAN SETTING

- 1) Random Group : Register up to 8 groups. The camera moves to the memorized positions randomly according to the group. Please refer to "4.1 PRESETS" to set group.
- 2) Run Random Scan : Run random scan user set group
- 3) Move the joystick to stop the auto scan, after few seconds the auto scan again.
- 4) Send the command of Random Scan Stop or menu key to move out the Random scan.

4.2.4 PATTERN SCAN(Path : MAIN MENU↵ / MOTION CONTROL↵ / PATTERN SCAN)

This function is to memorize the position by panning, tilting, or zooming for a while and move the camera to the memorized positions. Save up to 4 patterns.

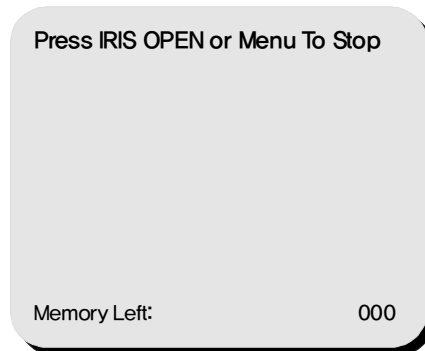
"PATTERN SCAN" repeats until user moves joystick or press "STOP" on the controller.



[Menu 4-12] Pattern Scan Menu

4.2.4.1 PATTERN SCAN SETTING

- 1) Pattern Num : Set pattern number.(1~4) Default value is 1.
- 2) Start Pattern Learn : To move P/T/Z to memorize pattern.



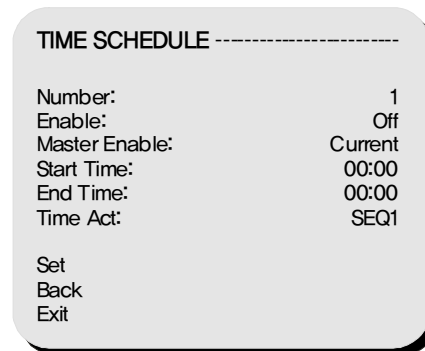
[Menu 4-13] Pattern Scan Set Menu

: Memory Left – Display the available number of memory.

- 3) Run Pattern : Run pattern.
- 4) Move the joystick to stop the pattern scan, after few seconds the pattern scan again
- 5) Send the command of pattern Stop or menu key to move out the pattern scan.

4.2.5 TIME SCHEDULE(Path : MAIN MENU↵ / MOTION CONTROL↵ / TIME SCHEDULE)

Schedule enables you to schedule a sequencing by day and time. Up to 8 timeline can be selected for a day.



[Menu 4-14] Time Schedule Menu

4.2.5.1 TIME SCHEDULE SETTING

- 1) **Number** : Select number of schedule. Up to 8 timeline can be selected for a day.
Default value is 1.
- 2) **Enable** : Determine whether to use this function or not.
- 3) **Master Enable** : It manages Schedule Enable from No.1 to No.8.
 - **Current** : It changes set point of Enable at the point of entering menu.
 - **All off** : It changes set point of Enable from No.1 to No.8 to OFF
 - **All on** : It changes set point of Enable from No.1 to No.8 to ON
- 4) **Start Time** : Set start time. Press the IRIS OPEN or MENU key to select hour and then press again the IRIS OPEN or MENU key to select minute. After that you should press the 'IRIS CLOSE' key to escape this menu.
- 5) **End Time** : Set end time.
- 6) **Time Act** : Select the sequencing action to schedule the action.
 - **OFF** : No action.
 - **PTRN 1~4** : The camera move as PTRN1~PTRN4.
 - **SEQ 1~8** : The camera move as SEQ1~SEQ8.
 - **CW** : Scan clockwise automatically.
 - **CCW** : Scan counterclockwise automatically.
 - **Custom** : The camera working Auto Scan mode by custom mode.
- 7) **Set** : Save the value and then move out this menu.

TIME TABLE -----				
No	Ena	Act	Start	End
1.	On	PTRN1	13:30	~ 14:55
2.	Off	SEQ1	00:00	~ 00:00
3.	Off	CCW	00:00	~ 00:00
4.	Off	CW	00:00	~ 00:00
5.	Off	SEQ2	00:00	~ 00:00
6.	Off	SEQ3	00:00	~ 00:00
7.	Off	PTRN2	00:00	~ 00:00
8.	Off	PTRN3	00:00	~ 00:00

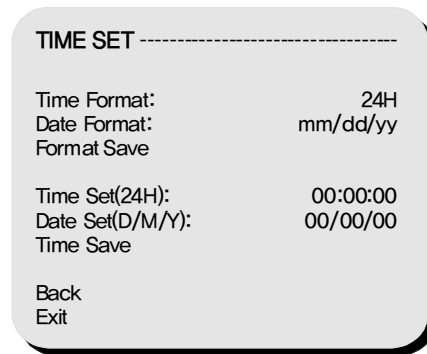
Press Menu To Exit

[Menu 4-15] Time Table Menu

: When turning ON this menu, the timetable appears as shown on the picture.

