



SUMMARY/SETUP MANUAL

VCC-HD5400 VCC-HD5400P

Megapixel Camera

THIS INSTALLATION SHOULD BE MADE BY A QUALIFIED SERVICE PERSON AND SHOULD CONFORM TO ALL LOCAL CODES.



Before installing and using the camera, please read this manual carefully.

Be sure to keep it handy for later reference.

In addition, be sure to read carefully the electronic manual (INSTRUCTION MANUAL) contained in the supplied CD-ROM to ensure correct operation of the camera.

Important

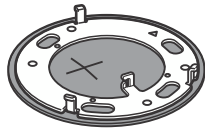
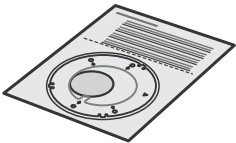
- Be careful when opening holes for installing the unit. Work with the power and video cables pulled out for easy installation.
- Make sure to properly perform waterproofing for the ceiling where you are installing the unit.
- Make sure that the surface in the installation location has no unevenness and is strong enough to bear the total weight of the unit.
- Install this unit in an environment where the temperature range stays between -10°C and $+50^{\circ}\text{C}/14^{\circ}\text{F}$ and 122°F (no condensation allowed).
- As a precaution against static electricity damage, touch a nearby metal object (door knob, etc.) to dissipate static electricity in your body before touching this unit.

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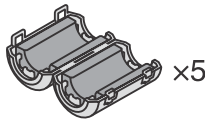
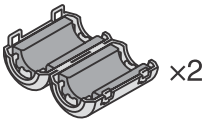
■ Accessories

- ① Pattern sheet ② Mounting plate ③ Hexagonal wrench ④ Fixer ⑤ CD-ROM



- ⑥ Clamping core: To prevent electromagnetic interference

- VCC-HD5400
- VCC-HD5400P



■ Check your operating environment.

To operate the camera via network operation, you must meet the following operating requirements.


- **PC** : IBM PC/AT compatible
 - **Operating system** : Windows XP Professional/Windows Vista
 - **CPU** : Core2Duo E6700 2.66 GHz or higher
 - **Memory** : Windows XP: 1GB or more
Windows Vista: 2GB or more
 - **Network interface** : 10Base-T/100Base-TX (RJ-45 connector)
 - **Display card** : 1920×1200 pixels or higher
 - **Graphics chip** : ATI RADEON HD2600 series or higher
nVIDIA GeForce 8600 series or higher
nVIDIA Quadro FX550 series or higher
 - **Web browser** : Internet Explorer Ver. 6.0 SP2 or higher,
or Internet Explorer Ver. 7.0
-

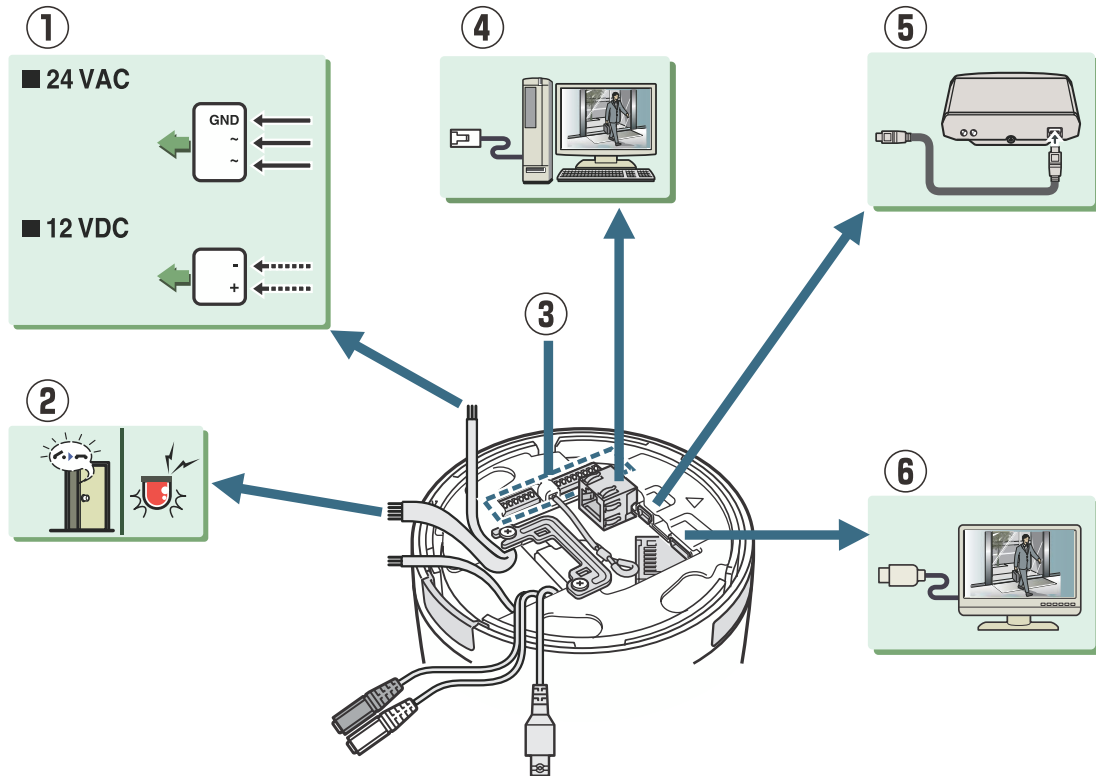
■ You can automatically set up the IP address of the camera.

This software application is useful when two or more cameras are connected to the network. Download “Auto IP Setup” software application from the supplied CD-ROM.

Name and Function of Each Component



For the cable type, see the “cable label” attached to the cable bundle.
 For the detailed connection procedure, refer to the “Basic Connections” section. ( Page 5)



① 24 VAC /12 VDC Power cable

② Alarm cables

- Alarm input cable: Connect an external switch, infrared sensor, or other device to detect alarm conditions such as the entry of an intruder.
- Alarm output cable: Connect a buzzer, lamp, or other alarm device.

③ Dip switch (Page 11 “Control/Address Settings”)



A Control switch: Use this switch to configure the baud rate and protocol settings.

B Address switch: Use this switch to configure the camera control address.

