SONY

4-154-384-**15** (1)

Network Camera

Installation Manual

Before operating the unit, please read this manual thoroughly and retain it for future reference.

IPELA

SNC-RH164
SNC-RS86N/RS86P
SNC-RS84N/RS84P

HD

http://www.sony.net/

 Printed in China

4154384150

Owner's Record

Refer to these numbers whenever you call upon your Sony dealer regarding this product.

Model No. _____ Serial No. _____

WARNING

To avoid electrical shock, do not open the cabinet. Refer servicing to qualified personnel only.

WARNING

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

WARNING

A readily accessible disconnect device shall be incorporated in the building installation wiring.

WARNING (for Installers only)

Instructions for installing the equipment.
After the installation, ensure the connection is capable of supporting five times the weight of the equipment downwards.

CAUTION

The rating label is located underneath the Top unit.

CAUTION for LAN port

For safety reasons, do not connect the LAN port to any network devices that might have excessive voltage.

Power Supply

Caution for U.S.A. and Canada
The SNC-RH164/RS86N/RS84N operates on 24 V AC.
In the USA, these products shall be powered by a UL Listed Class 2 Power Supply Only.
In Canada, these products shall be powered by a CSA Certified Class 2 Power Supply Only.

Caution for other countries
The SNC-RH164/RS86P/RS84P operates on 24 V AC.
Use a power supply rated 24 V AC which meets the requirements for SELV (Safety Extra Low Voltage) and complies with Limited Power Source according to IEC 60950-1 second edition.

For customers in the U.S.A. (SNC-RH164/RS86N/RS84N only)

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC 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.

You are cautioned that any changes or modifications not expressly approved in this manual could void your authority to operate this equipment.

All interface cables used to connect peripherals must be shielded in order to comply with the limits for a digital device pursuant to Subpart B of Part 15 of FCC Rules.

For customers in Canada (SNC-RH164/RS86N/RS84N only)

This Class A digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

For the customers in Europe

The manufacturer of this product is Sony Corporation, 1-7-1 Konan, Minato-ku, Tokyo, 108-0075 Japan.
The Authorized Representative for EMC and product safety is Sony Deutschland GmbH, Hedelfinger Strasse 61, 70327 Stuttgart, Germany.
For any service or guarantee matters please refer to the addresses given in separate service or guarantee documents.

For the customers in Europe, Australia and New Zealand

WARNING

This is a Class A product. In a domestic environment, this product may cause radio interference in which case the user may be required to take adequate measures.
In the case that interference should occur, consult your nearest authorized Sony service facility.
This apparatus shall not be used in the residential area.

ATTENTION

The electromagnetic fields at specific frequencies may influence the picture of the unit.

Notes on Use

Before Use

- Do not lift the camera by the cable.
- If you find condensation when you open the package, turn on the power after the condensation disappears.

Data and security

- Since the service is Internet-based, there is a risk that the image or audio you are monitoring can be viewed or used by a third-party via the network. You should keep in mind that the images or audio you are monitoring may be protected by privacy and other legal rights, and the responsibility for making sure you are complying with applicable laws is yours alone.
- Access to the images and audio is protected only by a user name and the password you set up. No further authentication is provided nor should you presume that any other protective filtering is done by the service.
- SONY IS NOT RESPONSIBLE, AND ASSUMES ABSOLUTELY NO LIABILITY TO YOU OR ANYONE ELSE, FOR SERVICE INTERRUPTIONS OR DISCONTINUATIONS OR EVEN SERVICE CANCELLATION. THE SERVICE IS PROVIDED AS-IS, AND SONY DISCLAIMS AND EXCLUDES ALL WARRANTIES, EXPRESS OR IMPLIED, WITH RESPECT TO THE SERVICE INCLUDING, BUT NOT LIMITED TO, ANY OR ALL IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR THAT IT WILL OPERATE ERROR-FREE OR CONTINUOUSLY.
- Security configuration is essential for wireless LAN. Should a problem occur without setting security, or due to the limitation of the wireless LAN specifications, SONY shall not be liable for any damage, loss of recorded data or restoration thereof.
- Always make a test recording, and verify that it was recorded successfully. SONY WILL NOT BE LIABLE FOR DAMAGES OF ANY KIND INCLUDING, BUT NOT LIMITED TO, COMPENSATION OR REIMBURSEMENT ON ACCOUNT OF FAILURE OF THIS UNIT OR ITS RECORDING MEDIA, EXTERNAL STORAGE SYSTEMS OR ANY OTHER MEDIA OR STORAGE SYSTEMS TO RECORD CONTENT OF ANY TYPE.
- Always verify that the unit is operating properly before use. SONY WILL NOT BE LIABLE FOR DAMAGES OF ANY KIND INCLUDING, BUT NOT LIMITED TO, COMPENSATION OR REIMBURSEMENT ON ACCOUNT OF THE LOSS OF PRESENT OR PROSPECTIVE PROFITS DUE TO FAILURE OF THIS UNIT, EITHER DURING THE WARRANTY PERIOD OR AFTER EXPIRATION OF THE WARRANTY, OR FOR ANY OTHER REASON WHATSOEVER.
- If you lose data by using this unit, SONY accepts no responsibility for restoration of the data.