4.3 TIME SET(Path : MAIN MENU-1 / TIME SET)

Customize the camera clock; you can schedule sequence actions to perform automatically.
<Caution> If the time error occurs, you should replace the battery in the camera.



[Menu 4-16] Time Set Menu

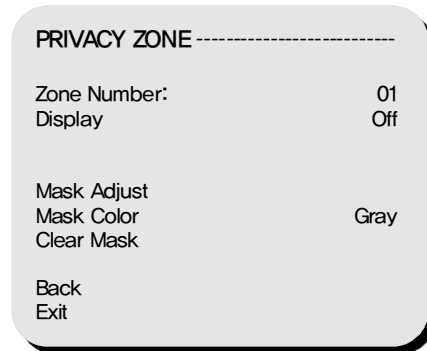
4.3.1 TIME SET SETTING

- 1) Time Format : Change the display format of the camera time 24H or 12H.
<Caution> Time set 12hours/24hours will be affected only on a screen. The function of "Time set" and "Time schedule" you must set 24 hours standard.
- 2) Date Format : Change the display format of the camera date.(DD/MM/YYYY or MM/DD/YYYY)
- 3) Format Save : Save the display format of the camera date and time.
- 4) Time Set : Enter a time.
- 5) Date Set : Enter a date.
- 6) Time Save : Save current value.

4.4 PRIVACY ZONE(Path : MAIN MENU-1 / PRIVACY ZONE)

For privacy, this camera provides a function for hiding the points for which area masking is selected from screen.

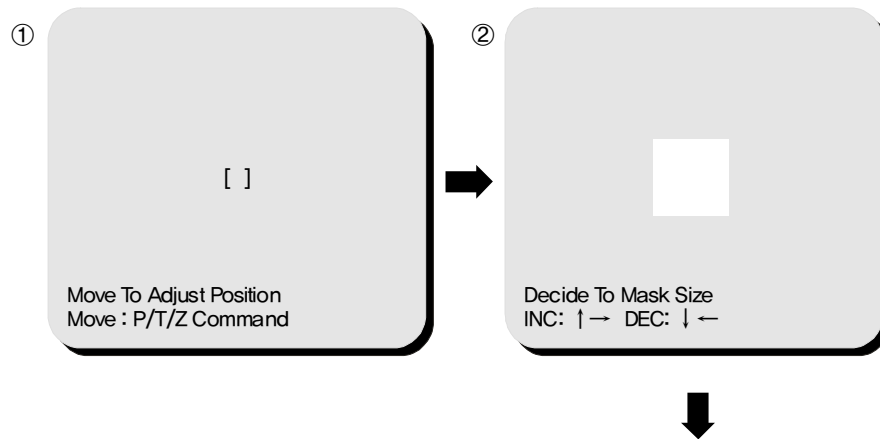
<Caution> Area masking can be set up to 8 zones.

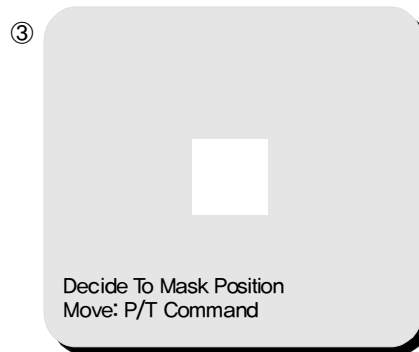


[Menu 4-17] Privacy Zone Menu

4.4.1 PRIVACY MASK SETTING

- 1) Zone Number : Up to 8 zones.
- 2) Display : To determine whether to be privacy zone visible.
- 3) Mask Adjust : Set the position and size the selected privacy zone.





[Menu 4-18] Privacy Zone Setting Menu

- ① Please move to where you want place as shown on the ① picture. After that press the IRIS OPEN or MENU key to move next step.
- ② Set the size of privacy zone as shown on the ② picture. After that press the IRIS OPEN or MENU key to move next step.
- ③ Set the position of privacy zone as shown on the ③ picture. After that press the IRIS OPEN or MENU key to finish this function.
- 4) **Mask Color** : To change the color of Privacy zone, 6 color are selectable.(Gray/Blue/Black /White/Red/Green)
- 5) **Clear Mask** : Delete the set mask.

4.5 ALARM IN(Path : MAIN MENU-↓ / ALARM IN)

This function is to activate alarm upon detection of sensor.