④ Network Socket (LAN: RJ-45, PoE)

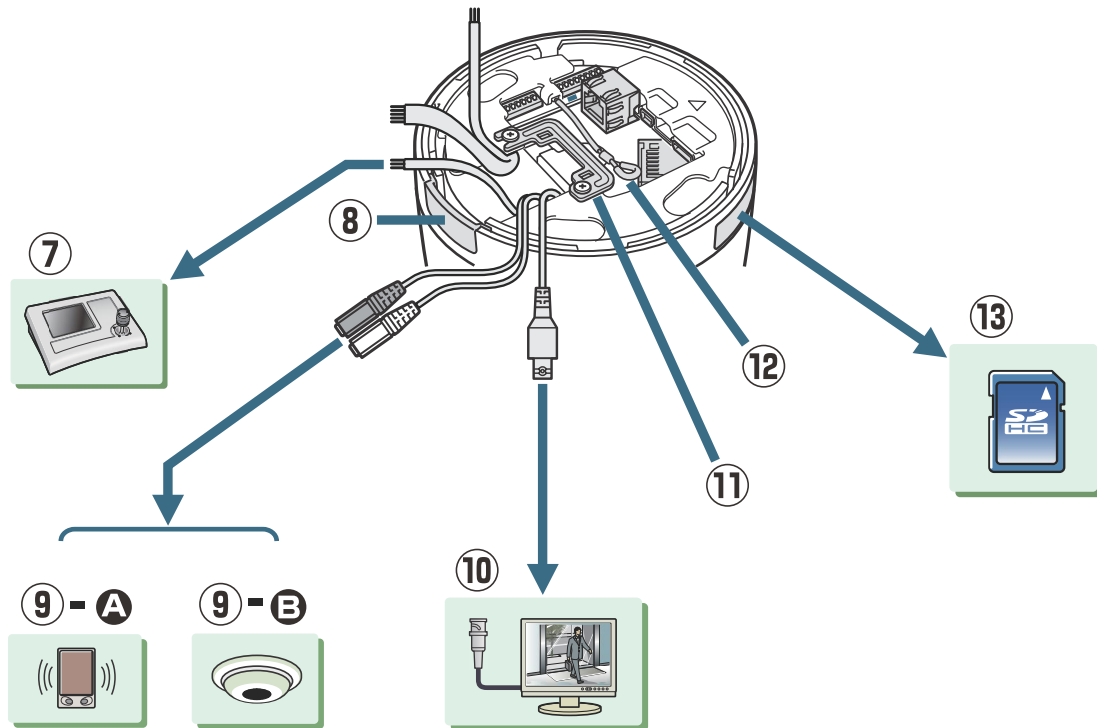
⑤ EX-HDD terminal (USB type)

To record video on an external hard disk drive, you must install a 2.5" hard disk drive (SATA) in the dedicated hard disk case (VA-HDC4000) which is sold separately and then connect the hard disk drive case.

⑥ HDMI Connector

The terminal outputs super-fine HD (High Definition) video signal. Use the terminal to connect a high-definition monitor with HDMI interface.

Name and Function of Each Component



⑦ Control cable

By connecting a system controller (sold separately), the camera can be controlled remotely.

⑧ Wire gutter cover

If you wire on the ceiling surface, remove the wiring gutter cover.

⑨ Audio jacks

A Audio output terminal (black: 3.5-mm mini jack)

Use this jack to connect to the audio input jacks of a powered speaker system or a monitor.

B Audio input terminal (white: 3.5-mm mini jack)

Use this jack to connect an external microphone to listen to the sound while monitoring the live video, or simultaneously record the video and sound.



This jack supports 3.5-mm monaural microphone plugs, or monaural line-level input plugs (the left channel only for stereo plugs).

⑩ Monitor output terminal (BNC type)

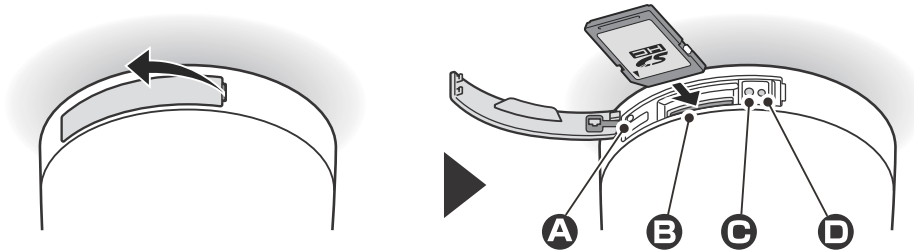
Connect this terminal to a monitor, etc. A live video will be displayed on the monitor once the camera is turned on.

⑪ Cable holder

⑫ Safety cable

Use this cable to hook the camera on the supplied mounting plate when installing the camera.

13 Side Cover



A Fall-prevention screw

B SD Card slot

C Power indicator

This indicator lights up when the camera is powered on.



When the camera is on, this indicator blinks to indicate the following camera statuses:


- Deactivation of recording to SD memory card in progress
- Firmware update in progress
- An SD memory card error occurred (Fast blink)

D SD CARD button

- **Disable recording:** The power indicator blinks when this button is pressed, and stays lit when the SD memory card is prepared to be removed.
- **Enable recording:** The power indicator blinks when this button is pressed, and stays lit when the SD memory card is recognized.

Installing Recording Media



- Before you insert an SD card, be sure to turn off the camera.
- If you insert an SD card, format it via network operation on the SD/HDD screen.
( Electronic manual)

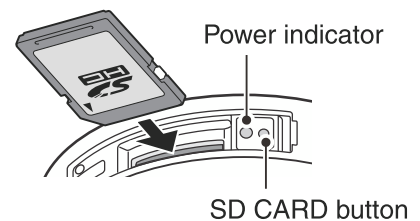
■ SD memory card

• How to insert the SD card

To record live video on a SD memory card, open the cover as shown below and insert the card into the card slot until you hear a click.