Personal information

The images taken by the system using this device can identify individuals and thus they fall under "personal information" stipulated in the "Act on the Protection of Personal Information". Please handle the video data appropriately according to law.

- Information recorded using this product may also be "personal information". Upon disposal, transfer, repair, or any other occasion where this product or storage media is passed on to a third party, practice due care in its handling.

Operating or storage location

Avoid operating or storing the camera in the following locations.

- Extremely hot or cold places (Operating temperature: –40°C to +50°C [–40°F to +122°F])
- Close to sources of strong magnetism
- Close to sources of powerful electromagnetic radiation, such as radios or TV transmitters
- Locations subject to vibration or shock
- Locations where radiation or X-rays are emitted
- Near the outdoor unit of an air conditioner or any other place where drastic temperature changes may occur (this may cause clouding of the dome cover)
- Locations subject to steam or high humidity
- Locations subject to strong wind, such as high places
- Locations where corrosive gas or flammable gas is emitted, or where salt damage may occur

Ventilation

To prevent heat buildup, do not block air circulation around the camera.

Transportation

- Always turn off the power when carrying.
- When transporting the camera, repack it as originally packed at the factory or in materials of equal quality.

Grounding

- Always connect the ground cable before connecting the power cable to the main power supply.
  When removing the ground connection, always disconnect the power cable from the main power supply.
- Check that the ground cable is correctly and securely connected before use.

Installation

Ensure that the dome cover is installed facing perpendicularly downward without any tilt.

Humidity when installing the device

Install this device under low humidity condition. Otherwise the dome cover may cloud up during operation.

Using in cold climates

This device is equipped with a built-in heater, which automatically turns on if the internal temperature is significantly low. Note that, in some environments, the heater may not melt snow or frost on the dome cover.

Starting and closing under low temperature

- When started under temperature conditions of –10°C (14°F) or below, the camera system may not start operating immediately after start-up. In such a case, the heater starts and raises the internal temperature, starting the camera system. It may take about two hours for the camera system to start streaming normal images.
- If the unit is turned off in an ambient temperature of 0°C (32°F) or below, condensation may occur in the dome cover, which may take some time to clear after turning the unit on again. In order to prevent the prolonged condensation, it is recommended that to leave this unit powered on for a short term recess, in that environment.

Cleaning

- Use a soft, dry cloth to clean the external surfaces of the camera. Stubborn stains can be removed using a soft cloth dampened with a small quantity of detergent solution, then wipe dry.
- Do not use volatile solvents such as alcohol, benzene or thinners as they may damage the surface finishes.

Please consult the store of purchase or authorized Sony dealer if there were troubles and anomalies.

Note on laser beams
Laser beams may damage image sensors. You are cautioned that the surface of image sensors should not be exposed to laser beam radiation in an environment where a laser beam device is used.

About the CF Memory Card

Data on the CF Memory Card may be damaged or deleted in the following cases. Sony is not responsible for compensation for damage or lost earnings due to damage or loss of data.

- If you remove the CF Memory Card from this device or turn off the power while the CF Memory Card is being accessed.
- If the CF Memory Card is subject to shock.
- When the lifetime of the CF Memory Card expires.
  (Lifetime may shorten significantly, depending on its use.)
- If the CF Memory Card is not set or inserted properly.

Phenomena Specific to Image Sensors

The following phenomena that may occur in images are specific to image sensors. They do not indicate a malfunction.

White flecks

Although the image sensors are produced with high-precision technologies, fine white flecks may be generated on the screen in rare cases, caused by cosmic rays, etc.
This is related to the principle of image sensors and is not a malfunction.
The white flecks especially tend to be seen in the following cases:
- when operating at a high environmental temperature
- when you have raised the gain (sensitivity)
- when using the slow shutter

Vertical smear (SNC-RS86N/RS86P/RS84N/RS84P only)

When an extremely bright object, such as a strong spotlight or flashlight, is being shot, vertical tails may be produced on the screen, or the image may be distorted.