ALARM IN -----

Sensor Num:	1
Priority:	1
Input Contact:	Off
Activate	
└ AUX:	Off
└ Preset:	Off
└ Dome Act:	Off
Set	
Back	
Exit	

[Menu 4-19] Alarm In Menu

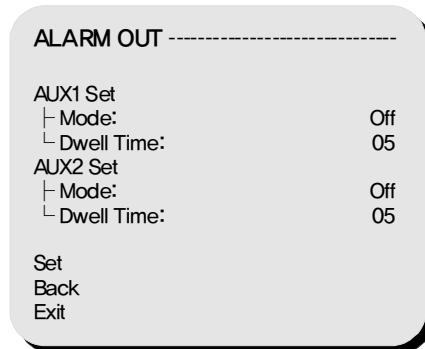
4.5.1 ALARM IN SETTING

- 1) **Sensor Num** : Set the alarm numbers up to 8. Please refer to Terminal configuration for alarm input.
- 2) **Priority** : Set the priority of 8 alarm inputs and react to the alarm input in accordance with the priority.
Lower number means higher priority. Operation by the alarm with higher priority takes precedence over the alarm with lower priority. In case of the alarms with the same priority, the camera would be operated by the latest alarm in. On operating by the alarm with higher priority, the alarm with lower priority would be ignored.
- 3) **Input Contact** : Set according to the connected sensor.
 - Off : No sensor connected.
 - N,O : Normally Open.
 - N,C : Normally Close.

⟨Caution⟩ In case there is no sensor connected, Please set "OFF", otherwise it might cause malfunction.
- 4) **Activate** : Set "On" to activate "ALARM OUT", "PRESET" or "DOME ACTION". Operation by "PRESET" would be just one time, and after that, operation by "DOME ACTION" would repeat .
 - **AUX** : Enables selecting an alarm output method.(Off/1/2) Off is not support alarm output. 1 is Relay. 2 is Open collector.
 - **Preset** : Enables setting up a Preset action.
 - **Dome Action** : Enables setting up a Dome action.

4.6 ALARM OUT(Path : MAIN MENU-↓ / ALARM OUT)

To set the output against the alarm input.

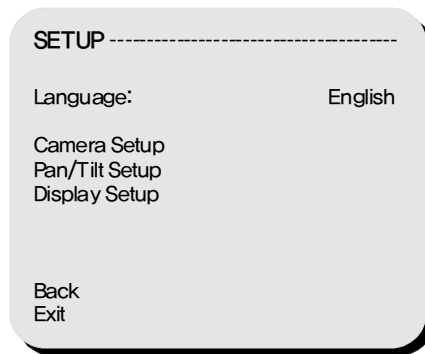


[Menu 4-20] Alarm Out Menu

- 1) Mode :
 - Off : No action,
 - P_Act : Output until cancelling the alarm regardless Dwell Time.
 - M_Act : Output for Dwell Time.
- 2) Dwell Time : Set dwell time from 1 to 60sec.

4.7 SETUP(Path : MAIN MENU↓ / SETUP)

This is setup for camera function such as display, Pan/Tilt and etc.



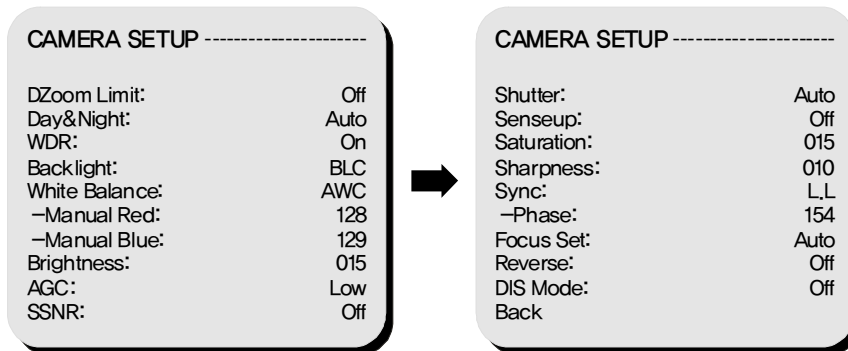
[Menu 4-21] Setup Menu

: The camera supports multi-language.

<Caution> The language might be different according to the F/W.

4.7.1 Camera Setup(Path : MAIN MENU↓ / SETUP↓ / CAMERA SETUP)

Set the camera's option.

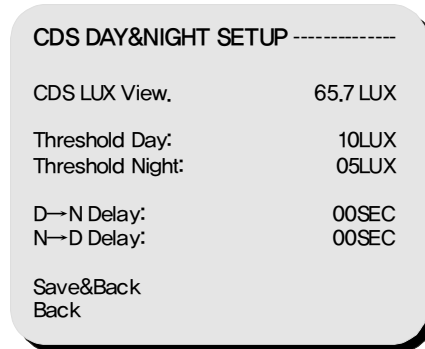


[Menu 4-22] Camera Setup Menu

: The page of menu is separated as 2 pages. You can move to next page on the end of first page.