• How to remove the SD card

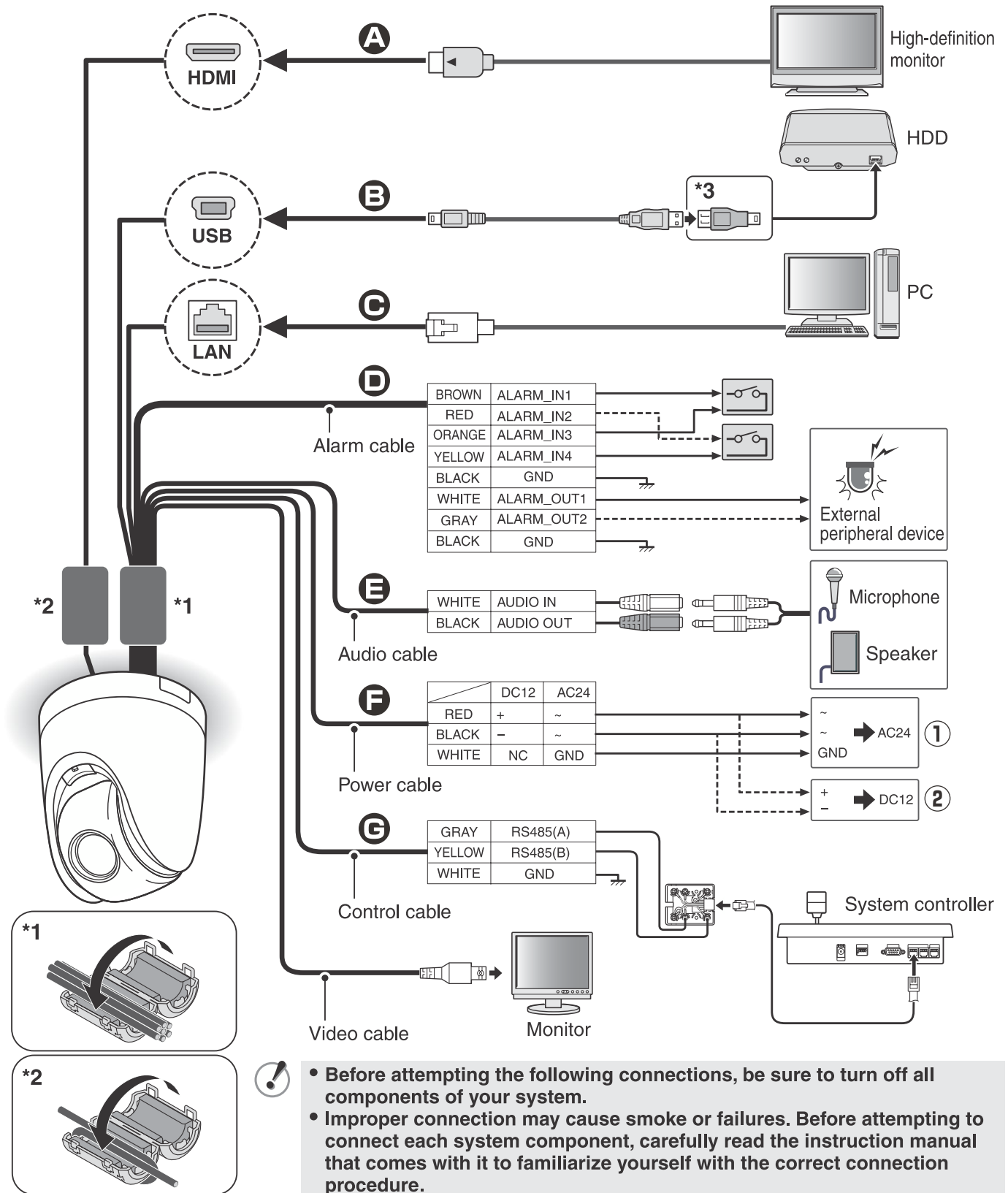
Press the SD CARD button and, after confirming that the indicator lamp has stopped blinking and now stays lit, take out the SD card.



■ External HDD

Use the optional hard disk case (VA-HDC4000) to install the SANYO-specified 2.5" SATA hard disk drive and connect the drive to the EX-HDD terminal.

For detailed information on the hard disk case including hard disk installation, refer to the instruction manual supplied with the hard disk case.

