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P/No..6806-0575-01A

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SAMSUNG

- Before attempting to operate this product, please read the instructions carefully.



- ENGLISH
- ESPAÑOL
- 日本語

22x SPEED DOME CAMERA
Operation/Programming

SPD-2200



Thank you for purchasing a **SAMSUNG CCTV CAMERA**.
 Before operating the camera, confirm the camera model and proper input power voltage. In order that you can understand this manual thoroughly, we'll introduce our model description.

■ Model Description

SPD-2200 x

Signal System

- Signal System
 - N → NTSC Model
 - P → PAL Model

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



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



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

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

WARNING - Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

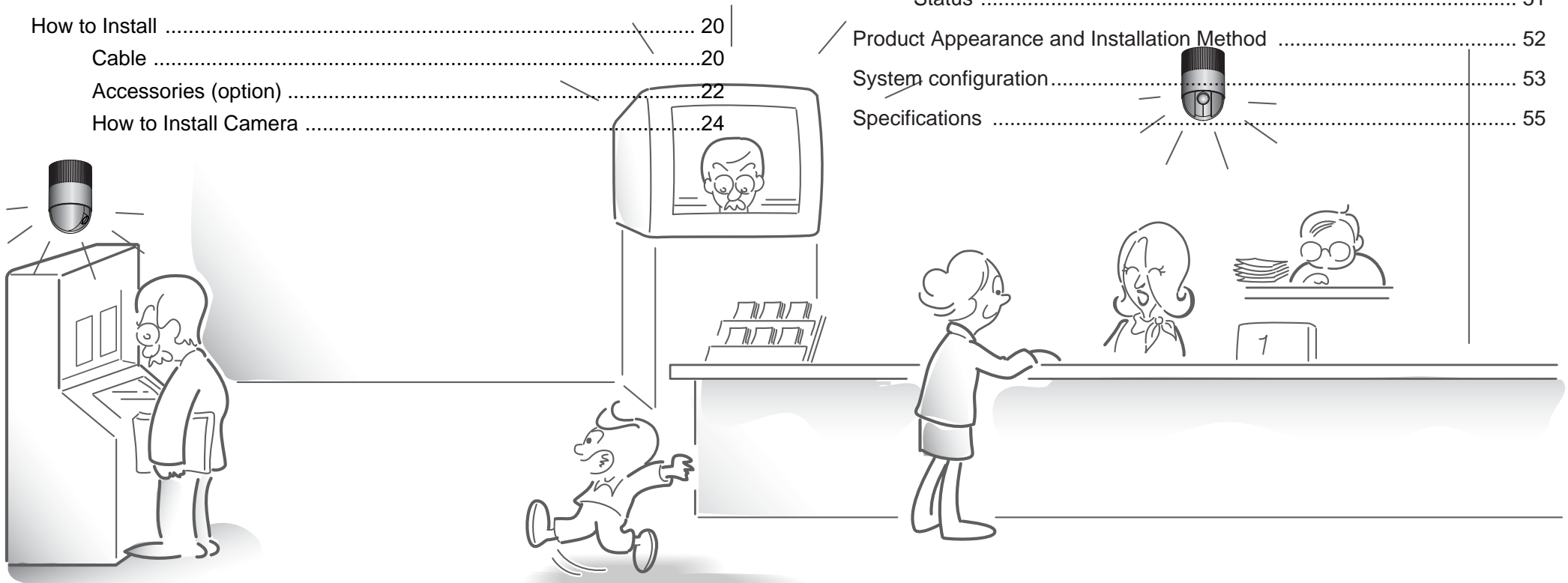
CAUTION : To prevent electric shock and risk of fire hazards:

- ◆ Do NOT use power sources other than that specified.
- ◆ Do NOT expose this appliance to rain or moisture.

This installation should be made by a qualified service person and should conform to all local codes.

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Warning & Caution

! Warning

Please read the instructions carefully for correct use of the product, and observe these cautions to prevent danger or physical damage while operating it.


Warning / Caution


! Warning If you fail to read this information, or handle the product incorrectly, death or serious injury may result.

! Caution If you fail to read this information, or handle the product incorrectly, serious injury or physical damage may result.

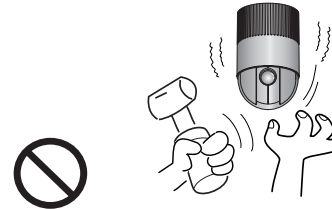
Sign

 Not allowed.

 No disassembly.

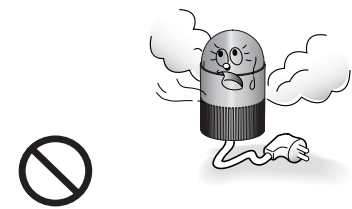
 Be sure to keep this.

The unit should be installed by trained personnel.



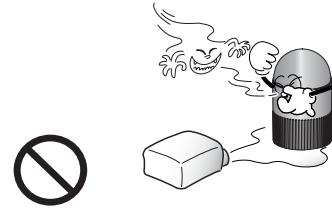
Installation by unskilled personnel without sufficient experience or expertise may result in fire or electric shock. Always ask your sales agent to perform installation.

Always stop using the product if it emits smoke or becomes unusually hot.



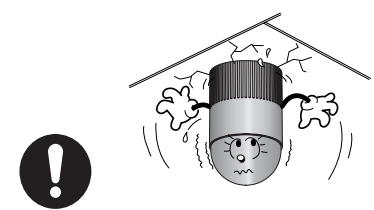
Continuing to use it under such circumstances may result in fire.

Never install the product in areas exposed to water, oil or gas.



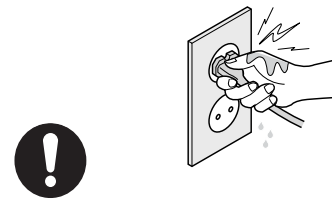
Doing so may result in malfunctions, electric shock or fire.

Never install the product on a ceiling that is not strong enough to bear its weight.



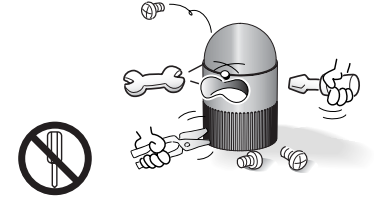
The product may fall.

Never touch the power cord with wet hands.



Touching the power cord with wet hands may result in electric shock.

Never disassemble the product or insert foreign bodies into it.



Malfunction may result.

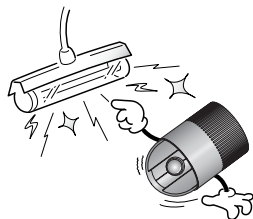
! Caution

Never install the product in locations with extreme high or low temperature.



Installing the product in areas subject to temperatures of over 50°C or below 0°C may result in deterioration of picture quality or other problems. Pay special attention to ventilation when installing the product in high ambient temperatures.

Never install the product in places where the lighting conditions fluctuate.



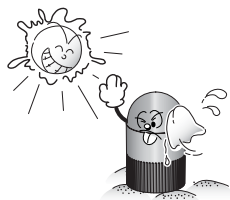
Frequent changes of illumination, for example from unstable fluorescent lighting, may result in malfunction.

Never drop the product, or subject it to severe impact or vibration.



Malfunction may result.

Never expose the product to direct sunlight or harmful rays.



Direct sunlight or harmful rays may cause fatal damage to the CCD or internal circuitry.

Never touch the glass on the front of the product.



This glass is one of the key components. Be careful not to leave fingerprints or other marks on the glass.

Never install the product in areas exposed to rain or water.



If water gets into the product it may cause failure.

Main Features



Auto-focusing 22x Zoom lens

The digital zoom function of the built-in 22x zoom lens, together with its auto-focus feature, zooms an image by up to 220x.



Various auto-surveillance functions

- PTZ trace
Manually plays recorded images of up to about 120 seconds.
- Auto swing
Repeats pan and tilt between two preset positions.
- Group sequence
Switches to and checks a maximum of 128 preset positions in order.
- Tour sequence
Switches to and checks a maximum of 6 group sequences in order.



Smart P/T function

Pan and tilt speed compensation function linked to zoom position allows fine manual operation even during zooming.



Area Masking for 8 points

Area Masking can be set up for up to 8 points. For Privacy, this device provides a function for hiding the points for which Area Masking is selected from the screen.



Day & Night function

Slow-shutter and day and night switching enable optimum screen monitoring over 24 hours.

- * Slow-shutter function improves CCD sensitivity by electrically lengthening exposure time.
- * Day & Night function enables the color and black and white screens to be used respectively during the day and at night.



OSD (On Screen Display) function

Provides character information displayed on the monitor, such as the camera ID address, camera name, preset number, preset name, area name and sequence status, and easily sets various camera functions from the OSD menu screen.



Home Position Auto Return function

Returns the dome to a specified preset position at a fixed time after ending manual operation.



128 Preset Positions

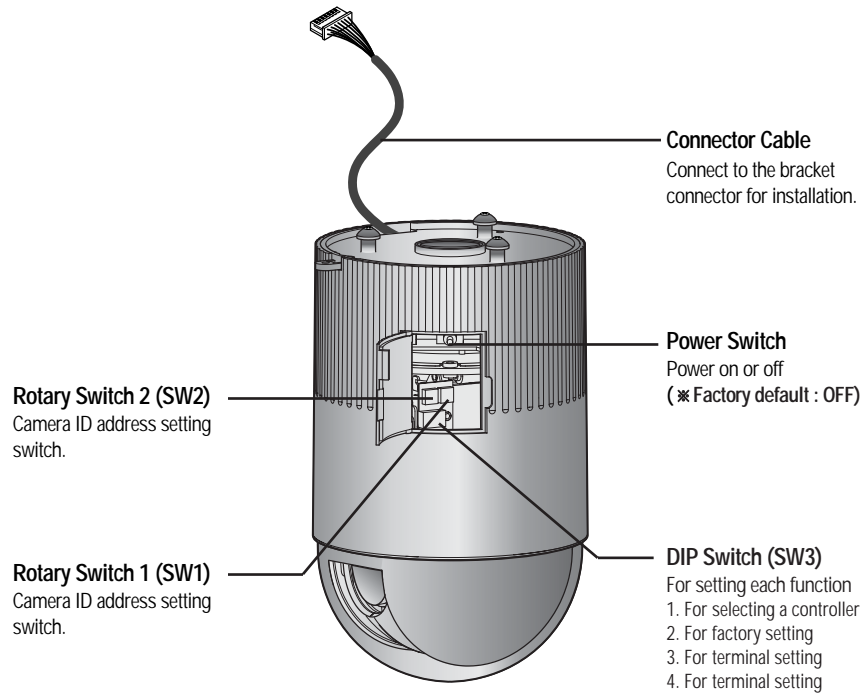
A maximum of 128 preset positions can be set. The preset function enables you to set the location you want to monitor at any time.