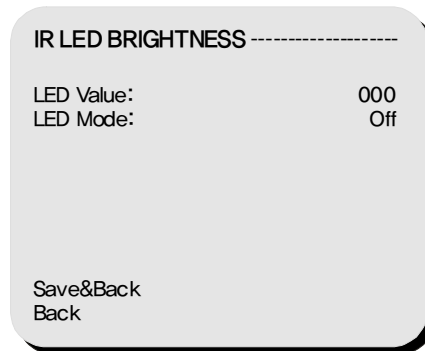
Chapter 4. Menu configuration and operating

- 1) DZoom Limit : Set the maximum digital zoom.(Off~16X)
- 2) Day/Night : Select from color, B/W or AUTO modes



[Menu 4-23] CDS Day&Night Menu

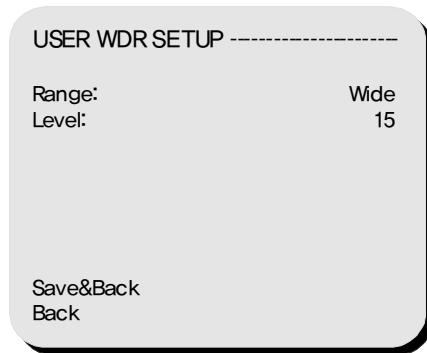
- **Auto** : The picture switches automatically color to B/W as the light level changes.
 - CDS LUX View : Find current lux level of scene.
 - Threshold Day : Select brightness of illumination about changing to B/W.
 - Threshold Night : Select brightness of illumination about changing to color.
 - D→N Delay : Select duration time about changing to night.
 - N→D Delay : Select duration time about changing to day.
- **Night** : The picture switches to B/W.



[Menu 4-24] IR LED Brightness Menu

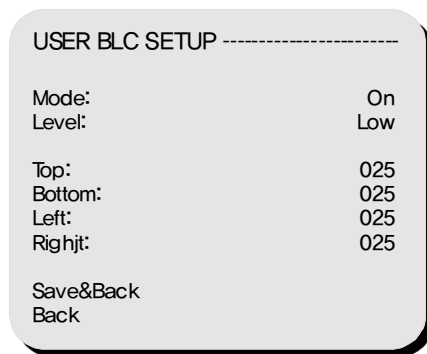
- LED Value : The range of LED level is 000 to 255.
- LED Mode : Light mode can be set to protect close saturation.
- **Day** : The picture switches to color.

3) **WDR** : When there are both bright and dark areas at the same time, this mode makes both areas distinctive.



[Menu 4-25] User WDR Setup

- **Range** : Defines a range of WDR.(Normal/Wide)
 - **Level** : Adjusts the screen brightness in WDR mode.
- 4) **Backlight** : Select backlight compensation type.(Off/BLC/HLC)

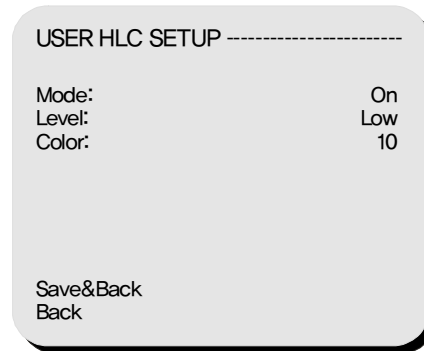


[Menu 4-26] BLC Setup

- **Off** : Disables the Backlight mode.
- **BLC** : Activates a user defined backlight compensation mode.
 - **Mode** : Determines whether to use the BLC Zone.
 - **Level** : Select level of BLC Zone.

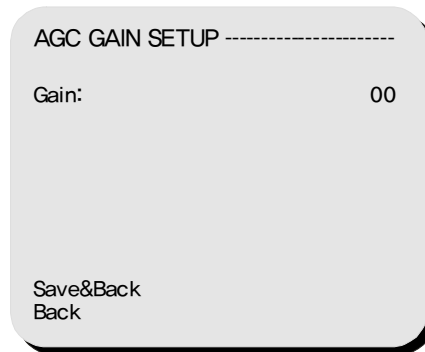
Chapter 4. Menu configuration and operating

- Top : Setting the top size of BLC Zone.(000~100)
- Bottom : Setting the bottom size of BLC Zone.(000~100)
- Left : Setting the left size of BLC Zone.(000~100)
- Right : Setting the right size of BLC Zone.(000~100)
- **HLC** : HLC masks strong light sources from the camera lens, blocking them from saturating the monitor screen.