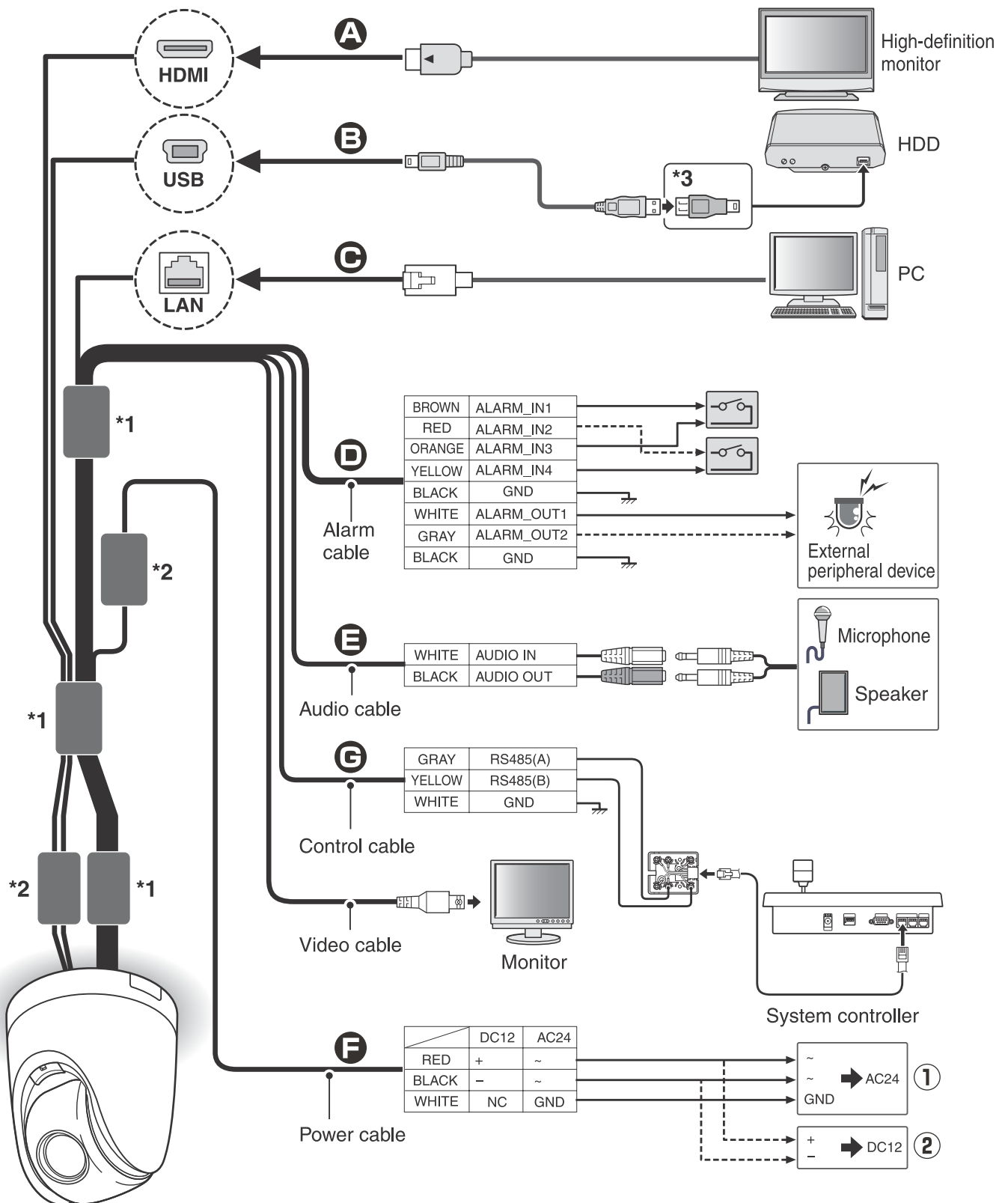


A High-Definition Monitor Connection

Connect the HDMI cable to the HD video output terminal (HDMI).



You cannot output the video simultaneously from HD video output terminal (HDMI) and from monitor output terminal (MONITOR OUT). When both terminals are used, the HD video output terminal takes precedence.



B Connecting an External Hard Disk

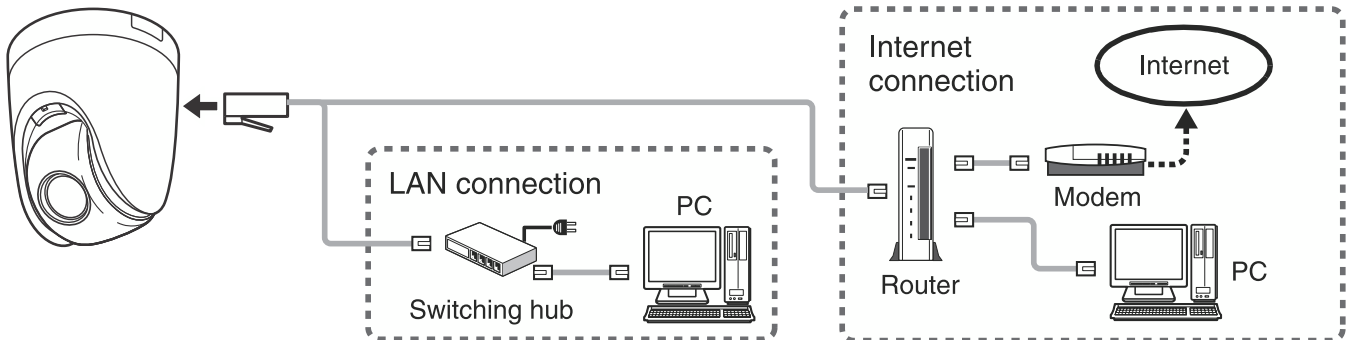
Put the hard disk in a dedicated hard disk case (VA-HDC4000, sold separately) and then connect the case to the camera.

***3:** Connect the mini-USB (type B) connector of the USB cable to the camera, connect the other connector (type A) of the cable to a commercially-available USB adapter (female A to male mini B), and connect the adapter to the hard disk case.

Basic Connections

🔗 Network Connection

This camera is designed so that you can use all of its functions via network operation. By connecting the network (LAN) socket of the camera to your PC using a LAN cable, you can configure and operate it from the Web browser installed on your PC.



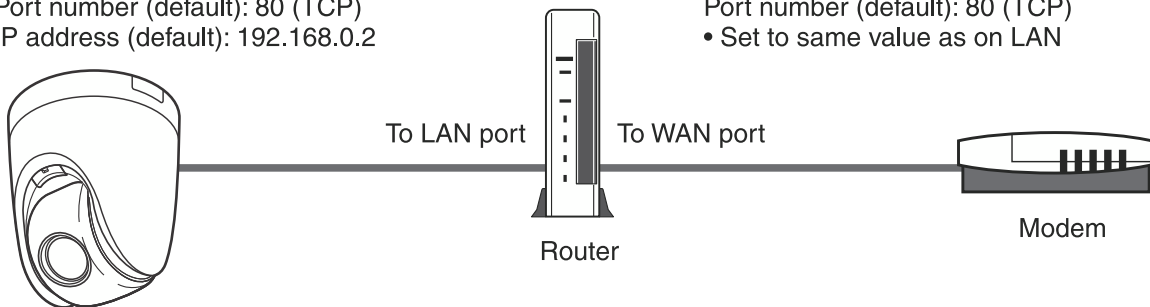
- Use a LAN cable no longer than 100 m (109.4 yards) with the shield type CAT5 or higher.
- Use a straight-type cable if connecting to LAN, and use a cross-type cable if directly connecting the camera to a PC.
- The supported Web browser is Internet Explorer Ver.6.0 SP2 or higher, or Internet Explorer Ver.7.0.

■ About the internet connection

Port forwarding for the video port must be enabled on the broadband router. For details on how to set port forwarding, please refer to your router's Instruction manual.

Port number (default): 80 (TCP)
IP address (default): 192.168.0.2

Port number (default): 80 (TCP)
• Set to same value as on LAN



- To connect two or more cameras, via network operation on the NETWORK SETTINGS screen, assign them with port numbers that are different from that of the first camera. (📖 Electronic manual)

■ Using PoE

This camera supports PoE (Power over Ethernet). This means that you can install the camera in locations where there is no 24 VAC/12 VDC power outlet nearby.

- If you are using PoE, do not use the camera's power terminals (24 VAC/12 VDC).
- Do not power the PoE hub or PoE power adapter until you finish connecting the camera.
- When the PoE power supply is used, you cannot record video to an external hard disk drive.

You can use a PoE-compatible switching hub to extend the transmission distance.

For details on the extendable distance, please refer to the hub performance in the specifications, etc.

📖 For how to connect the PoE power supply, refer to the electronic manual.

D Alarm Cable Connection

Use a thicker cable than 24AWG for connection. (Maximum length 600 m/656 yds.)