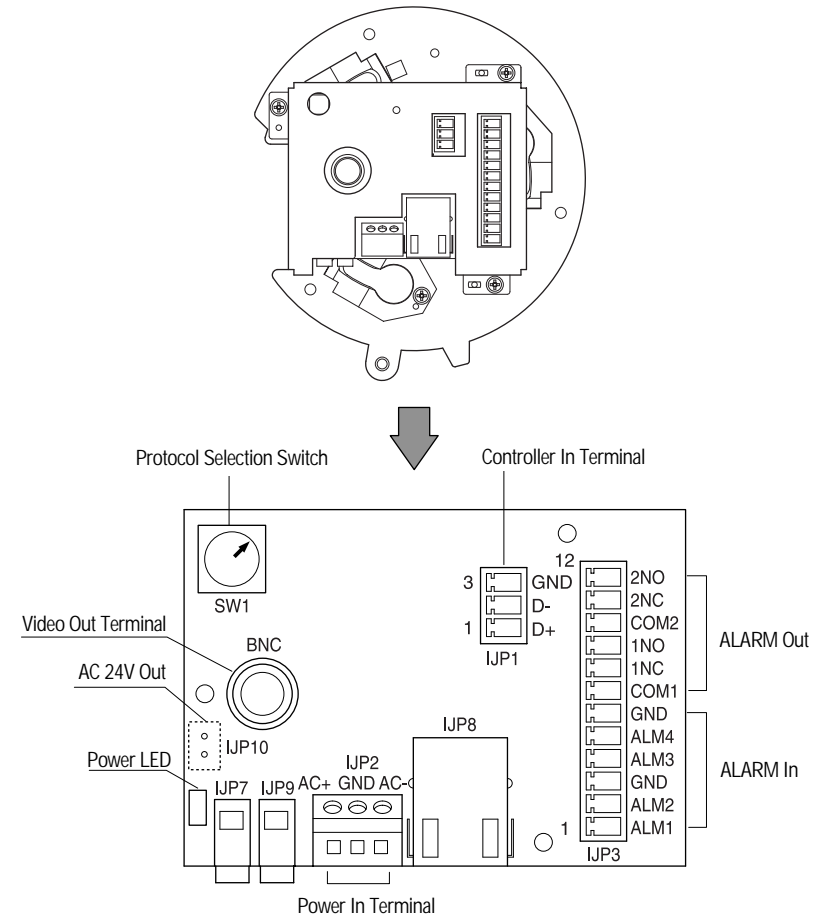
Auto Flip

For monitoring an object moving below a camera, run Auto Flip using a joystick controller, and moving objects can be monitored without reversing, both up and down and left to right.

Front Panel



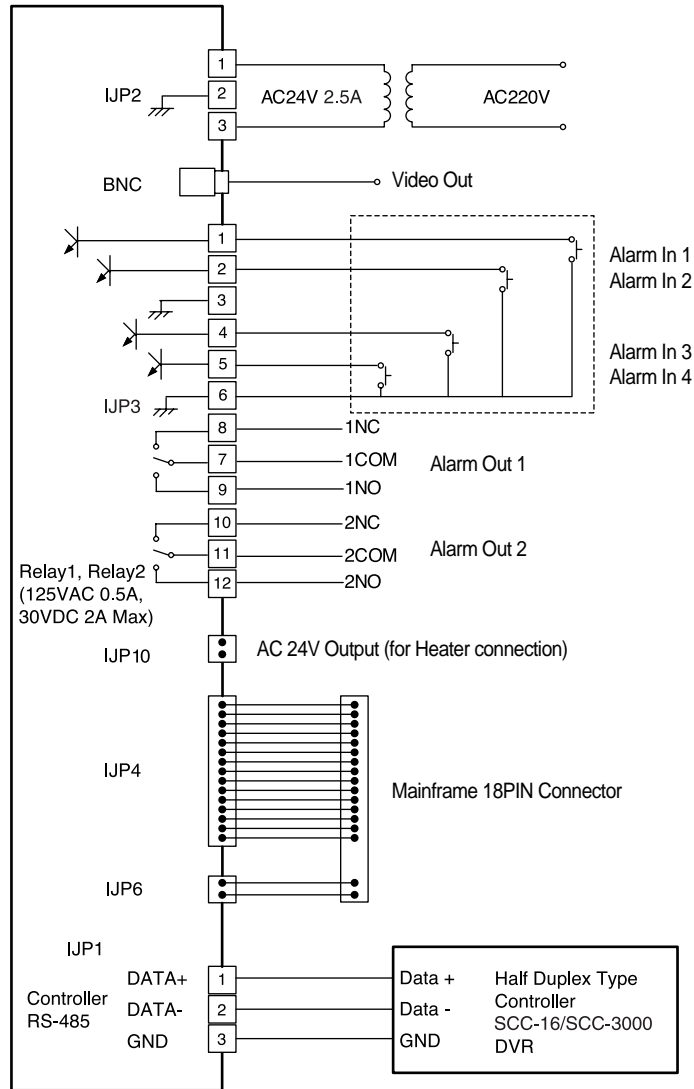
Back Panel



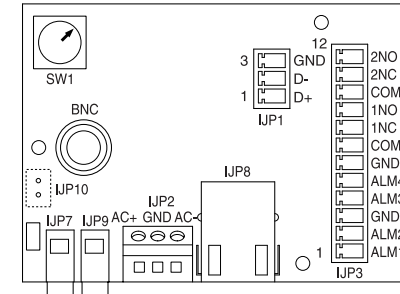
Cautions

- If the Rotary Switch and DIP Switch (SW3) are not displayed, turn the power off and on again. Both switches will then be displayed.
- Do not pull or hold onto the connector cables when moving or delivering the product. It may cause operational failure.
- See the inside of the door for settings for the switches on the main unit of the product.

Bracket Setup for Installation



Initial Setting



● Communication Protocol Setting (Installation Bracket)

Select and set SW1 on the installation bracket for setting the communication protocol.

SW1	Protocol	Baud Rate (BPS)
0	Samsung	9,600
1	Samsung	19,200
2	Pelco-D	2,400
3	Pelco-D	4,800
4	Pelco-D	9,600
5-F	Reserve	

Note) Factory Default : 0 (Samsung, 9600)

● Baud Rate Setting by DVR Model

For control of the speed dome camera using DVR without a dedicated controller, set the baud rate by DVR model as described below.

DVR Model	Protocol	Samsung	Pelco
SVR-430		9600,19200	9,600
SVR-900/1620		9600,19200	4800, 9600
SVR-1630		9600,19200	2400,4800,9600

Note) A faster rate may degrade stability.

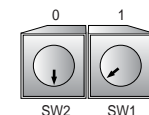
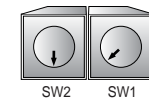
The control function may not be available depending on the DVR Firmware version.

Be sure to install the latest DVR Firmware version.

● Camera ID Setting (Mainframe front panel)

Set the Camera ID using the two rotary switches. SW1 and SW2 refer to the lower and upper positions, respectively.

EX) If the camera ID is number 1, set as described below.



Getting started

● Camera ID Switch Setting

Camera ID	SW2	SW1	Remarks
ID = 0	0	0	Not applicable
ID = 1	0	1	
ID = 2	0	2	
ID = 3	0	3	
ID = 4	0	4	
ID = 5	0	5	
ID = 6	0	6	
ID = 7	0	7	
ID = 8	0	8	
ID = 9	0	9	
ID = 10	0	A	
ID = 11	0	B	
ID = 12	0	C	
ID = 13	0	D	
ID = 14	0	E	
ID = 15	0	F	
ID = 16	1	0	
ID = 17	1	1	
ID = 18	1	2	
ID = 19	1	3	
ID = 20	1	4	
ID = 21	1	5	
ID = 22	1	6	
ID = 23	1	7	
ID = 24	1	8	
ID = 25	1	9	
ID = 26	1	A	
ID = 27	1	B	
ID = 28	1	C	
ID = 29	1	D	
ID = 30	1	E	
ID = 31	1	F	
ID = 32	2	0	
ID = 33	2	1	
ID = 34	2	2	
ID = 35	2	3	
ID = 36	2	4	
ID = 37	2	5	
ID = 38	2	6	
ID = 39	2	7	
ID = 40	2	8	
ID = 41	2	9	
ID = 42	2	A	
ID = 43	2	B	
ID = 44	2	C	
ID = 45	2	D	
ID = 46	2	E	
ID = 47	2	F	

Camera ID	SW2	SW1	Remarks
ID = 48	3	0	
ID = 49	3	1	
ID = 50	3	2	
ID = 51	3	3	
ID = 52	3	4	
ID = 53	3	5	
ID = 54	3	6	
ID = 55	3	7	
ID = 56	3	8	
ID = 57	3	9	
ID = 58	3	A	
ID = 59	3	B	
ID = 60	3	C	
ID = 61	3	D	
ID = 62	3	E	
ID = 63	3	F	
ID = 64	4	0	
ID = 65	4	1	
ID = 66	4	2	
ID = 67	4	3	
ID = 68	4	4	
ID = 69	4	5	
ID = 70	4	6	
ID = 71	4	7	
ID = 72	4	8	
ID = 73	4	9	
ID = 74	4	A	
ID = 75	4	B	
ID = 76	4	C	
ID = 77	4	D	
ID = 78	4	E	
ID = 79	4	F	
ID = 80	5	0	
ID = 81	5	1	
ID = 82	5	2	
ID = 83	5	3	
ID = 84	5	4	
ID = 85	5	5	
ID = 86	5	6	
ID = 87	5	7	
ID = 88	5	8	
ID = 89	5	9	
ID = 90	5	A	
ID = 91	5	B	
ID = 92	5	C	
ID = 93	5	D	
ID = 94	5	E	
ID = 95	5	F	

Camera ID	SW2	SW1	Remarks
ID = 96	6	0	
ID = 97	6	1	
ID = 98	6	2	
ID = 99	6	3	
ID = 100	6	4	
ID = 101	6	5	
ID = 102	6	6	
ID = 103	6	7	
ID = 104	6	8	
ID = 105	6	9	
ID = 106	6	A	
ID = 107	6	B	
ID = 108	6	C	
ID = 109	6	D	
ID = 110	6	E	
ID = 111	6	F	
ID = 112	7	0	
ID = 113	7	1	
ID = 114	7	2	
ID = 115	7	3	
ID = 116	7	4	
ID = 117	7	5	
ID = 118	7	6	
ID = 119	7	7	
ID = 120	7	8	
ID = 121	7	9	
ID = 122	7	A	
ID = 123	7	B	
ID = 124	7	C	
ID = 125	7	D	
ID = 126	7	E	
ID = 127	7	F	
ID = 128	8	0	
ID = 129	8	1	
ID = 130	8	2	
ID = 131	8	3	
ID = 132	8	4	
ID = 133	8	5	
ID = 134	8	6	
ID = 135	8	7	
ID = 136	8	8	
ID = 137	8	9	
ID = 138	8	A	
ID = 139	8	B	
ID = 140	8	C	
ID = 141	8	D	
ID = 142	8	E	
ID = 143	8	F	

Camera ID	SW2	SW1	Remarks
ID = 144	9	0	
ID = 145	9	1	
ID = 146	9	2	
ID = 147	9	3	
ID = 148	9	4	
ID = 149	9	5	
ID = 150	9	6	
ID = 151	9	7	
ID = 152	9	8	
ID = 153	9	9	
ID = 154	9	A	
ID = 155	9	B	
ID = 156	9	C	
ID = 157	9	D	
ID = 158	9	E	
ID = 159	9	F	
ID = 160	A	0	Not applicable
ID = 161	A	1	
ID = 162	A	2	
ID = 163	A	3	
ID = 164	A	4	
ID = 165	A	5	
ID = 166	A	6	
ID = 167	A	7	
ID = 168	A	8	
ID = 169	A	9	
ID = 170	A	A	
ID = 171	A	B	
ID = 172	A	C	
ID = 173	A	D	
ID = 174	A	E	
ID = 175	A	F	Not applicable
ID = 176	B	0	
ID = 177	B	1	
ID = 178	B	2	
ID = 179	B	3	
ID = 180	B	4	
ID = 181	B	5	
ID = 182	B	6	
ID = 183	B	7	
ID = 184	B	8	
ID = 185	B	9	
ID = 186	B	A	
ID = 187	B	B	
ID = 188	B	C	
ID = 189	B	D	
ID = 190	B	E	
ID = 191	B	F	