[Menu 4-27] HLC Setup

- Mode : Determine whether to use the HLC or not.
 - Level : Three HLC operation levels are available(Low/Middle/High)
 - Color : Adjust the masking brightness.(00~15)
- 5) **White Balance** : Adjusts the balance of the screen colors
- **ATW/IN** : Adjusts the screen color to be optimal in an indoor environment.
 - **ATW/OUT** : Automatically adjusts the screen color to be optimal in bright outdoors environments.
 - **AWC** : Adjust the screen color when the camera is beginning
 - **Manual** : Enables customization of the Red and Blue gain.
- 6) **Brightness** : Adjust the screen brightness. (000~100)
- 7) **AGC** : AGC adjusts the camera's gain control and the screen brightness if the camera has captures an object under low-light condition. The Low, Medium, High and Manual modes are available.

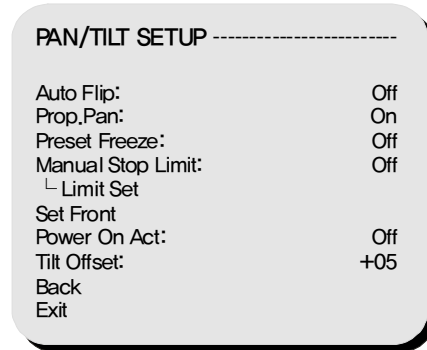


[Menu 4-28] AGC Gain Setup

- Gain : Setting Manual gain value instead of AGC Auto.(00~36)
- 8) **SSNR** : SSNR significantly reduces the amount of low luminance noise.
- 9) **Shutter** : Control the camera's electronic shutter.
- Auto : Control the camera's electronic shutter automatically.
 - Anti_FLK : Select this setting when you experience picture flickering.
 - Manual : 1/60~512X
- 10) **Sense Up** : Automatically detects light levels and maintains a clear picture at night or under low-light conditions.(Off~512X)
- 11) **Saturation** : Saturation level adjustable.(000~100)
- 12) **Sharpness** : Sharpness level adjustable.(00~30)
- 13) **Sync** : This function is to select video sync. The Internal and Line Lock modes are available.
- Phase : Control the Phase of the image
- 14) **Reverse** : Set a image inversion.
- 15) **Focus Set** : Setting the Focus Mode.
- Auto : Automatically control the focus.
 - Manual : Manually control the focus.
 - Z.Trigg : Control the focus when Zoom is working.
- 16) **DIS Mode** : The function supports digital image stabilization.

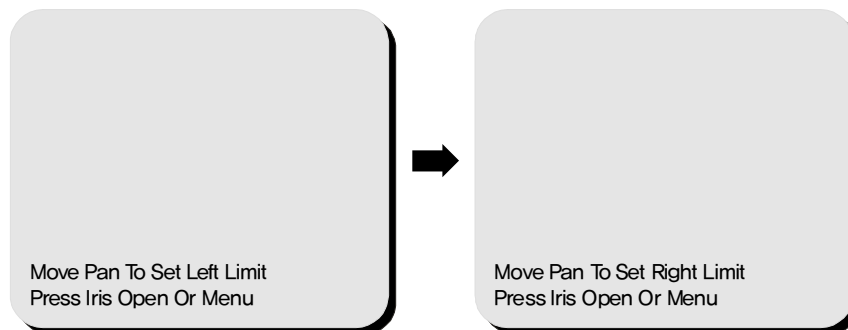
4.7.2 PAN/TILT SETUP(Path : MAIN MENU↓ / SETUP↓ / PAN/TILT SETUP)

This is to set the functions related to PAN/TILT.



[Menu 4-29] Pan/Tilt Setup Menu

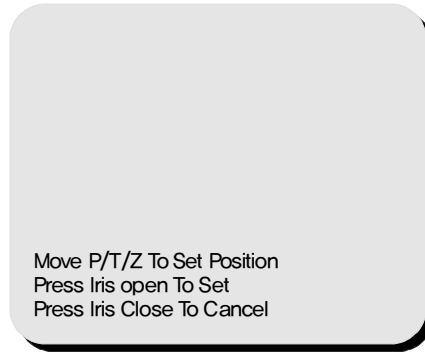
- 1) **Auto Flip** : For monitoring an object moving below a camera , by running Auto Flip, moving objects can be monitored..
- 2) **Prop.Pan(Proportional Pan)** : Pan and tilt speed compensation function linked to zoom position allows fine manual operation even during zooming.
- 3) **Preset Freeze** : On running preset function, the previous preset position will be shown until the camera reaches a specified preset position to reduce the unnecessary memories and to show clean pictures.
- 4) **Manual Stop Limit** : To activate "MANUAL STOP LIMIT".



[Menu 4-30] Manual Stop Limit Set Menu

: Manual stop limit set – Set the limit of panning range.

5) Set Front : To memorize the front of the camera.