① Outputting alarm signals (ALARM OUT1-2)

Connect a buzzer, lamp, or other alarm device to the alarm output cable.
Alarm can be output via two channels.



(📖 **Electronic manual**)

- After connecting an alarm device, configure the output conditions for the corresponding alarm output cable via network operation on the **ALARM SETTINGS** screen.
- Configuration of alarm output terminal is also possible via remote operation. For that, set [ALARM OUT] to “REMOTE” on the **ALARM SETTINGS** screen.

② Inputting alarm signals (ALARM IN1-4)

Connect an alarm switch, infrared sensor, or other device to detect alarm conditions to the alarm input cable.

Up to four independent alarm input channels are available.



(📖 **Electronic manual**)

- After connecting an alarm device, configure the input conditions for the corresponding alarm input cable via network operation on the **ALARM SETTINGS** screen.
- To use the alarm input terminals as color/black-and-white mode switching terminals, follow the steps below.
 - Under **CAMERA SETTINGS**, set [DAY/NIGHT] to “COLOR” and select the cable you want to use in [EXT ALARM].
 - On the **ALARM SETTINGS** screen, in [POLARITY], select the signal polarity of the alarm input terminal.
- If you connect an external switch to ALARM IN1 terminal, you can specify time by controlling the switch. In this case, configure the [CLOCK IN] setting via network operation on **CLOCK SETTINGS** screen.

E Audio Jack Connection

• AUDIO IN Jack (White)

Use this jack to connect an optional external microphone to listen to the sound while monitoring the surveillance video, or simultaneously record the video and sound.

• AUDIO OUT Jack (Black)

Connect this jack via an audio cable to the audio input jack of an amplified speaker system or the monitor.



This terminal is compatible with mono microphone with 3.5-mm jack or line mono signals (only the left channel in cases of stereo signals).

F Power Connection

Connect the power terminals (24 VAC/12 VDC) of the camera to a power supply.

① Connection to 24 VAC power supply

Although the power terminals have no polarity, the earth grounding wire must be connected to the GND (earth grounding) terminal.

② Connection to 12 VDC power supply

Note the polarity (+/-) of the power terminals when connecting the camera to a 12 VDC power supply.

Incorrect polarity may cause damage to the camera.



- Be sure to use an 18AWG or thicker wire power cable.
- If you must use a long power cable, determine the cable type by ensuring that the voltage at the 24 VAC/12 VDC terminal is within the operating range of the camera.
- If you are using PoE, do not use the camera’s power terminals (24 VAC/12 VDC).

G Connection of controller

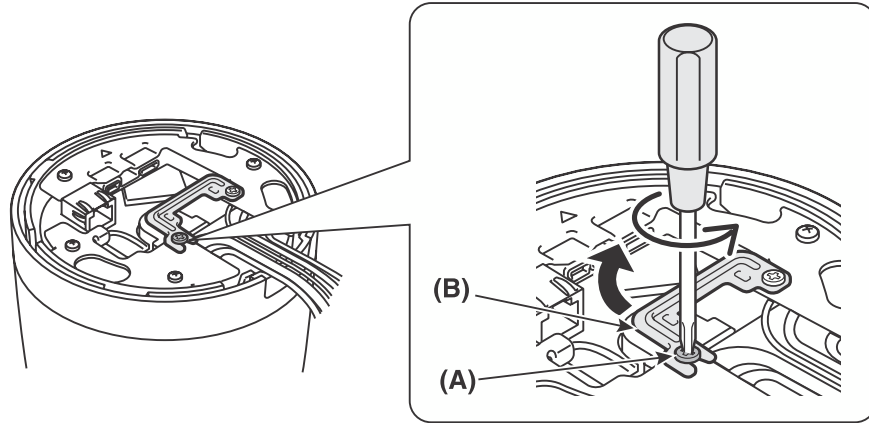
By connecting a system controller (sold separately), the camera can be controlled remotely.




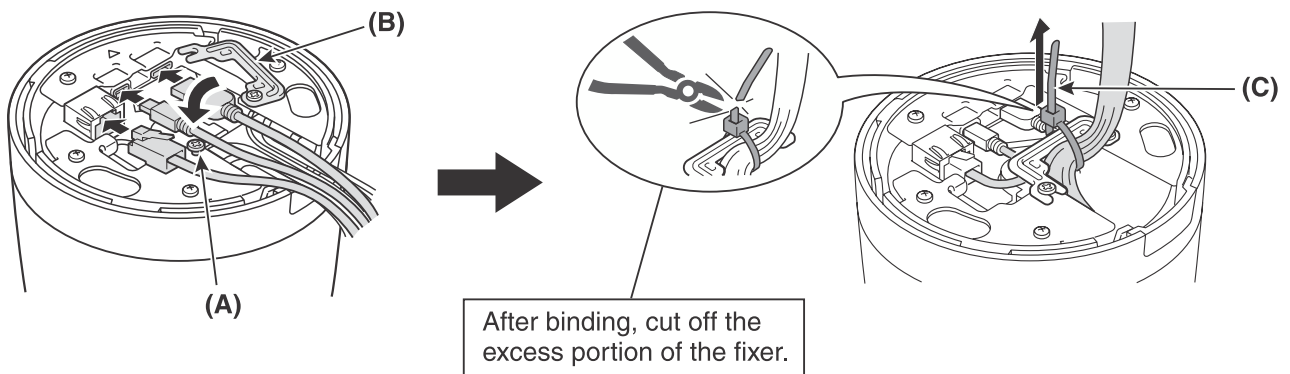
Configure the protocol, baud rate and address. (Refer to “Control/Address Settings” 📖 Page 11).

Installation

- 1** Using the supplied pattern sheet, drill the holes for the cables and screws.
 - Pull out the cables from the ceiling.
- 2** Attach the supplied mounting plate to the ceiling using commercially-available screws.
(Screw: M4/No. 8 or equivalent) Length: 40 mm/1.6 in or more, Head: ϕ 8.3 mm/0.3 in
 - Loosen the screw (A) and remove the cable holder (B).