Aliasing

When fine patterns, stripes, or lines are shot, they may appear jagged or flicker.

About the Supplied Manuals

Installation Manual (this document)

This Installation Manual describes the names and functions of parts and controls of the Network Camera, gives connection examples and explains how to set up the camera. Be sure to read the Installation Manual before operating.

User's Guide (stored in the CD-ROM)

The User's Guide describes how to set up the camera and how to control the camera via a Web browser.
After installing and connecting the camera correctly, operate referring to this User's Guide.

Using the CD-ROM Manuals

The supplied CD-ROM disc includes the User's Guides for this unit (Japanese, English, French, German, Spanish, Italian and Chinese versions) in PDF format.

Preparations

The Adobe Reader Version 6.0 or higher must be installed on your computer in order to use the User's Guide stored in the CD-ROM disc.

Note

If Adobe Reader is not installed, it may be downloaded from the following URL:
http://www.adobe.com/

Reading the manual in the CD-ROM

1 **Insert the CD-ROM in your CD-ROM drive.**
A cover page appears automatically in your Web browser.
If it does not appear automatically in the Web browser, double-click on the index.htm file on the CD-ROM.

2 **Select and click on the manual that you want to read.**
This opens the PDF file of the manual.
Clicking an item in the Table of Contents allows you jump to the relevant page.

Notes

- The files may not be displayed properly, depending on the version of Adobe Reader. In this case, install the latest version, which you can download from the URL mentioned in "Preparations" above.
- If you have lost or damaged the CD-ROM, you can purchase replacement. Contact your Sony service representative.

Adobe and Acrobat Reader are trademarks of Adobe Systems Incorporated in the United States and/or other countries.

Smartphone viewer

This product is equipped with a Smartphone viewer.
With Smartphone viewer, you can display an image from a network camera, pan, tilt and zoom that camera, on your smartphone.
For more details, see "Smartphone viewer User's Manual" at the following URL:
http://www.sony.net/ipela/snc

Location and Function of Part

Camera (Front) A

❶ **Top sunshade**
❷ **Sunshade**
❸ **Dome cover**

Camera (Top) B

❹ **Built-in wire rope**
The wire rope is used for fall-prevention.

❺ **CF card slot**
This slot is used for the optional SNCA-CFW5* Wireless Card or recommended CF memory card.
Insert the SNCA-CFW5* card into the optional Wireless LAN Antenna SNCA-AN1 and the optional Outdoor Antenna Cable Kit SNCA-CW5 to extend the communicable distance by wireless LAN.

Notes

- Insert the CF card with its top side facing outward of the unit.
- For inquires regarding verified CF memory cards, contact your authorized Sony dealer.

* SNCA-CFW5, SNCA-AN1 and SNCA-CW5 are not available in some countries and areas. For details, contact your authorized Sony dealer.

❻ **CF card lever**
Press the lever to remove the CF card from the CF card slot.

❼ **Rating Label**
This label shows the name of device and its electric rating.

❽ **Camera connection terminal**
Connect to the camera connection terminal of the top unit.

Top Unit (Bottom) C

❾ **Reset switch**
This switch returns the setting of the device to the factory default setting.
1. Move the INIT switch in the direction indicated by ← and connect with camera.
2. Turn on power and wait 1 minute. After the initialization is completed, the camera starts.
3. Check that the camera has started and turn off the power to remove camera.
4. Move the INIT switch back to its original position.

Notes

- Resetting the device removes all customized settings. It is recommended that users save the settings as necessary. Instructions on how to save settings are available in the User's Guide.
- The reset switch should always be returned to its original position. Otherwise your device is reset to its factory default setting whenever it is turned on.

❿ **Camera connection terminal**
Connect to the camera connection terminal of the camera.

Cable D

⓫ **Serial communicable I/O (Input/Output) cable (5 pin)**
Provides a serial communicable port.
Use the supplied connection harness 5-pin to connect.

⓬ **Alarm I/O (Input/Output) cable (9 pin)**
Provides four sensor inputs and two alarm outputs.
Use the supplied connection harness 9-pin to connect.

⓭ **LAN (network) cable (RJ45)**
Connect to a 10BASE-T or 100BASE-TX network using a network cable (UTP, category 5).