[Menu 4-31] Front Set Menu

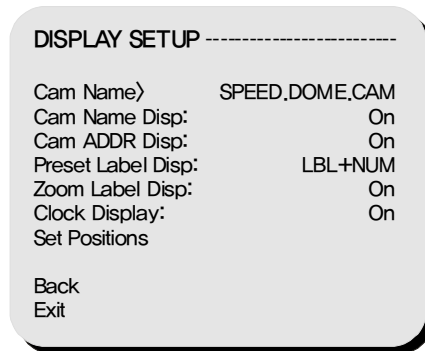
: Move P/T/Z to set front direction and then press the IRIS OPEN key to finish the setup.

6) Power On Act : Set the program to operate when the camera turns on.

7) Tilt Offset : Tilt range would be limited by the setting degree at both end.

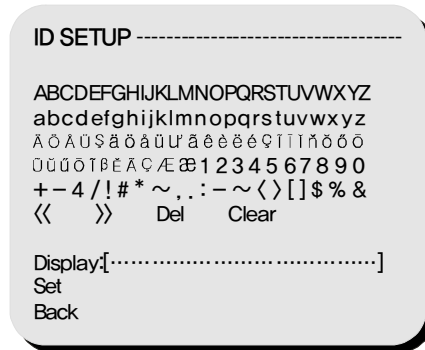
4.7.3 DISPLAY SETUP(Path : MAIN MENU-↓ / SETUP-↓ / DISPLAY SETUP)

Set the displays of camera name, camera address, preset label or zoom label.



[Menu 4-32] Display Setup Menu

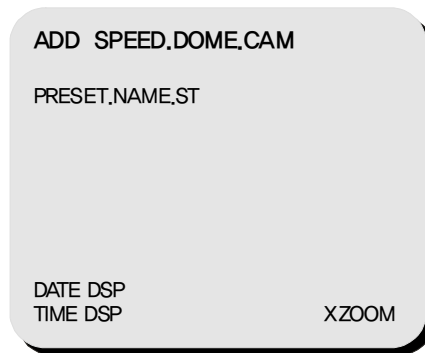
- 1) Cam Name : Set or change the camera name.



[Menu 4-33] ID Setup Menu

: Max. 14 characters are available. Default name is 'SPEED,DOME,CAM'

- 2) Cam Name Disp : Determines whether to display the camera ID.
- 3) Cam ADDR Disp : Determines whether to display the camera's address.
- 4) Preset Label Disp : Select the position of preset name and whether preset name displays or not.
- 5) Zoom Label Disp : Select the position of the zoom magnification and whether magnification of zoom displays or not.
- 6) Clock Disp : Determines whether to display the time and date.
- 7) Set Positions : Move joy stick left or right to select the position of label and press "IRIS OPEN" button to confirm.



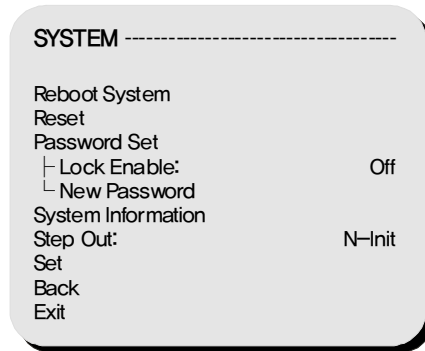
[Menu 4-34] ID Position Set Menu

Chapter 4. Menu configuration and operating

: Setting a position of ID in order of precedence(Cam Name → Cam Addr → Preset Name → Zoom → Date → Time).
Press the IRIS OPEN or MENU key to move next step.

4.8 SYSTEM(Path : MAIN MENU↓ / SYSTEM)

Set the camera's option.



[Menu 4-35] SYSTEM Menu

- 1) Reboot System : Reboot system without any deletion of setting.
- 2) Reset : Factory reset.
 <Caution> Time is not change even the camera has reset.
- 3) Password Set : To prevent from changing the setting values by other users, an user can use password to lock the camera. Factory default is "1 2 3 4".
 <Caution> Default password is "1234"
 · Lock Enable : Locked with password.
 · New Password : To change the previous password.



[Menu 4-36] Password Input Menu

: To save the changed password, input the previous password as below picture.



[Menu 4-37] Password Reset Menu

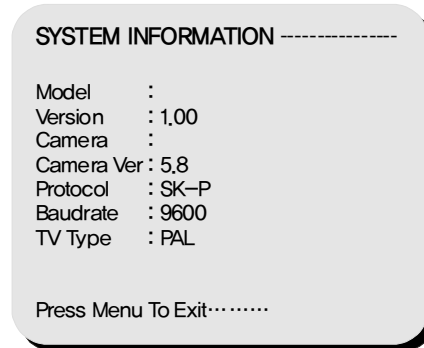
: If you selected function of the "Lock Enable" is On, You should input the password when you enter the menu



[Menu 4-38] Password Compare Menu

: If the password is corrected you can enter the menu.

4) **System Information** : Display the settings and version of the speed dome camera.