Camera ID	SW2	SW1	Remarks
ID = 192	C	0	
ID = 193	C	1	
ID = 194	C	2	
ID = 195	C	3	
ID = 196	C	4	
ID = 197	C	5	
ID = 198	C	6	
ID = 199	C	7	
ID = 200	C	8	
ID = 201	C	9	
ID = 202	C	A	
ID = 203	C	B	
ID = 204	C	C	
ID = 205	C	D	
ID = 206	C	E	
ID = 207	C	F	
ID = 208	D	0	
ID = 209	D	1	
ID = 210	D	2	
ID = 211	D	3	
ID = 212	D	4	
ID = 213	D	5	
ID = 214	D	6	
ID = 215	D	7	
ID = 216	D	8	
ID = 217	D	9	
ID = 218	D	A	
ID = 219	D	B	
ID = 220	D	C	
ID = 221	D	D	
ID = 222	D	E	
ID = 223	D	F	
ID = 224	E	0	
ID = 225	E	1	
ID = 226	E	2	
ID = 227	E	3	
ID = 228	E	4	
ID = 229	E	5	
ID = 230	E	6	
ID = 231	E	7	
ID = 232	E	8	
ID = 233	E	9	
ID = 234	E	A	
ID = 235	E	B	
ID = 236	E	C	
ID = 237	E	D	
ID = 238	E	E	
ID = 239	E	F	

Camera ID	SW2	SW1	Remarks
ID = 240	F	0	
ID = 241	F	1	
ID = 242	F	2	
ID = 243	F	3	
ID = 244	F	4	
ID = 245	F	5	
ID = 246	F	6	
ID = 247	F	7	
ID = 248	F	8	
ID = 249	F	9	
ID = 250	F	A	
ID = 251	F	B	
ID = 252	F	C	
ID = 253	F	D	
ID = 254	F	E	
ID = 255	F	F	

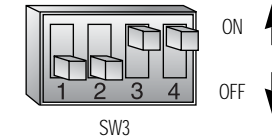
Note

- Factory Default : Camera ID = 1
The rotary switch is on the controller board (controllable from the initial PAN position)
- The three kinds of camera ID below cannot be used.

Camera ID	R-SW2	R-SW1
ID = 0	0	0
ID = 160	A	0
ID = 175	A	F

● Controller Model Setting (Mainframe front panel)

- Set the controller model by switching Dip Switch No. 1



	Functions	ON	OFF
SW3-#1	Controller Setting	SVR-430/900 /1620/1630	SCC-16, SCC-3000

Note) Factory Default : OFF
Simultaneous control by a controller and a DVR is not allowed.

● Factory Default (Mainframe front panel)

	Functions	ON	OFF
SW3-#2	Factory Default	OFF for both switches	

Note) Factory Default : OFF

● RS-485 Terminal Setting (Mainframe front panel)

- Set the terminal by switching Dip Switch No. 3 and 4 On/Off.

Camera Connection Position	SW3-#3	SW3-#4
Longest Route Terminal	ON	ON
On the route	OFF	OFF

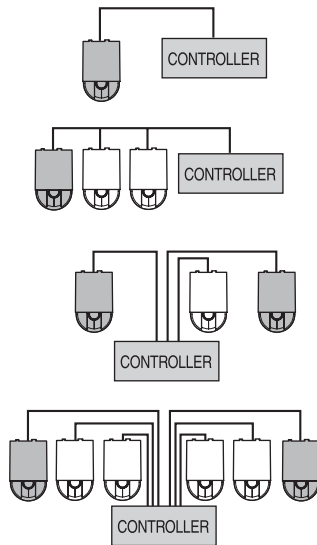
Note) Factory Default: On for both switches

Getting started

It is necessary to connect the terminating resistance to the two units that are furthermost from the relevant camera/controller on the RS-485 Interface in order to prevent signal attenuation.

Since cameras have embedded terminating resistance, select whether to activate or deactivate their terminating resistance by using the DIP Switch. Refer to the connection layout below for deciding which unit is to be connected to the terminating resistance. Set the terminating resistance to the gray colored unit.

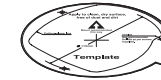
The maximum distance for setting the terminating resistance is 1.2Km.



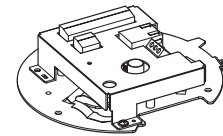
Accessories



User's manual



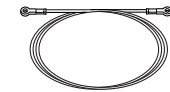
Template



Installation Bracket



3 fixing screws
1 cable lock screw



Safety wire

※ Options

The components below are options

Component	Model	Description
Camera Controller	SCC-16, SCC-3000	Pan/Tilt/Zoom/Focus Control, OSD Action, a variety of function settings
Indoor Housing	STH-160PI	Housing for Indoor Installation
Indoor Embedded Housing	STH-128PE	Ceiling Embedded Indoor Housing
Outdoor Housing	STH-160PO	Housing (with built-in fan and heater) for outdoor installation
Wall mounted	STB-270PW	Wall mounted type
Ceiling mounted	STB-496PP	Ceiling mounted type
AC Adapter	STA-110 STA-230	Input : AC 110V Input : AC 230V

How to Install

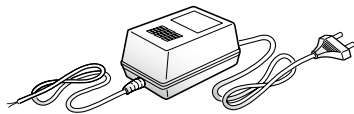
Cable

Preparation

For SPD-2200 installation, the cables listed below have to be prepared.

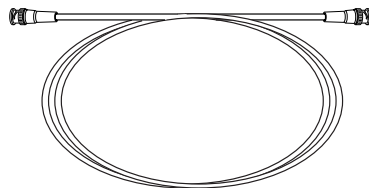
● Power adapter cable

The cable to be connected to the power in the SPD-2200 terminal includes the power adapter, for which the rated voltage is AC24V, 2.5A as described below. (Use UL listed class 2 power source.)



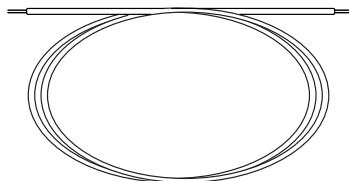
● Video Cable

The cable connecting the SPD-2200 video out terminal and the monitor is the BNC cable as described below.



● RS-485 Communication Cable

The cable connecting the controller for the SPD-2200's RS-485 communication is described below.



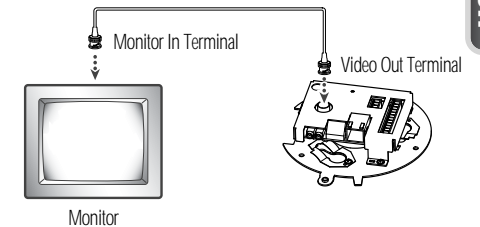
Note

• Adapter, Video and RS-485 communication cables not supplied.

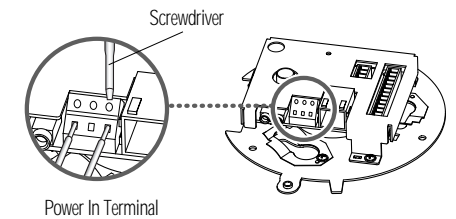
Connection

1. First, connect one end of the BNC cable to the video out terminal.

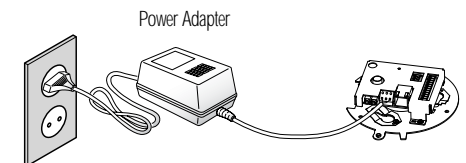
2. Connect the other end of the BNC cable to the video in terminal of the monitor.



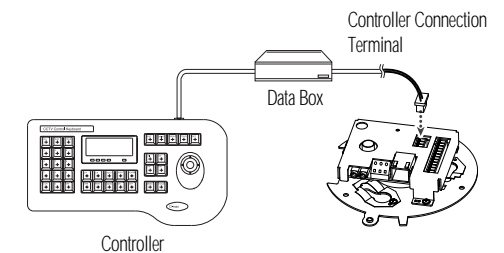
3. Connect one end of the power adapter, comprising two lines, to the Power In Terminal of the bracket using the flathead screwdriver as shown in the figure below.



4. Connect the power adapter plug to the power outlet.



5. Connect the connection terminal of the SPD-2200 controller to the external controller.



How to Install

Accessories (option)

● Cautions

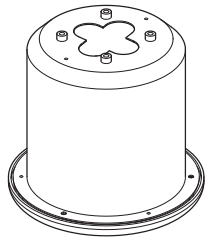
- Confirm that the installation location is strong enough to bear more than 4 times the total weight of the assembly and the speed dome camera (SPD-2200).
- Only install the camera where there is more than 500mm of space above the ceiling board.
- In installing the bracket, use the installation guide template, screws and cables supplied with the camera.
- There is a risk that the camera may be dropped during installation. Prevent any possibility of the camera falling by using the security cable during installation. Unauthorized persons should be prevented from gaining access to the installation site.

● Options related to installation

The options below, when purchased, will facilitate the installation in a variety of different sites.

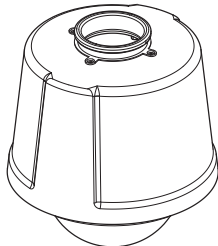
1) Indoor embedded Housing (STH-128PE)

This housing is used when a speed dome camera is embedded in a double ceiling.



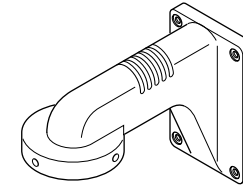
2) Indoor and Outdoor Housing (STH-160PI, STH-160PO)

This housing is used when a speed dome camera is mounted on a wall or ceiling inside or outside.



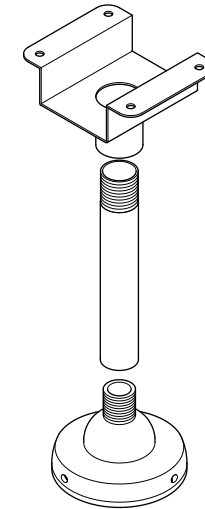
4) Wall Mounting (STB-270PW)

Assembly used when an indoor and outdoor housing for a speed dome camera is to be mounted on a wall.



5) Ceiling Mounting (STB-496PP)

Assembly used when an indoor and outdoor housing for a speed dome camera is to be mounted on a concrete ceiling.



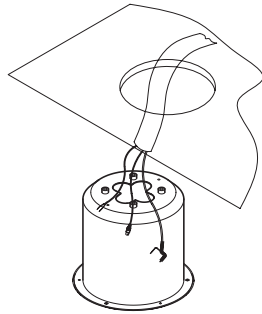
⚠ Cautions

- When installing the speed dome camera in an indoor/outdoor housing, remove the dome cover (front glass) to obtain a clearer image.