⓮ **Line output terminal (minijack, monaural)**
Connect to a speaker with a built-in amplifier.

⓯ **Microphone input terminal (minijack, monaural)**
Connect a commercially available microphone.

⓰ **Video output terminal**
Outputs a composite video signal.

⓱ **AC IN 24 V (power input) terminal**
Connect to the 24 V AC power supply system.

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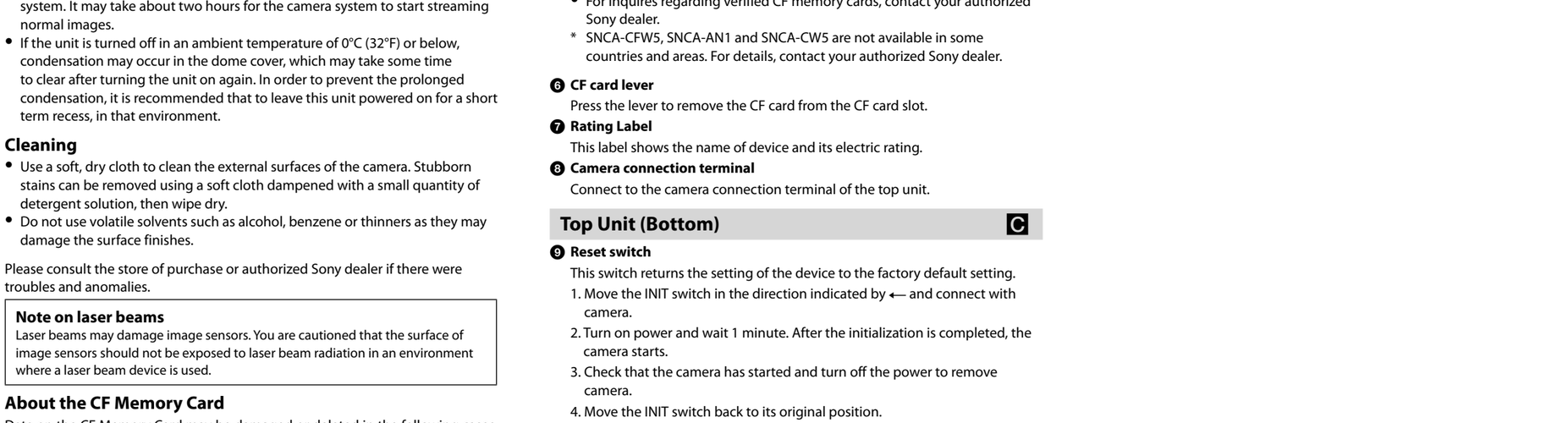

E How to install the camera

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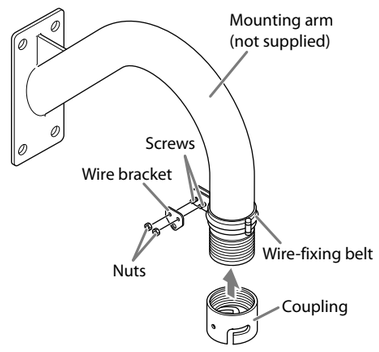

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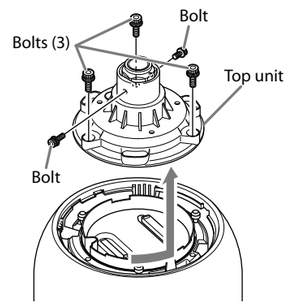

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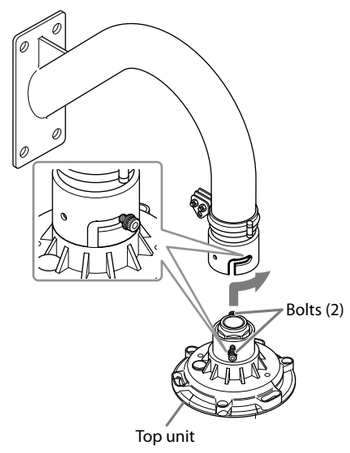

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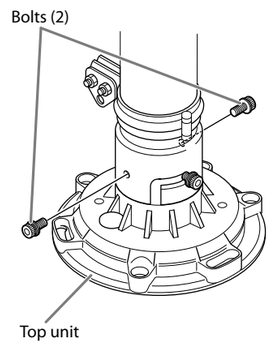