[Menu 4-39] System Information Menu

: Press the MENU or IRIS OPEN key to move back to previous menu.


4.8.1 STEP OUT

Enables detect step out of the camera by external factor.


- **N-Init** : If the camera detected step out, the camera move to previous step out position without sensor initial.
- **Init** : To detect step out and then sensor initial.
- **Off** : No action.



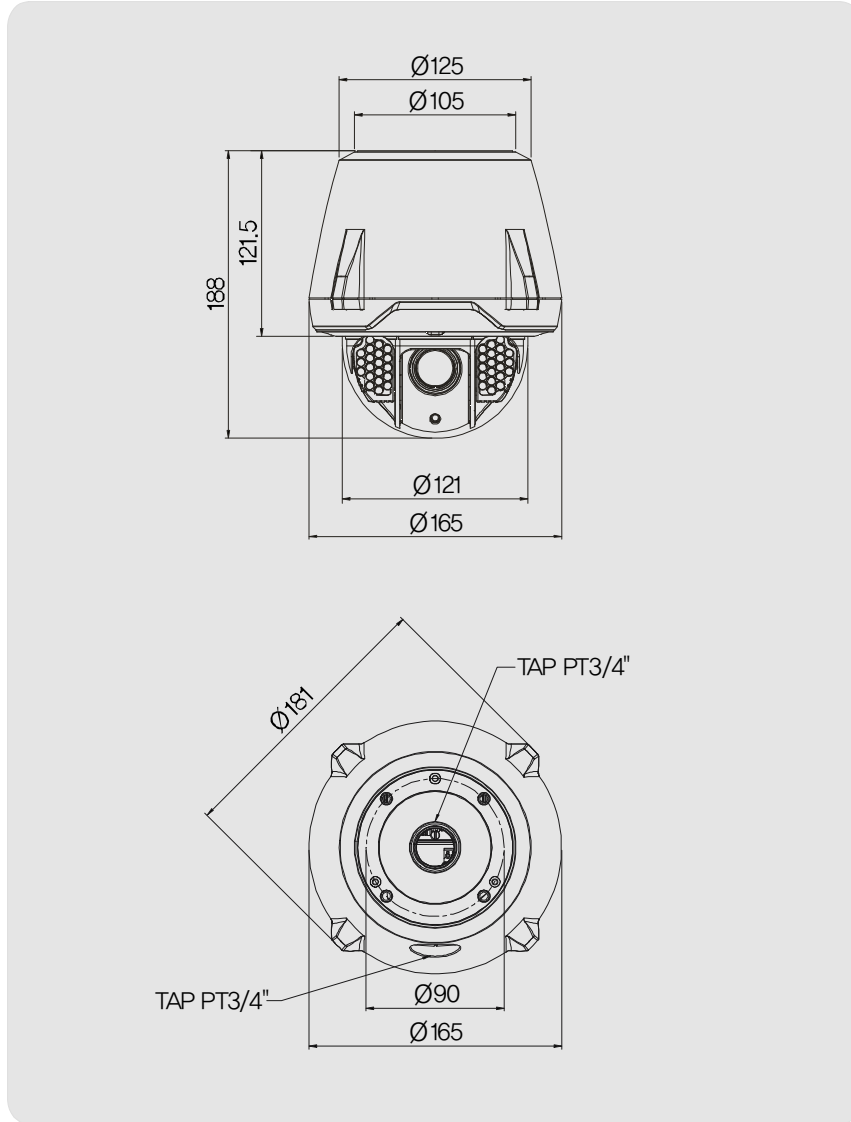
Chapter 5. Specification



5.1 Dimension	51
5.2 Specification	52



5.1 Dimension



5.2 Specification

Item		Specification
Lens	Zoom	Optical 12X, Digital 16X
	Focal Length	f = 3.94 ~ 46.05mm(F 1.67 ~ F 1.88)
Image Sensor	CCD	1/4" COLOR SONY SUPER HAD CCD II
	Resolution	Color : 560 TV-Line, B/W : 680 TV-Line
	Effective Pixel	768(H) X 494(V) 752(H) X 582(V)
Video	TV Type	NTSC / PAL
	Video Output	1.0Vp-p(Sync. Negative), Termination 75Ω
	Sync. type	Internal / External(Line-lock)
	Min. Illumination	0.0001 Lux(W/Sense up), 0 Lux(30m Range) – LED ON
	LED	IR LED 40 PCS
	DAY&NIGHT	ICR(AUTO / COLOR / BW)
	Backlight	OFF / BLC / HLC / SSSDR
	Sense Up	OFF / ON(X2 ~ X512)
	SSNR	OFF / LOW / MIDDLE / HIGH
Privacy Zone	8 Zone	
Motion	Pan/Tilt Angle	Pan : 360°(Endless), Tilt : -5 ~ 185°(Mechanical Auto Flip)
	Pan Speed	Preset : Max, 250°/sec, Manual : 0.05 ~ 120°/sec
	Preset	128 points
	Pattern	4 patterns(210sec ~ 2 hours : depends on complexity)
	Tour	8 tours
	Auto Scan	CW / CCW / Custom mode
	Position Compensation	Pan position auto compensation
	Schedule	8 Schedule
Function	Time	Set, OFF / ON
	Alarm Input	4 Port
	Alarm Output	Open Collector(DC 5V, 40mA) / Relay(2A DC, 30V / 0.5A AC, 125V)
Control	Address(ID)	255
	Remote Control	RS-485
	Protocol	AUTO, SK-P, PELCO-D
	Baudrate	2,400bps, 4,800bps, 9,600bps, 19,200bps
Power		24V AC / 18W, 1.5A or 12V DC, 2A
Operation Temp.		-20°C ~ 60°C
Preservation Temp.		-20°C ~ 60°C
Demension		∅165mm X 188mm
Weight		Approx 2.5 Kg
Bracket(option)		SK-AB20(wall bracket), SK-AB21(ceiling bracket)

〈Supplement〉 Menu configuration and operating

PELCO-D Extended Command

Hot Key description for Pelco-D Protocol user.

PELCO-D PROTOCOL EXTENDED COMMAND SET	
Preset60 Move	SET PATTERN STOP
Preset61 Move	SET PATTERN START 1
Preset62 Move	SET PATTERN START 2
Preset63 Move	SET PATTERN START 3
Preset64 Move	SET PATTERN START 4
Preset70 Move	PATTERN STOP
Preset71 Move	PATTERN RUN 1
Preset72 Move	PATTERN RUN 2
Preset73 Move	PATTERN RUN 3
Preset74 Move	PATTERN RUN 4
Preset80 Move	SEQUENTIAL STOP
Preset81 Move	SEQUENTIAL RUN 1