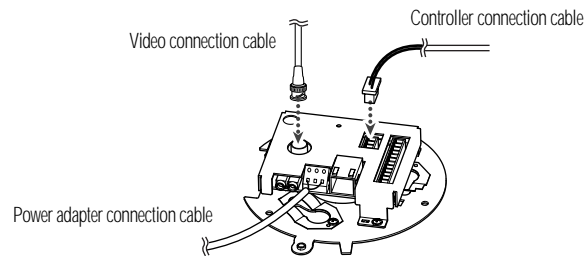
How to Install

How to Install the Camera (using the Embedded Housing)

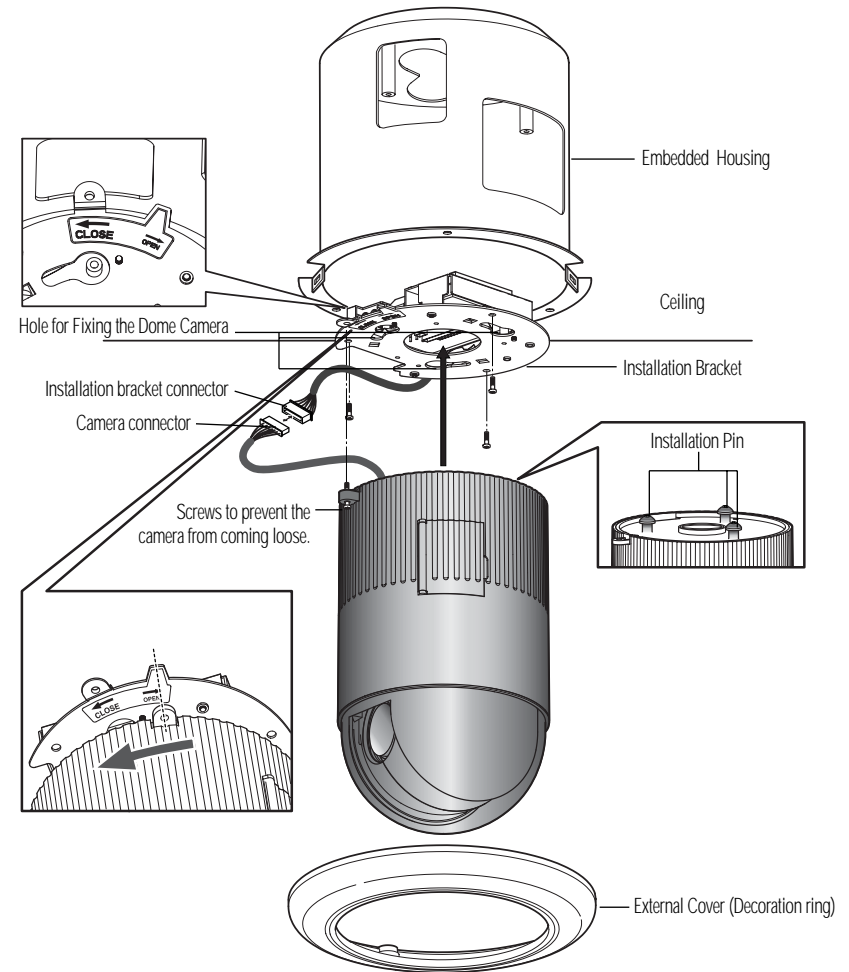
- ① Make a hole of 155mm in diameter in the ceiling to install the camera. Pull the cable down through it.



- ② Connect the video cable, controller cable and power adapter cable to the mounting bracket. (See Page 19)



- ③ Fix the mounting bracket to the Embedded housing using three screws.
- ④ Fasten the eye bolt on the housing and fix the housing to the ceiling, using the cable to prevent it from falling.
- ⑤ Fix the housing to the ceiling using three screws.
- ⑥ Connect the Installation bracket to the connector of the speed dome camera.
- ⑦ Insert the pin at the bottom of the camera into the bracket fixing hole and turn it anticlockwise to secure.
- ⑧ **Fasten the lock screw.**
- ⑨ Place the external cover over the housing and then rotate and fix it.



Cautions

- Check the power adapter input power before connecting the power supply.
- Install the camera using the installation template and cable and fixing screws that are supplied separately for installations without a housing.
- Note that the locking screws should be fastened. If one of the locking screws is not properly fastened, the camera may fall due to vibration or impact once it is installed.

Camera setting

OSD Menu Configuration

This model enables dome camera setting, using the OSD (On Screen Display) menu displayed on the video output, by exclusive control.

The joystick in the OSD menu modes is controlled as described below.

This function is also enabled by sending the exclusive control code from a PC to a dome camera.

Menu	Functions
TILT Up	Up on the OSD
TILT Down	Down on the OSD
PAN Left	Left on the OSD
PAN Right	Right on the OSD

● Menu Configuration

P1	P2	P3	P4	Defaults	
Camera Setting	Focus	Focus Mode	Auto/Manual/One Shot AF	One Shot AF	
		Digital Zoom		4X	
	White Balance	AWB Mode	AUTO/AWC/MANUAL /OUTDOOR/INDOOR		Auto
			Manual : WB RED		000
			WB BLUE		000
	Exposure	AE Mode	AUTO/AGC OFF/ALL/AGC/IRIS/SHUTTER - Shutter SPD - Iris Adjust - AGC Adust		Auto 1/60 170 -
			D&N Mode	Auto/Day/Night	Auto
			Slow Shutter	0(OFF), 1-9 (2Fields~128Fields)	OFF
			Back Light	Mode	ON/OFF
	Sync	Area	Center/Upper/Lower/Left/Right		Center
			Weight	Low/High	Low
			Internal		Internal
	Brightness	Line Lock	Line Lock Phase		225
			Flickerless	ON/OFF	OFF
	Others	Sharpness			10
			Mirror	ON/OFF	OFF
			Nega/Posi	Negative/Positive	Positive

Sequence Setting	Set Preset	Setting/Execute/Clear/Status		
	Pan Swing	Setting/Execute/Clear		
	Tilt Swing	Setting/Execute/Clear		
	Swing Focus Mode	Auto/Manual		MANUAL
	Group SEQ	Group1~Group6	Setting/Execute/Clear	
	Tour SEQ	Setting/Execute/Clear		
	PTZ Trace	Replay/Memorize		
Power On Resume	ON/OFF		OFF	
P/T Setting	Pan Limit	Position/ON/OFF		
	Tilt Limit	Position/ON/OFF		
	Area Setting	Area 1~ Area 8	Name/Position/Clear/On/Off	
	Area Masking	Mask1~Mask8	Position ON/OFF	
	Home Position	Setting ON/OFF		
	Smart P/T	ON/OFF		ON
	Auto Filp	ON/OFF		ON
OSD Setting	Camera ID	ON/OFF		ON
	Camera Name	Edit, ON/OFF		
	Preset Number	ON/OFF		ON
	Preset Name	Edit, ON/OFF		
	Sequence Status	ON/OFF		ON
	Area Name	ON/OFF		OFF
Alarm Setting	Alarm Enable	ON/OFF		OFF
	Alarm Input	Alarm1~Alarm4	NC/NO/OFF	
			1~4(Priority)	
			Preset/Group/Tour	
	Alarm Out	Out1 SET~Out2 SET	1~4	
			MD	
		Out1 Time~Out2 Time	1~60(Sec)	
			1~60(Min)	
	Motion Detection	Out1 Off~Out2 Off	1~60(Hour)	
			MD Execute	
Detect Area			Whole/Upper/Lower/Center	Whole
Initialize	Sensitivity	Preset No.		12
		Power On Reset	Cancel / Execute	
		Factory Default Set	Cancel / Execute	
		Camera Default Set	Cancel / Execute	
Status	Auto Refresh	OFF, 1-7 Days		7 Days



Note

• Preset setting is available both from the controller and the OSD menu.

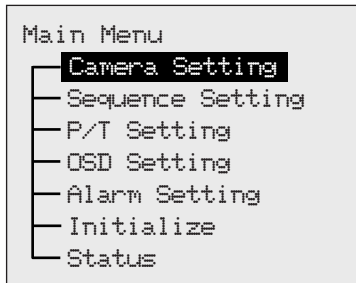
● Dome Camera Users' Menu Settings

How to Use the OSD Menu

Check whether the camera is set to manual mode and press the OSD Menu Key, or 1 and the MENU Key at the same time.

The screen will then display the contents as shown below.

Main Menu



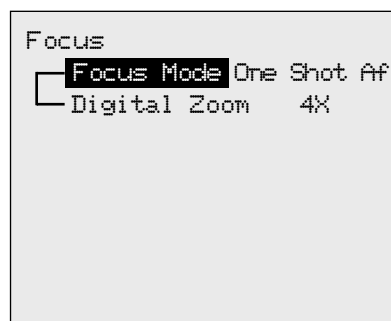
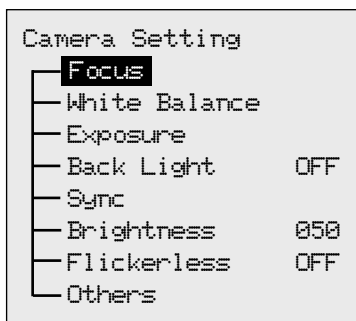
Move the cursor downwards to the submenu to set. Press the Enter key on the selected submenu. You can then change and set the submenu. Press the ESC KEY, and the OSD menu closes.

For more details, please see the Controller User Manual.

1) Camera Setting

Select Camera Setting in the Main Menu Window, and the Camera Setting Menu appears.

Camera Setting Menu



FOCUS

The Focus menu sets the focus mode to either Auto or Manual Mode.

① Focus Mode

- Auto : Automatically focuses by continuous monitoring in Auto Mode. Since the focus is automatically adjusted when the Zoom key is controlled, Focus key input is not applied.
- Manual : The Manual mode enables the user to manually adjust the focus.
- One Shot AF : One Shot AF activates auto-focusing when the camera stops moving. When the camera stops, it works as in Manual Mode.

② Digital Zoom

Changes the digital Zoom factors.

※ We recommend setting the digital zoom factor before presetting.

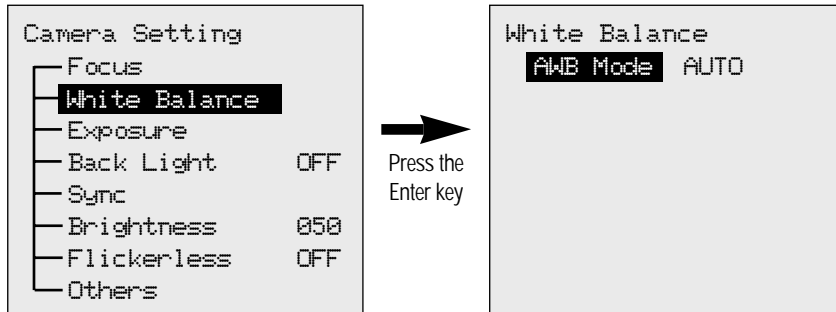
Cautions

Digital Zoom

- The higher the digital zoom factor, the lower the image quality.

Auto-focus

- The Auto-Focus may not work properly under the conditions below.
 - If the illumination in a monitoring zone is low
 - If the Slow-Shutter is activated
 - If the amplification degree is increased
 - If the illumination in a monitoring zone is excessively high
 - If both remote objects and close objects are included in a monitoring zone
 - If there is no contrast (black and white), such as the sky or a wall, within the picture
 - If there is a thin horizontal line within an image



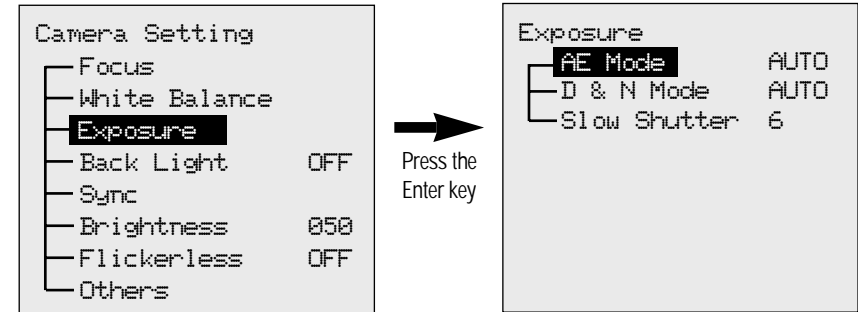
White Balance

The White Balance menu activates the white balance function, which adjusts the correct white color for lighting with any color temperature.

Select from Auto/AWC/Indoor/Outdoor/Manual

① AWB Mode

- Auto : Automatically adjusts the colors according to changes in the light source.
- AWC : Sets the lighting condition for an object and forcibly adjusts its color to white. Images can only be captured under this preset condition
- Manual : Sets the color temperature with the appropriate ratio of RED to BLUE.
 - WB Manual
Users can adjust the colors by adding or reducing the percentage of Red or Blue.
 - WB Red
The Red Gain can be changed.
 - WB Blue
The Blue Gain can be changed.
- Outdoor : Sets the color temperature to 5,600K.
- Indoor : Sets the color temperature to 3,200K.