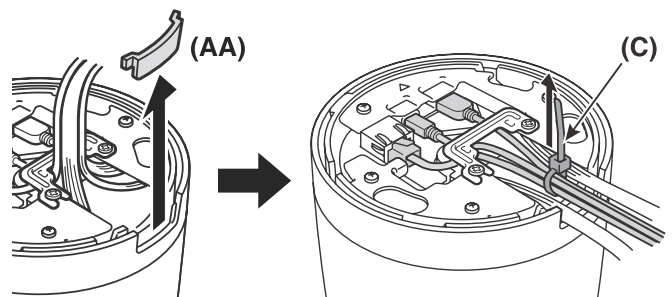
- 3** Hook the safety cable attached on the camera base to the mounting plate.
- 4** Connect the cables from the ceiling to the camera cables. ( Page 5 “Basic Connections”)
 - ① After connecting each of the terminals (LAN, USB, HDMI), put the cable holder (B) back to its original position so as to hold all the cables in place, and tighten the screw (A).
 - ② Using the supplied fixer (C), tidy the wiring by binding all the cables to make the installation easier.

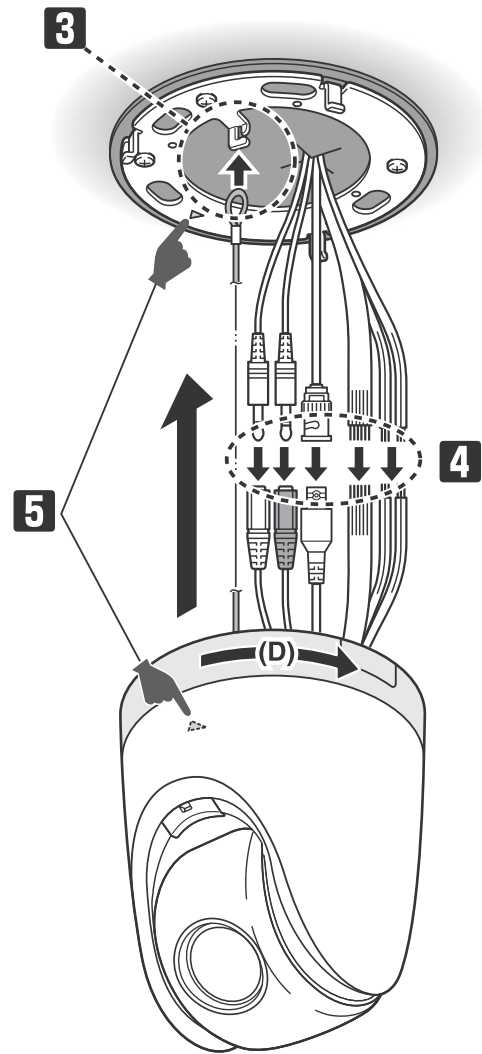
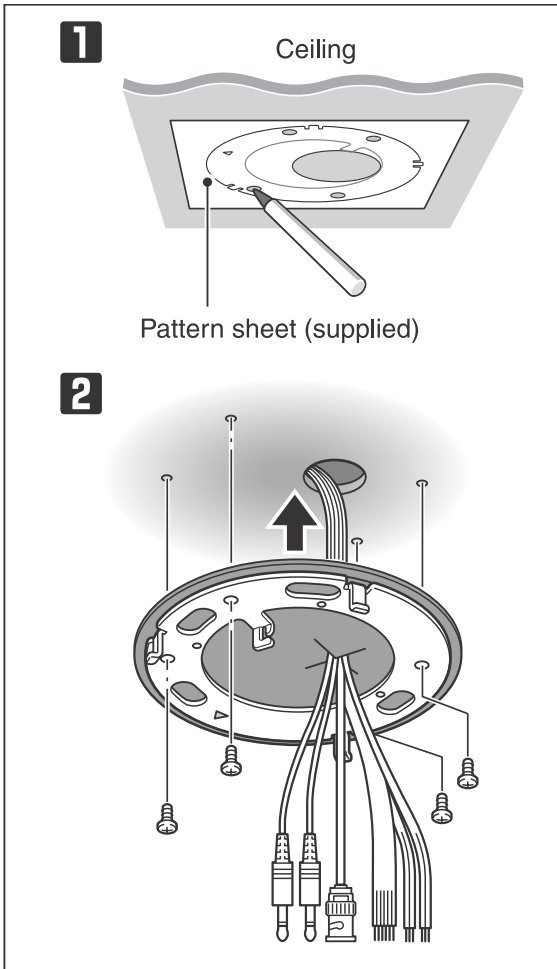


When routing cables through the side face of the camera

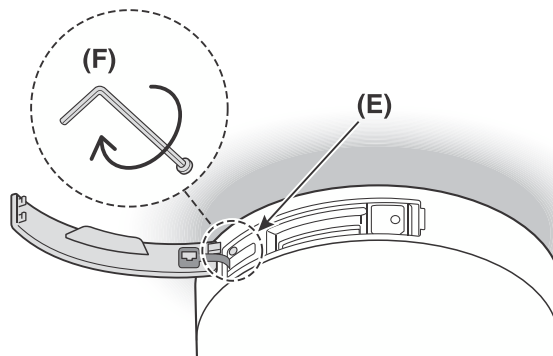
Remove the wire gutter cover (AA).

-  If you use a USB cable or an HDMI cable, secure it along with the LAN cable using the supplied fixer (C) so that the cables don't easily come off.
When you route the cables after installing the camera, be sure to carefully handle the cables so as not to strongly pull them.





- 5** Mount the camera by aligning the triangular marks (▲), then rotate the camera in the arrow (D) direction.
- Make sure the camera is securely mounted.
- 6** Open the side cover and tighten the fall-prevention screw (E) using the supplied hexagonal wrench (F).
- When finished, make sure to put the cover back.



- The surface of the camera can be hot during operation, but it is not a malfunction. When you touch the heated portion of the camera for a long time during installation, adjustment or dismantling, you may get a low-temperature burn.
- SD card may be hot immediately after use. When you remove a SD card from the camera, be absolutely sure to turn it off and wait until it is completely cooled down.

Control/Address Settings

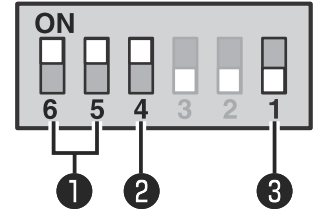
When you connect the camera to a controller, it is necessary to configure the interface board control switch and address switch.

Control switch

This is used to configure transmission rate and protocol, etc.



- Switches 2 and 3 are not used.
- Settings in bold typeface in the table below show the factory default configurations.