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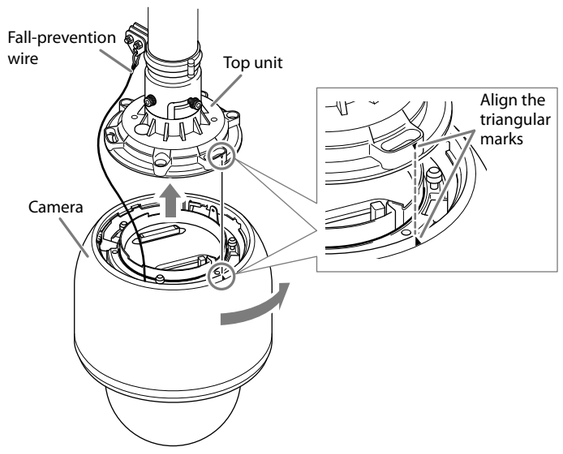

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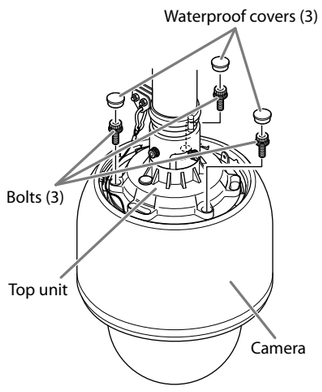

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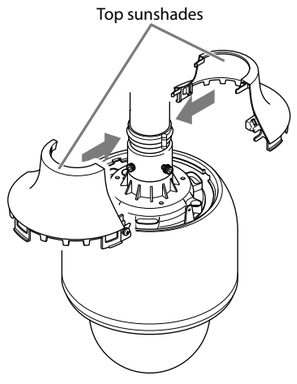

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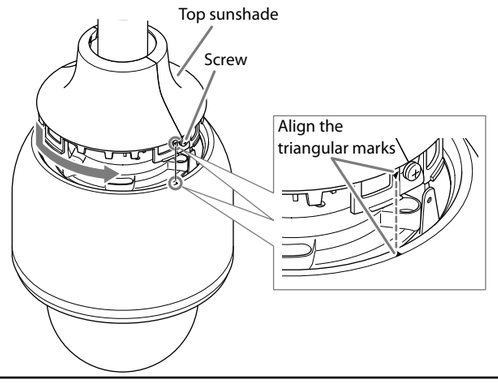

F How to install the wireless LAN

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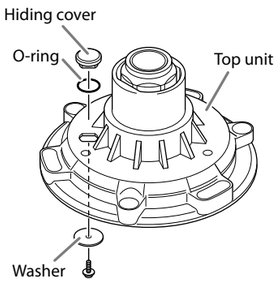

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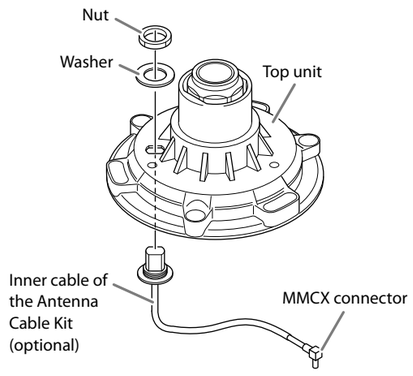

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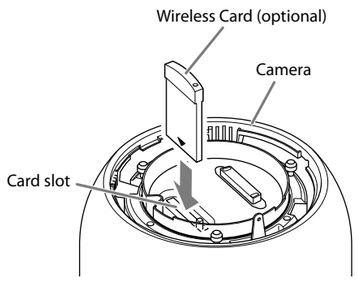

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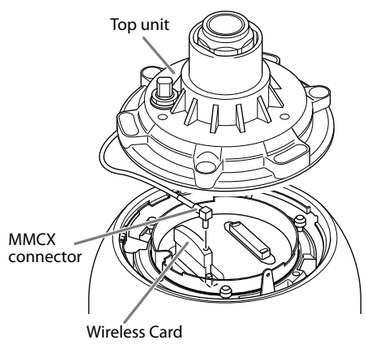