Exposure

Controls the camera exposure

① AE Mode

- Auto: Automatically adjusts the video signal brightness according to the light intensity.
- AGC OFF : Sets AGC Gain as OFF.
- All: Manually sets the electronic Shutter, Iris and AGC.
- AGC: Manually sets AGC.
 - AGC Adjust : The AGC (Automatic Gain Control) menu sets whether or not to control the gain automatically when an object is viewed in poor lighting, such that the image brightness is below a certain level. Select the AGC Adjust menu, and you can increase or decrease the level value.
- IRIS: Manually sets the Iris.
 - Iris Adjust : Sets the video signal brightness on the screen by adjusting the Iris level.
- Shutter: Manually sets the electronic Shutter rate.
 - Shutter SPD : The Shutter SPD supports 8 shutter speed rates from 1/60 sec. to 1/10,000 sec.

[Table-1 Step-by-Step Setting]

High-Speed Shutter	1	2	3	4	5	6	7	8
(Sec)	1/60	1/125	1/250	1/500	1/1,000	1/2,000	1/4,000	1/10,000

② D&N Mode (Day & Night Mode)

Automatically detects the degree of darkness at night, or in poor lighting conditions, and so keeps the screen bright and clear.

- Auto : When the Auto Mode is selected, it automatically switches to Color mode to maintain optimum color during the day, and to Black and White mode at night for clearer pictures in poor lighting. However, the Slow Shutter doesn't work in Auto Mode.
- Day : Maintains color images. The Slow Shutter function is activated in this mode.
- Night : Maintains black and white images. The Slow Shutter function is deactivated in this mode.

③ Slow Shutter

The Slow Shutter is activated only in Day Mode and keeps the screen bright and clear in low lighting conditions.

Increase the level in the menu, and the maximum level can be adjusted. (X2-X128) The larger the scale, the brighter the screen. However, the after-image of moving objects is also increased.

[Table-2 Step-by-Step Setting]

Low-Speed Shutter	0	1	2	3	4	5	6	7	8	9
(Fields)	Shutter OFF	X2	X4	X8	X12	X16	X24	X32	X64	X128

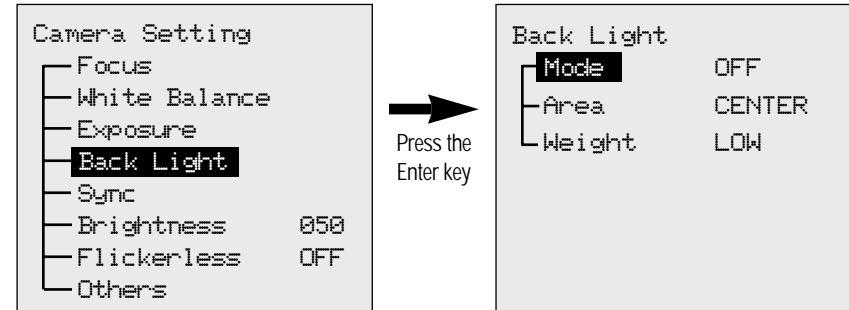
Note

The relationship between AE Mode and D&N Mode is described below.

D&N \ AE	Shutter	Iris	AGC
Day(OFF)	Adjustable	Adjustable	Adjustable
Auto	Auto Mode	Keep the Day status value (No change allowed)	Keep the Day status value (No change allowed)
Night(ON)	Auto Mode	Keep the Day status value (No change allowed)	Keep the Day status value (No change allowed)

The relationship between AE Mode and D&N Mode is described below.

D&N \ AE	AUTO	Manual
Day(OFF)	Slow Shutter Mode available	Slow Shutter Mode not available
Auto	Automatic D&N switching available	Automatic D&N switching not available



Back Light Ctrl

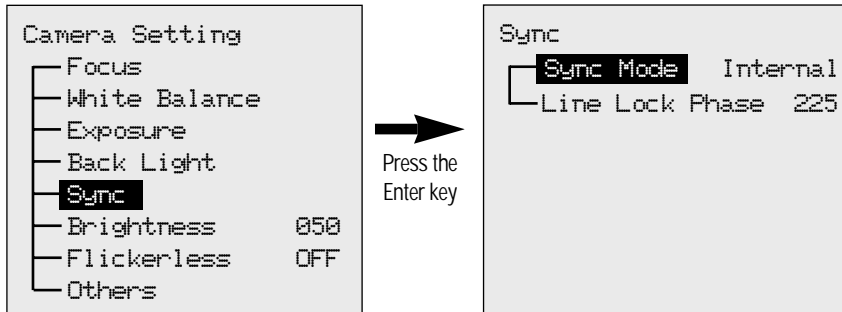
- BLC Mode
Use when the difference between light levels at the center of the screen and the edge of the screen is great – for example when there is backlight.
ON activates the Backlight function and OFF deactivates it. The default is OFF.
- Area Mode
Set the area for backlight compensation. The default is Center.
 - Center : compensates for backlight in the center area of the screen.
 - Upper : compensates for backlight in the upper area of the screen.
 - Lower : compensates for backlight in the lower area of the screen.
 - Left : compensates for backlight in the left area of the screen.
 - Right : compensates for backlight in the right area of the screen.



- Weight
Set the level of backlight compensation. The default is High.
 - Low : slightly improves the backlight compensation.
 - High : substantially improves the backlight compensation.

Note

- The Area and Weight set by BLC Mode are only effective only when a camera is not moving. When the camera is rotating, as with Preset/Group/Tour/Trace, the camera works with the Area on Center and the Weight on High.



Sync

Selects Internal synchronization/Line Lock. The default is Internal synchronization.

- Internal : Internal sync method
- Line Lock : The internal sync method is the power-frequency synchronization method. The power phases of several units can be adjusted.
- Line Lock Phase : With the Line Lock, the phase can be adjusted from 0° to 360°. The default is 225°.

※ For Internal, the Line Lock Phase cannot be adjusted.

Brightness

Sets video signal brightness on the screen.

Flickerless

Flickerless Mode

Sets the Flickerless Mode ON or OFF. Fluorescent tube flicker is eliminated.



Note

- D/N Mode is not activated when the Flickerless mode is ON.

Others

① Sharpness

Highlights image contour by increasing the Aperture Gain of the camera.

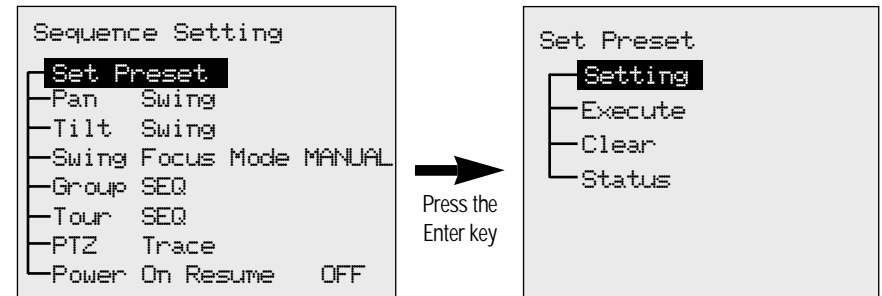
② Mirror

Reverses the video output signal from left to right and vice versa

③ Nega/Posi

The video output signal is changed to positive or negative.

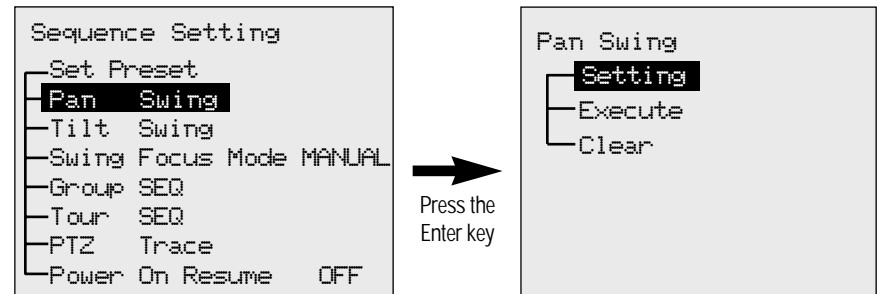
2) Sequence Setting



① Set Preset

When users set their own chosen PAN/TILT positions or ZOOM and FOCUS, they can call frequently and monitor the status. Up to 128 positions can be preset. (1-128)

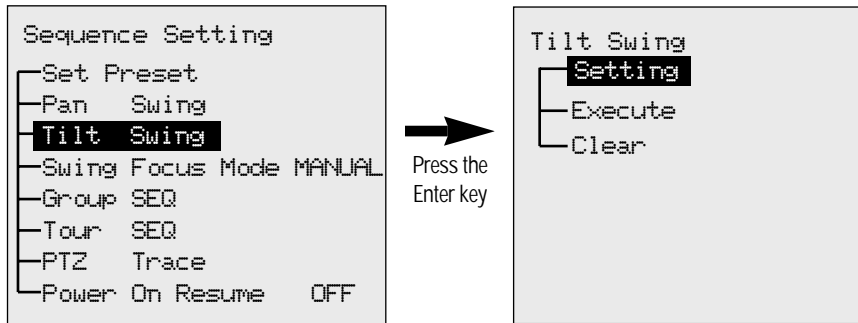
- Setting : Select the preset No. to set, adjust the PAN/TILT/ZOOM and press Enter.
- Execute : Select the preset No. to run, and the relevant camera starts running.
- Clear : Select the preset No. to clear, and the relevant setting is deleted.
- Status : Displays the current preset No.



② Pan Swing

Activates and sets Swing monitoring in the Pan direction and deletes data

- Setting : Selects the preset swing position with the joystick and sets the position with the Enter key.
SPD is the speed the camera moves.(001-240°/sec)
DWL is the dwell time for the camera.(1-128sec)
Completes the setting by pressing the Enter key on the selected position.
- Execute : Starts swing monitoring.
Stops it with the Stop key.
- Clear : Deletes the swing data



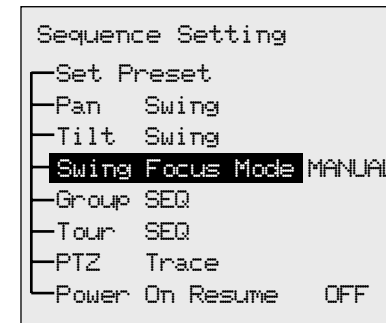
③ Tilt Swing

Activates and sets Swing monitoring in the Tilt direction and deletes data

- Setting
 - SSelects the preset swing position with the joystick and sets the position with the Enter key.
 - SPD is the speed with which the camera moves.(001-240°/sec)
 - DWL is the dwell time for the camera.(1-128sec)
 - Completes the setting by pressing the Enter key on the selected position.
- Execute
 - Starts swing monitoring.
 - Stops it with the Stop key.
- Clear
 - Deletes the swing data.

Notes

- For 0° Tilt in Wide mode, about a third of the object does not appear on the screen.
- Some objects may appear whiter than the actual colors as a result of the AGC effect.

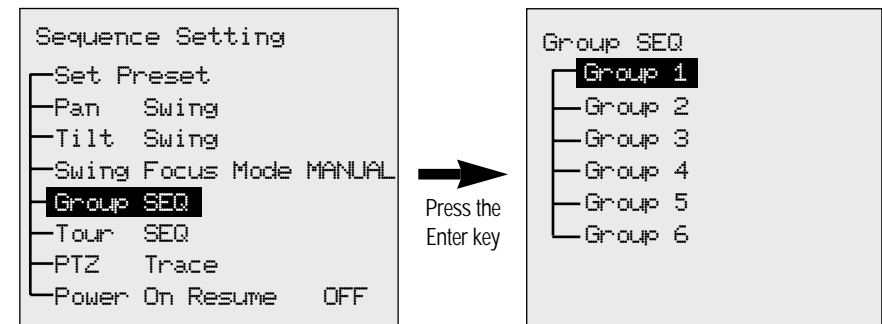


④ Swing Focus Mode

This mode is for activating the Auto Focus during continuous operation of Pan or Tilt Swing.