1 Baud Rate

Configure the transmission rate of connected devices to the transmission rate of the camera.

Transmission Rate	Switch 6	Switch 5
2400	OFF	OFF
4800	ON	OFF
9600	OFF	ON
19200	ON	ON



When protocol is set to “PELCO”, set to 2400.

2 Protocol

Select the protocol for controlling the camera.

Protocol	Switch 4	Corresponding Protocol
SSP (SANYO)	OFF	Automatic switching between Sanyo SSP and high speed SSP
PELCO	ON	Automatic switching between PELCO-D and PELCO-P

3 Terminator

When you connect multiple cameras, set the terminator setting (Switch 1) of the final device to “ON” and all other devices to “OFF”.

Address switch

If you use the RS485 communication mode, assign a unique address (camera No.) to each camera.

Configure the address by setting the dip switches to “ON” and “OFF”.



For further information, refer to the “Address Settings Table” on the next page.



Address Settings Table

In the table, the circle mark “○” means ON. Set switches as shown in the table.

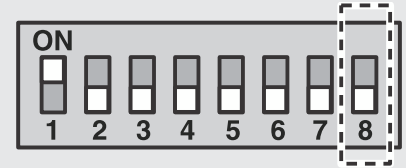


When protocol is “SSP (SANYO)”:

- Configurable addresses: 1 to 127
- Switch 8 is configured to “OFF”.

When protocol is “PELCO”:

- Configurable addresses: 1 to 255
- To configure the address to a number between 128 and 255, set the switch 8 to “ON”.




Address (Camera No.)			Switch No.						
Protocol			1	2	3	4	5	6	7
SANYO	PELCO								
–	–	128							
1	1	129	○						
2	2	130		○					
3	3	131	○	○					
4	4	132			○				
5	5	133	○		○				
6	6	134		○	○				
7	7	135	○	○	○				
8	8	136				○			
9	9	137	○			○			
10	10	138		○		○			
11	11	139	○	○		○			
12	12	140			○	○			
13	13	141	○		○	○			
14	14	142		○	○	○			
15	15	143	○	○	○	○			
16	16	144					○		
17	17	145	○				○		
18	18	146		○			○		
19	19	147	○	○					
20	20	148			○	○			
21	21	149	○		○	○			
22	22	150		○	○	○			
23	23	151	○	○	○	○			
24	24	152				○	○		
25	25	153	○			○	○		
26	26	154		○		○	○		
27	27	155	○	○		○	○		
28	28	156			○	○	○		
29	29	157	○		○	○	○		
30	30	158		○	○	○	○		
31	31	159	○	○	○	○	○		
32	32	160						○	
33	33	161	○					○	
34	34	162		○				○	
35	35	163	○	○				○	
36	36	164			○			○	
37	37	165	○		○			○	
38	38	166		○	○			○	
39	39	167	○	○	○			○	
40	40	168				○		○	
41	41	169	○			○		○	
42	42	170		○		○		○	

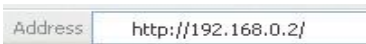
Address (Camera No.)			Switch No.						
Protocol			1	2	3	4	5	6	7
SANYO	PELCO								
43	43	171	○	○		○		○	
44	44	172			○	○		○	
45	45	173	○		○	○		○	
46	46	174		○	○	○		○	
47	47	175	○	○	○	○		○	
48	48	176					○	○	
49	49	177	○				○	○	
50	50	178		○			○	○	
51	51	179	○	○			○	○	
52	52	180			○		○	○	
53	53	181	○		○		○	○	
54	54	182		○	○		○	○	
55	55	183	○	○	○		○	○	
56	56	184				○	○	○	
57	57	185	○			○	○	○	
58	58	186		○		○	○	○	
59	59	187	○	○		○	○	○	
60	60	188			○	○	○	○	
61	61	189	○		○	○	○	○	
62	62	190		○	○	○	○	○	
63	63	191	○	○	○	○	○	○	
64	64	192							○
65	65	193	○						○
66	66	194		○					○
67	67	195	○	○					○
68	68	196			○				○
69	69	197	○		○				○
70	70	198		○	○				○
71	71	199	○	○	○				○
72	72	200				○			○
73	73	201	○			○			○
74	74	202		○		○			○
75	75	203	○	○		○			○
76	76	204			○	○			○
77	77	205	○		○	○			○
78	78	206		○	○	○			○
79	79	207	○	○	○	○			○
80	80	208					○		○
81	81	209	○				○		○
82	82	210		○			○		○
83	83	211	○	○			○		○
84	84	212			○		○		○
85	85	213	○		○		○		○

Address (Camera No.)			Switch No.						
Protocol			1	2	3	4	5	6	7
SANYO	PELCO								
86	86	214		○	○			○	○
87	87	215	○	○	○			○	○
88	88	216				○	○		○
89	89	217	○			○	○		○
90	90	218		○		○	○		○
91	91	219	○	○		○	○		○
92	92	220			○	○	○		○
93	93	221	○			○	○		○
94	94	222		○	○	○	○		○
95	95	223	○	○	○	○	○		○
96	96	224						○	○
97	97	225	○					○	○
98	98	226		○				○	○
99	99	227	○	○				○	○
100	100	228			○			○	○
101	101	229	○		○			○	○
102	102	230		○	○			○	○
103	103	231	○	○	○			○	○
104	104	232				○		○	○
105	105	233	○			○		○	○
106	106	234		○		○		○	○
107	107	235	○	○		○		○	○
108	108	236			○	○		○	○
109	109	237	○		○	○		○	○
110	110	238		○	○	○		○	○
111	111	239	○	○	○	○		○	○
112	112	240					○	○	○
113	113	241	○				○	○	○
114	114	242		○			○	○	○
115	115	243	○	○			○	○	○
116	116	244			○		○	○	○
117	117	245	○		○		○	○	○
118	118	246		○	○		○	○	○
119	119	247	○	○	○		○	○	○
120	120	248				○	○	○	○
121	121	249	○			○	○	○	○
122	122	250		○		○	○	○	○
123	123	251	○	○		○	○	○	○
124	124	252			○		○	○	○
125	125	253	○		○		○	○	○
126	126	254		○	○		○	○	○
127	127	255	○	○	○	○	○	○	○

Network Settings

Preparing Your Computer for Network Operation

- 1** Check your operating environment. ( Page 1)
- 2** Connect the camera to the network to which your PC is also connected.
- 3** Configure the network information on your PC.
Configure information such as the IP address of your PC.
- 4** Install the “H.264 Plug-in” from the supplied CD-ROM onto your PC.
You are now ready to monitor the surveillance video in the H.264 format.
- 5** Start Internet Explorer.
The supported Web browser is Internet Explorer Ver.6.0 SP2 or higher, or Internet Explorer Ver.7.0.
- 6** Access the camera from your Web browser.
From your Web browser (Internet Explorer), access the camera and log into the system as an “admin” user (administrator).
- 7** In the address bar, type the IP address of the camera and press [Enter] key.
When you access the camera, the login screen appears.
If this is the first access to the camera, in the Address bar, enter the default IP address as follows.