Preset82 Move	SEQUENTIAL RUN 2
Preset83 Move	SEQUENTIAL RUN 3
Preset84 Move	SEQUENTIAL RUN 4
Preset85 Move	SEQUENTIAL RUN 5
Preset86 Move	SEQUENTIAL RUN 6
Preset87 Move	SEQUENTIAL RUN 7
Preset88 Move	SEQUENTIAL RUN 8
Preset92 Move	SET LEFT LIMIT AT AUTO SCAN (CUSTOM)
Preset93 Move	SET RIGHT LIMIT AT AUTO SCAN (CUSTOM)
Preset94 Move	RESET (REBOOT SYSTEM)
Preset95 Move	MENU
Preset96 Move	STOP SCAN
Preset97 Move	AUTO SCAN (CUSTOM)
Preset98 Move	SEQUENTIAL RUN 1
Preset99 Move	AUTO SCAN (CUSTOM)

[Troubleshooting]

Problem	Solution
Initial operation is not working.	<ul style="list-style-type: none"> · Check the power cord and line connection. · Check the adaptor for the camera. · Is there no fuse or disconnected fuse? Check the current consumption and use the recommended fuse.
Nothing appears on the screen. The image on the screen is dim.	<ul style="list-style-type: none"> · Check the video cable and line connection. · Is dome stained with dirt? · Adjust the lens ' focus properly.
The image on the screen flickers.	<ul style="list-style-type: none"> · Is the camera facing to fluorescent lighting? Change the camera position.
The image is not clear.	<ul style="list-style-type: none"> · Adjust the sharpness feature of the camera. · Please make sure your monitor status.
The image on the screen is dark. The color of the picture is not matched.	<ul style="list-style-type: none"> · Adjust the contrast feature of the monitor. · Adjust the brightness feature of the camera. · Adjust the white balance feature of the camera.
PTZ operation is not working.	<ul style="list-style-type: none"> · Check the communication cable and line connection. · Check the number & protocol setting between the camera and controller.
Aux output is not working.	<ul style="list-style-type: none"> · Did you connect some equipment with the camera during NC or NO? Please recheck your equipment.
The time is not matched current time.	<ul style="list-style-type: none"> · Check the battery.

[Warranty Card]

PRODUCT NAME		IR SPEED DOME CAMERA		TERM OF THE GUARANTEE
MODEL NO.				
DATE OF PURCHASE				FOR ONE YEAR AFTER THE DATE OF PURCHASE
CUSTOMER	NAME		P/N	
	ADDRESS			
SELLER	NAME		P/N	
	ADDRESS			

THE HISTORY OF AFTER-SALES SERVICE		
YEAR	PROBLEM	PERSON IN CHARGE

※ This product will be under warranty for one year after the date of purchase.



Please read this manual carefully before installing and using the camera.
Be sure to keep the manual handy for later reference.