Note) Excessively fast Pan or Tilt Swing may disrupt the Auto Focus.

- AUTO/MANUAL
 - AUTO activates the Auto Focus.

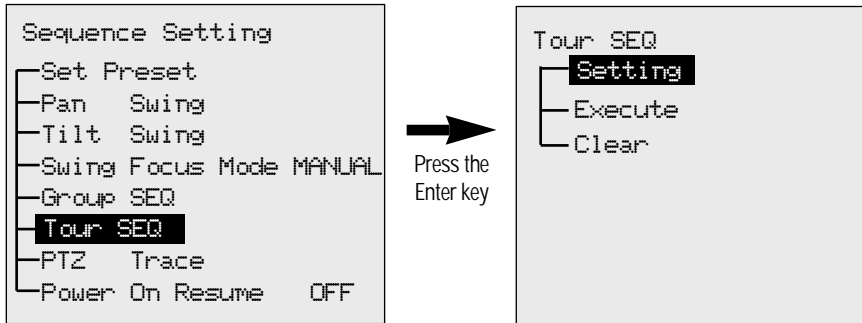


⑤ Group SEQ

Starts and sets Sequence monitoring and deletes the data. Registers up to 6 groups.

- Setting
 - Select the Preset Position to monitor using the joystick, and set the position using the Enter Key.
 - SPD is the speed with which the camera moves. (001-240°/sec)
 - DWL is the dwell time for the camera. (1-128sec)
 - Completes the setting by pressing the Enter key on the selected position.
- Execute
 - Starts Group monitoring.
 - Stops it with the Stop key.
- Clear
 - Deletes the group data.

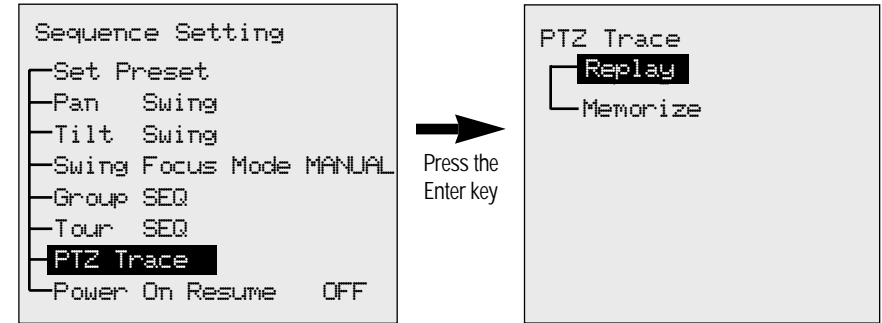
Camera setting



⑥ Tour

Starts and sets Group monitoring and deletes the data.

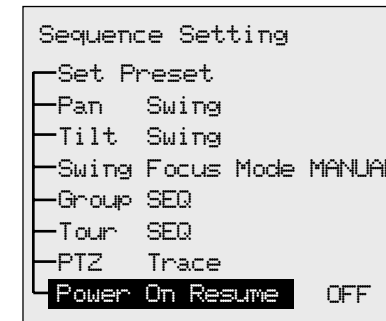
- Setting
Selects the procedure for the registered Group Sequence with the joystick and sets it with the Enter key.
If an unregistered number is designated, the number cannot be entered.
Completes the setting by pressing the Enter key on the selected position.
SPD is the speed the camera moves. (001-240°/sec)
DWL is the dwell time for the camera.(1-128 sec)
- Execute
Starts Group monitoring.
- Clear
Deletes the Group monitoring data.



⑦ PTZ Trace

Memorizes and plays the manual control routes (Pan, Tilt, Zoom and Focus)

- Replay
Repeatedly plays the manual control routes
Stops it with the Stop key.
※ If the control range is restricted to ① Pan Limit and ② Tilt Limit, the operation is not allowed beyond the controlled range. Exercise caution.
- Memorize
While the manual setting is memorized in the internal memory for at least 120 seconds after this function is activated, the memory time varies depending on the PTZ operation.
OVER means that the Memorize function is ended.
※ When the control range is restricted to ① Pan Limit and ② Tilt Limit, it is memorized.

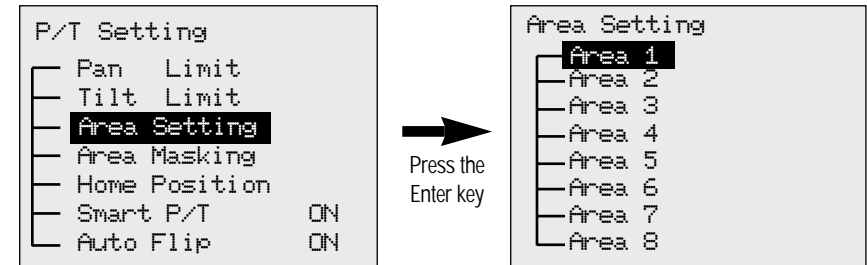
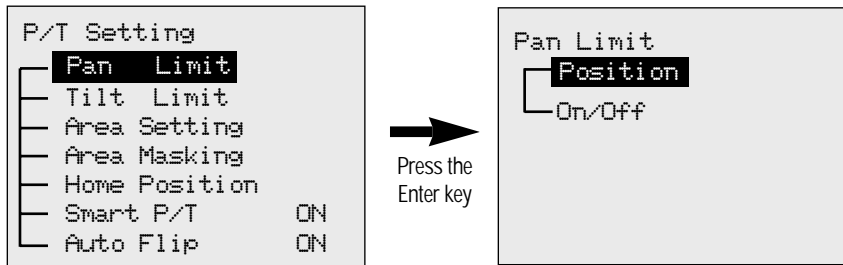


⑧ Power On Resume

When the power supply is resumed after suspension due to power failure, the Sequence operation set before the power failure is maintained.

3) P/T Setting

P/T Setting Menu



① Pan Limit

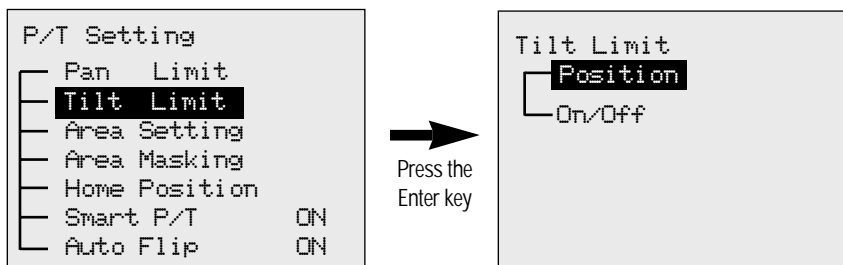
Limits the range of movement in the PAN direction

- Position

Sets the range of movement. Determines the position measured from the left using the joystick and the Enter key. The end position can be changed to the initial operation when power is resumed, depending on the setting position. This represents normal operation.

- ON/OFF

Limit starts working when ON is selected.



② Tilt Limit

Limits the range of movement in the Tilt direction.

- Position

Sets the range of movement. Determines the position measured from above using the joystick and the Enter key. The end position can be changed to the initial operation when power is resumed depending on the setting position. It is the normal operation.

- ON/OFF

Limit starts working when ON is selected.

③ Area setting

Indicates the zone. Sets up to 8 areas.

- Area Name

Sets the area names. Up to 12 characters (English, Chinese, Numbers, etc.) can be entered using the joystick and the Enter key. After input, put the area marks to SET using the joystick and press the Enter key. The setting is then completed.

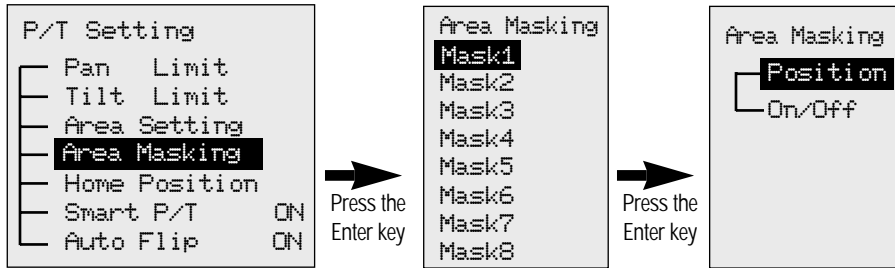
- Position

Sets the range of an area. Determines the position measured from the left using the joystick and the Enter key. When the range of an area is overlapped, the area with the lower number indicates the overlapped area.

- ON/OFF

Sets the area display On or Off. This setting is valid from when a camera moves from the current area to another area.

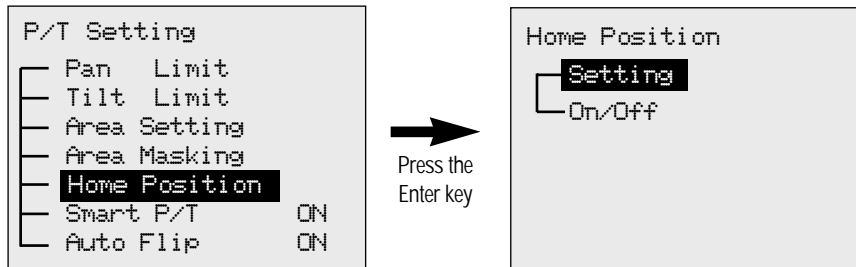
Set the OSD Setting ON. When the OSD Setting is OFF, this function doesn't work. The default is OFF.



④ Area Masking

The area to be excluded from the monitoring operation is displayed in white. Up to 8 areas can be set to be in white.

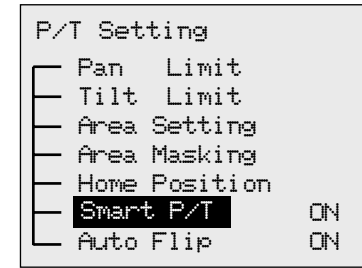
- Position
Select the scope of the display using the joystick and Enter Key.
- ON/OFF
Sets the area display function On or Off.



⑤ Home position

If any motion is detected within a certain period, the camera moves to the preset position.

- Setting
Sets the preset position number to which a camera moves, and when it moves.
Preset Position : 01 ~ 128
Time: 00-60 Min. (00 means 30 seconds)
- ON/OFF
Sets the activation of this function.



⑥ Smart P/T

Changes the speed of PAN and TILT according to the zoom factor. In Tele, Pan/Tilt becomes slow. In Wide, Pan/Tilt becomes fast. One rotation in Tele and Wide takes about 15 seconds and 3 seconds respectively.



⑦ Auto Flip

When Tilt is set to the 90° Limit using the joystick, and the setting is kept for a certain period, the Auto Flip function makes PAN automatically rotate 180° and enables the Tilt area to be seen on the opposite side of the screen.

With this function, the Tilt range is extended to 180°. For monitoring a moving object under a camera, activate Auto Flip using the controller joystick, and you can monitor the object without the screen turning upside down or reversing left to right.

Camera setting

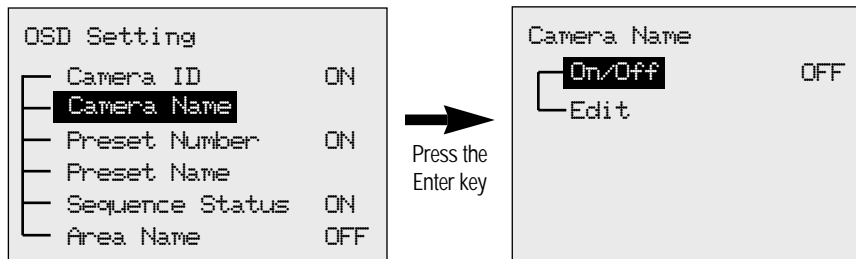
4) OSD Setting

OSD Setting Menu

OSD Setting	
Camera ID	ON
Camera Name	
Preset Number	ON
Preset Name	
Sequence Status	ON
Area Name	OFF

① Camera ID

Sets the camera ID display.