If you set [SSL] to “ON”, before the IP address, type “https://” (instead of “http://”). Attempts to access the camera using the default IP address will fail if that address is already being used by another device in the network. If so, change the IP address of the existing device before accessing the camera.

- 8** Type your user name and password and click [OK].
The language selection screen appears.



If this is the first access to the camera, log in as an admin user (administrator) using the following default authentication information.

- User name: admin
- Password: admin

- 9** Click the button corresponding to the language you want to use.
The live screen appears.
From the second login onwards, the live screen appears automatically by skipping the language selection screen.
If this is the first access to the camera, configure the system clock on the CLOCK SETTINGS screen.

Specifications

■ Camera

Image pickup device	1/2.5" CMOS sensor
Effective pixels	16:9 1920 (H) × 1080 (V), 4:3 1600 (H) × 1200 (V)
Lowest image illumination	50IRE: 2.0 lx (F1.8, in color mode with high gain) 50IRE: 0.1 lx (F1.8 in black-and-white mode with high gain)
Video S/N ratio	50 dB or higher (when AGC is 'OFF')
Lens	Focal Length: f=6.3 - 63 mm, F number: F1.8 - 2.5 Optical zoom 10x, electronic zoom 16x (up to 160x when used in combination with the optical zoom)
Rotational scope	Pan: 360° endless pan Tilt: -20 to +200°
Rotation speed	Pan: Max. 350°/sec Tilt: Max. 350°/sec (0.1° - 120°/ sec for manual operation)
Preset position	Max. 256
Auto mode	Sequential, auto pan, tour, automatic return
Privacy mask	ON/OFF, up to 32 positions
Motion sensor	ON (detection area setting, video analytics)/OFF, face detection function
Auto pursuit	ON/OFF
Sway compensation	ON/OFF
Language selection	English, French, German, Spanish, Japanese

For further details on the specifications of the camera, refer to the electronic manual.

■ I/O

Video output	HD Output: HDMI terminal (TYPE C) Monitor output: BNC terminal (MONITOR OUT)
LAN	10BASE-T/100BASE-TX (RJ-45 connector)
EX-HDD Connector	For connecting an external hard disk drive case
SD Card Slot	1 (SDHC compliant, max. 32 GB supported)
Alarm input	4 (NO/NC), also used for switching between day and night modes
Alarm output	2 (NO/NC, 16V, 150 mA, open collector)
Audio input/output	Audio input (white: 3.5-mm mini jack) Audio output (black: 3.5-mm mini jack)
Communication method	RS-485
Protocol	SSP, PELCO-D
Baud Rate	2400, 4800, 9600, 19200
Address	1 - 255 (sanyo SSP: 1 to 127)

■ Recording media

SD memory card	Normal recording, alarm recording, backup video recording in event of a network failure, log information
External HDD	

For the recommended SD memory cards or hard disks, visit our website.

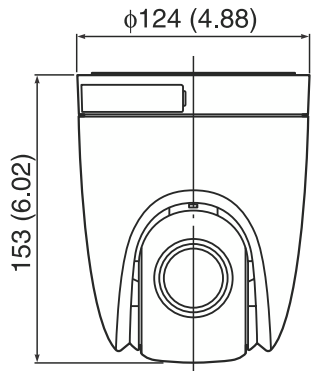
<http://www.sanyosecurity.com/>

Specifications

■ Network

Image/video compression	H.264/JPEG
Video size (H.264)	(16:9) 1920×1080, 1280×720, 640×360, 320×180 (4:3) 1600×1200, 1280×960, 1024×768, 640×480, 320×240
Video size (JPEG)	(16:9) 1920×1080, 1280×720, 1024×576, 640×360 (4:3) 1600×1200, 1280×960, 1024×768, 800×600, 640×480, 320×240
Picture quality	QUALITY mode: BASIC, NORMAL, ENHANCED, FINE, SUPER FINE BITRATE mode: User-specified bit rate
Interface	10BASE-T/100BASE-TX
Protocol	TCP/IP, UDP, HTTP, HTTPS, SMTP, NTP, DHCP, FTP, DDNS, RTP, RTSP, RTCP
Audio	G.711 (Bidirectional)
Simultaneous access	20
Security	BASIC authentication (ID/password), SSL, IP filtering

■ Others

Operating ambient temperature/humidity	-10 to +50°C/14 to 122°F, 90% RH or less (no condensation)
Power source	VCC-HD5400: <ul style="list-style-type: none"> • 12 to 15 VDC • 24 VAC±10%, 60 Hz • PoE VCC-HD5400P: <ul style="list-style-type: none"> • 12 to 15 VDC • 24 VAC±10%, 50 Hz • PoE
Power consumption	21 W (PoE: 12.3 W)
Weight	1350 g
Dimensions	Unit: mm (inch) <div style="text-align: center;">  <p>The drawing shows a top-down view of a cylindrical device. A horizontal dimension line at the top indicates a diameter of 124 mm (4.88 inches). A vertical dimension line on the left indicates a height of 153 mm (6.02 inches). The device has a central circular feature and a smaller rectangular feature on the top surface.</p> </div>

Appearance and specifications are subject to change without prior notice or obligations.

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- In the following situations, it is possible that recorded data may be lost (destroyed). Our company bears absolutely no responsibility for damages or profits loss due to the loss of data.
 - The medium (SD card or external hard disk) is not used correctly.
 - The medium is not installed on the device correctly.
 - The medium is subjected to electrical or mechanical shock.
 - The card is removed or the power is turned off while the card is being accessed.
 - The medium has reached the end of its service life.

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