0123456789
ABCDEFGHIJKLMNPOQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
! ? > < << >> [] x * + - = _ / o □
~ ↑ ↓ → ← ' " , . : ; ¥ \$ © £ % # &
Chinese1 Back Space CLR SET

For editing, move the cursor to Edit and press the Enter key.

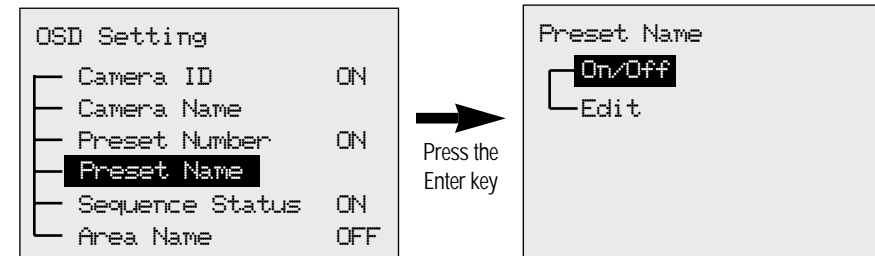
② Camera Name

- Edit
Sets the camera names using up to 12 characters in English (or Chinese), numbers and special characters.
- On/Off
Set whether to display a camera name.

OSD Setting	
Camera ID	ON
Camera Name	
Preset Number	ON
Preset Name	
Sequence Status	ON
Area Name	OFF

③ Preset Number

Sets the preset numbers.

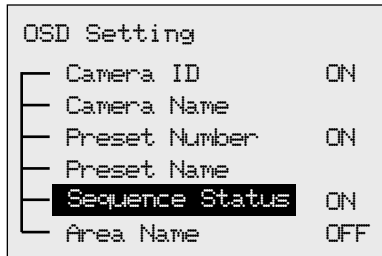


0123456789
ABCDEFGHIJKLMNPOQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
! ? > < << >> [] x * + - = _ / o □
~ ↑ ↓ → ← ' " , . : ; ¥ \$ © £ % # &
Chinese1 Back Space CLR SET

For editing, move the cursor to Edit and press the Enter key.

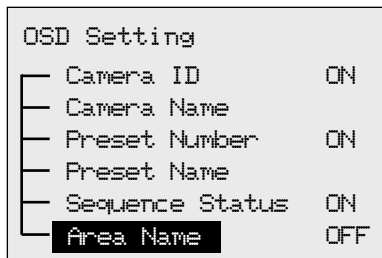
④ Preset Name

- Edit
Sets the preset names using up to 12 characters in English (or Chinese), numbers and special characters.
- On/Off
Set whether to display a preset name.



⑤ Sequence Status

Sets the sequence groups



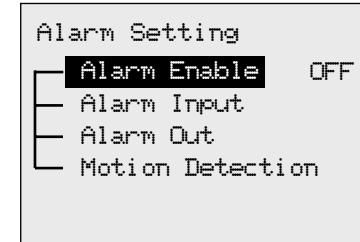
⑥ Area Name

Sets the area names

* With the area name off, the area can't be displayed.

5) Alarm Setting

Alarm Setting Menu

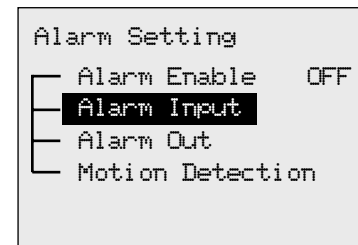


① Alarm Enable

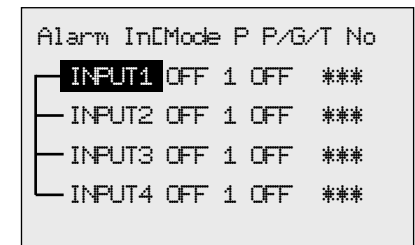
To determine whether to activate the alarm, set to Alarm Enable.

• ON/OFF

The alarm is activated with ON.



Press the
Enter key



② Alarm Input

Sets the Alarm Input Mode, Priority and Alarm Activation Method

• NC/NO/OFF

Selects NC, NO or OFF depending on the alarm sensor types.

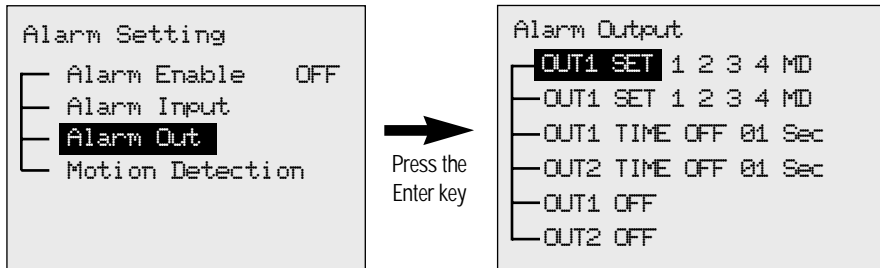
• 1-4 (Priority)

Sets the priority of four alarm inputs and reacts to the alarm input in accordance with the priority.

• Preset/Group/Tour Number

Sets the Preset, Group or Tour for reaction to the alarm input.

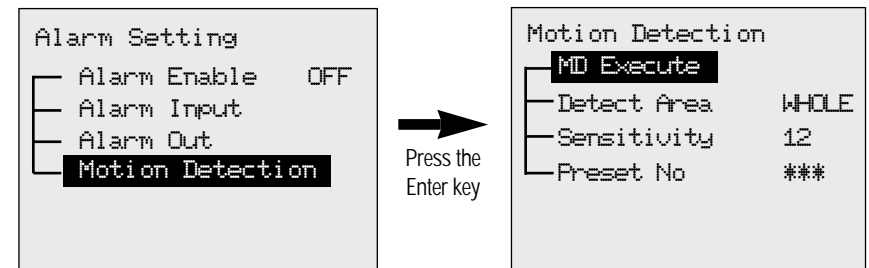
In case of alarm, moves to the Preset/Group/Tour/Off corresponding to each alarm. If there are several alarms in sequence, stays in the Preset/Group/ Tour position during the Dwell Time according to the input sequence. The pattern- linked alarm then carries out the relevant pattern motion in sequence.



③ Alarm Out

Matches each alarm input to one of two Alarm Outs

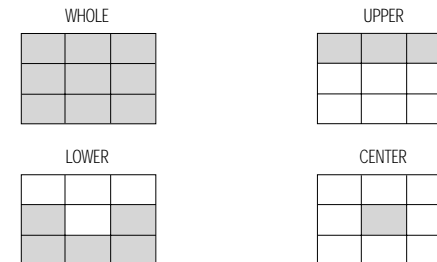
- OUT1 SET/OUT2 SET
Matches two alarm outputs to one of four alarm inputs and MD.
- OUT1 TIME/OUT2 TIME
Sets the ON/OFF and operating time in units of seconds, minutes or hours. (1-59 sec., 1-59 min., 1-59 hours)
- OUT1 OFF/OUT2 OFF
When each alarm output is activated, select this function to forcibly release the alarm outputs. The alarm output is then deactivated.



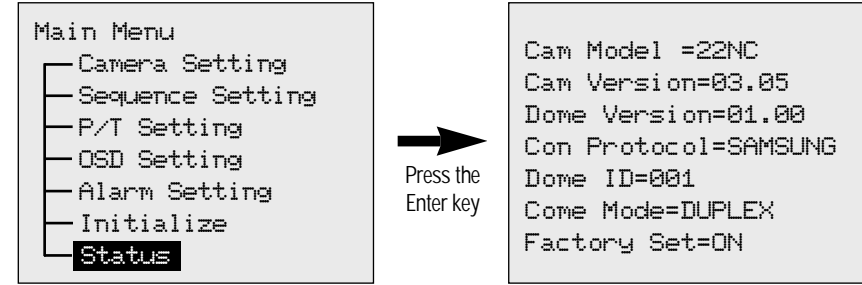
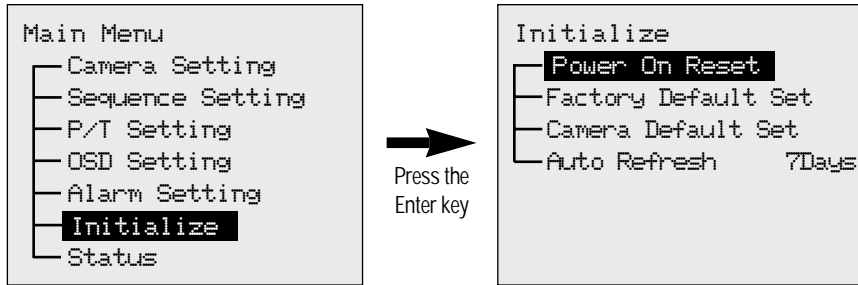
④ Motion Detection

Motion Detection sets the motion detection function, areas to detect motion, and sensitivity of motion detection. With Motion Detection on, the movements of an intruder can be detected. When motion is detected, an alarm signal is sent to the Alarm Out.

- MD Execute
With Motion Detection On, moves to the preset position and then to On.
- Detect Area
Sets the area to detect.
 - Whole : Detects motion on the whole screen.
 - Upper : Detects motion on the upper side of the screen
 - Lower : Detects motion on the lower side of the screen
 - Center : Detects motion on the center of the screen



- Sensitivity
Sets the detection sensitivity. The higher the number, the smaller the motion the sensor reacts to.
- Preset No
Sets the preset number to which to move a camera when motion is detected.



6) Initialize Setting

① Power On Reset

- Initialize a camera to the status prior to power supply

② Factory Default Set

- Initialize to the factory default. Data such as preset is deleted. This function is used to initialize a variety of settings. However, the digital zoom factor is not changed.

③ Camera Default Set

- When a single camera module is replaced due to a defect only in that camera, Camera Default Set is used to set the replacement camera module to the setting of the previous camera.

④ Auto Refresh

- Optimize the built-in electrical circuit and the status of fixtures and devices in a camera at a pre-determined interval (operating intervals can be set).

This is used for keeping, maintaining and correcting the camera settings when a camera directly faces a specific light source, or the setting is not preserved because the camera has been rotating left, right, up and down in a specific area for a long time.

The default is 7 Days.

- OFF, 1-7Days

Auto Refresh won't run when OFF is selected. Select between 1-7 Days, and Auto Refresh will run at the selected intervals.

Auto Refresh takes less than about 10 seconds.

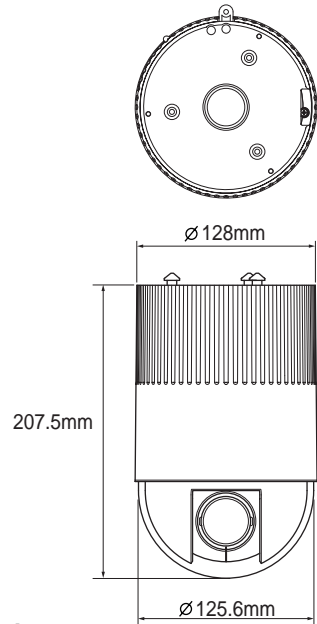
The message "Auto Refresh" disappears when the operation is completed.

7) Status

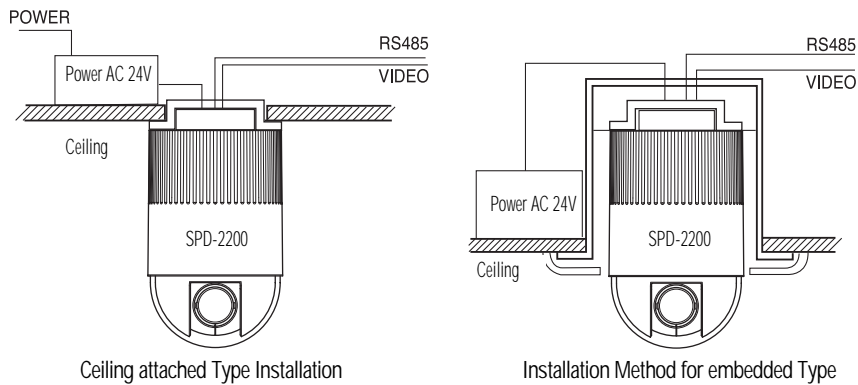
Displays the dome camera setting.

Cam Model =22NC	Mounted Camera Model
Cam Version=03.05	Mounted Camera S/W Version
Dome Version=01.00	Control Board S/W Version
Con Protocol=SAMSUNG	Setting Protocol
Dome ID=001	Dome Camera ID
Controller=Type1-9600	Communication Mode Setting Status

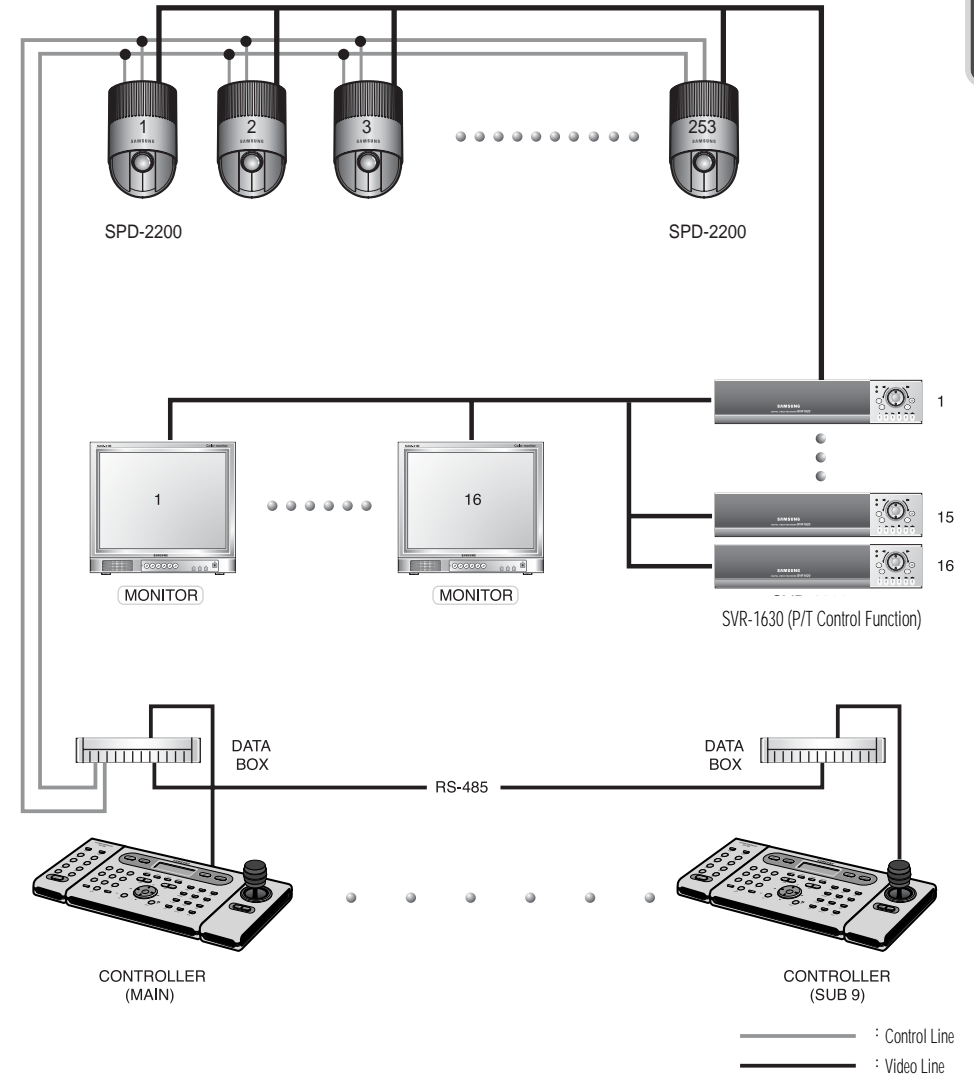
● Dimension



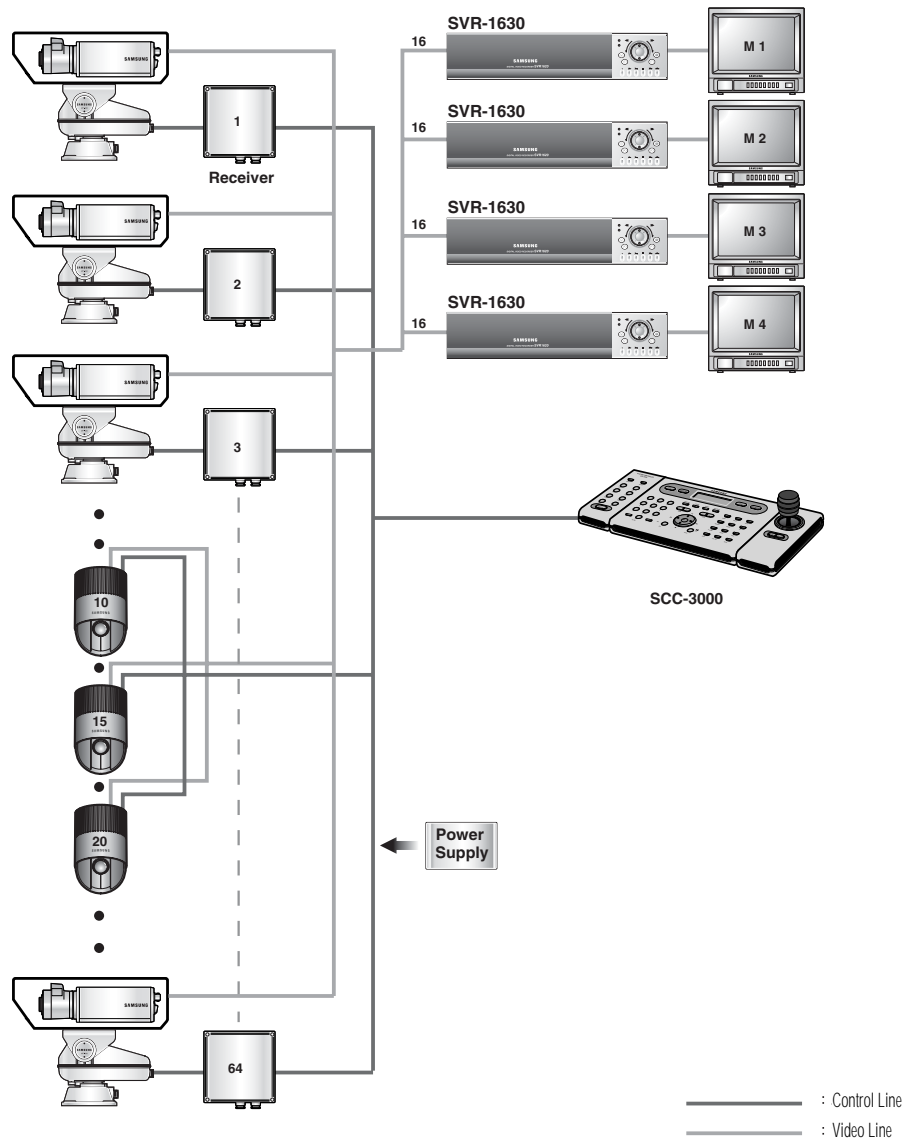
● Installation Method



※ Other Installation Methods : You can use the camera in a variety of circumstances with accessories for outdoor installation that you need to purchase separately. (See Page 17 and 20 for the accessories that you can purchase)



System configuration



Specifications

Item	NTSC	PAL
Image Sensor	1/4-inch Color Interline-Transfer CCD. 410,000pixel	
TV Type	NTSC Type	PAL Type
Total Pixels	811(V) × 508(H)	795(V) × 596(H)
Effective Pixels	768(V) × 494(H)	752(V) × 582(H)
Horizontal Scanning Frequency	15.734kHz	15.625kHz
Vertical Scanning Frequency	59.94kHz	50.00kHz
Synchronization	Internal/External (AC Line Lock)	
Video Output	1.0p-p/75 Ω	
S/N Ratio	More than 48dB (AGC OFF)	
Horizontal Resolution	480TV lines	460TV lines
Minimum Illumination	2.0Lux(Normal)/(@30IRE), 0.3Lux(Day & Night Mode)/(@30IRE) 0.03Lux(Slow-Shutter Mode)/(@30IRE)	
Electronic Shutter	Auto/Manual (1/60 ~ 1/10,000)	Auto/Manual (1/50 ~ 1/10,000)
Slow-Shutter	ON(x2-x128Fields) /OFF	
Backlight Compensation	ON/OFF	
White Balance	Auto/AWC/Manual/Outdoor/Indoor	
Flickerless control	Shutter speed fixed (1/100)	Shutter speed fixed (1/120)
Iris	Auto/Manual (Iris fix mode)	
Gain control	Auto/Manual	
OSD Display	ON/OFF	
Aperture Compensation	Level Controllable	
Focal Length	3.9 ~ 85.8mm (Optic zoom 22x)	
Digital Zoom	10x (Total 220x Zoom)	
Max. Focal Ratio	Wide 1:1.6 Tele 1:3.7	
Covering Angle	f=3.9mm 51.26° (H) × 39.03° (V)f=85.8mm 2.39° (H) × 1.80° (V)	
Min. Focus Distance	1.0m (Tele)-0.01m (Wide)	
Pan Rotation Angle	360° Continuous	
Pan Rotation	Manual/Program	
Pan Speed	Manual : 0.5°/S-120°/s (64 levels) Preset : 0.5°/s-240°/s (64 levels)	

Specifications

Item	NTSC	PAL
Pan Resolution	0.05°	
Pan Rotation Stop Accuracy	0.30°	
Tilt Rotation Angle	+0° ~ 90° (Auto Flip to 180° available by Controller)	
Tilt Rotation	Manual/Program	
Tilt Speed	Manual : 0.5°/s~120°/s(64 levels) Preset : 0.5°/s~240°/s(64 levels)	
Tilt Resolution	0.04°	
Tilt Rotation Stop Accuracy	0.30°	
Preset Position	Max.128 points	
Area Masking	8points	
Alarm	Alarm 4 Input	
	Alarm 2 OUT(Relay : NC/NO/COM,0.5A 125VAC,2A 30VDC Max)	
Operating Temperature	0°C ~ +50°C	
Operating Humidity	20% ~ 75% (No Condensation)	
Storage Temperature	-20°C ~ +60°C	
Storage Humidity	20% ~ 95% (No Condensation)	
Power Source, Voltage	AC 24V ± 10%	
Power Consumption	8 Watts in standby, 13 Watts in operation	
Dimensions	∅ 128 × 207.5mm	
Weight	Approx. 1.8kg	
Environment	Indoor : Indoor Housing (STH-160PI), Indoor embedded Housing (STH-128PE) Outdoor : Outdoor Housing (STH-160PO) Wall Mount : STB-270PW Ceiling Mount : STB-496PP	

※ External Design and specification are subject to change without notice for improvement of product performance.

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