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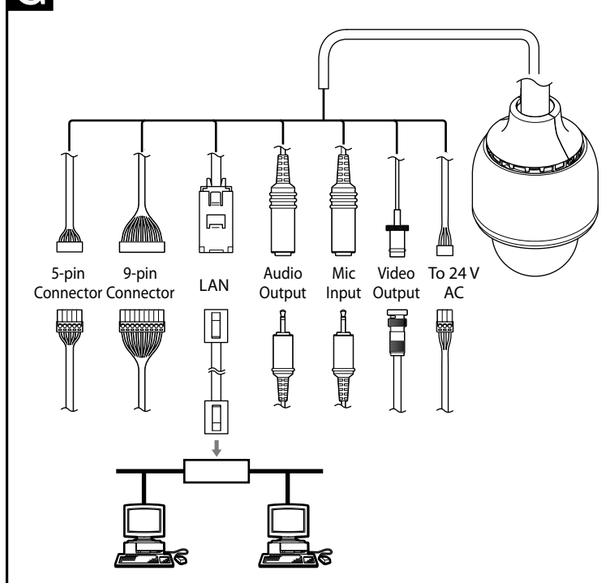

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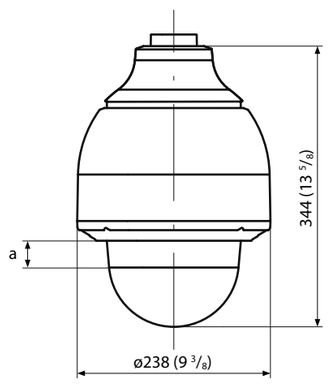


Unit: mm (inches)

Installation

Notes

- Do not allow water to come in contact with the power cable, connection cables or connectors, as it may cause water leakage into this device, and subsequent damage.
- The mounting arm (not supplied) to which the device is attached should have fixing screws of NPT 11/2".
- When you install the camera, make sure you do not damage or spoil the dome cover.
- Ensure that the device is level, with the dome cover facing down.
- The lens zoom and angle may result in a blurred or inclined image within the range above the line of the dome cover (H a).

Warning

- If installing the camera in high location, such as high wall, entrust the installation to a professional contractor or service personnel.
- The camera should be securely installed on a location strong enough to support the weight of the camera and the mounting arm. Otherwise, the camera and mounting arm may fall and cause serious injury.
- For the fall-prevention of the camera, make sure to use the wire rope.
- If the bolts are attached loosely or loosen, the camera and parts may fall. There may also be a risk of water leakage. Make sure to tighten the bolts and screws so that they will not loosen.
- Check the camera is attached securely, the screws, etc. are not loosened periodically, at the least once a year. Depending on the usage conditions, periodic inspections should be conducted more frequently.

How to Install E

Before installation

Referring to the installation manual of the mounting arm (not supplied), drill the required holes for the mounting screws and the connection cable. Then install the mount arm in advance.

How to install the camera

Note

All bolts used for installation should be tightened to 5 N•m (torque wrench setting).

1 Attach the supplied wire-fixing belt and wire bracket to the mounting arm (not supplied). Then secure the wire-fixing belt and wire bracket to the mounting arm by tightening two nuts.
The fall-prevention wire goes through the hole of the wire bracket. Tighten the nuts securely to fix the wire bracket.
2 Screw the supplied coupling on the mounting arm.

Note

If the coupling is attached loosely or loosens, the camera may fall. Securely put the coupling around the mounting arm so that it will not loosen.

3 Remove the three bolts from the top part of the camera, and turn the top unit so the triangular mark aligns with the camera unit, then pull it upward to remove it from the camera.
Have a 5 mm hex wrench ready to loosen the bolts.
4 Temporarily fix the two supplied bolts in the screw holes in the top part of the top unit.
Insert the bolts about 3 mm into the screw holes.
5 Connect the cable from the mounting arm and the cable from the top unit. Then push the connected cable into the mounting arm.
6 Attach the top unit to the mounting arm using the bolts.
Place the bolts temporarily fixed to the top unit in the groove of the coupling and turn completely in the direction of the arrow. Then tighten the bolts firmly.
7 Attach the two supplied bolts to the screw holes of the coupling and tighten them.
8 Hook the fall-prevention wire of the camera on the hole of the wire bracket.
9 Align the respective triangular marks of the camera and top unit and push the camera into the top unit. Then turn the camera completely in the direction of the arrow.
10 Attach the camera to the top unit using the three bolts which were removed in step 3.
11 Place the supplied waterproof covers on the tightened bolts.
12 Separate the provided top sunshade and reattach the separated parts above the camera to return the top sunshade to its original form.

Note

Run the fall-prevention wire through the top sunshade.

13 Align the respective triangular marks of the camera and top sunshade and push the top sunshade into the camera. Then turn the sunshade completely in the direction of the arrow.
14 Secure the camera and top sunshade using the screw on the top sunshade.

Note

Please make sure to attach the top sunshade. The top sunshade prevents the device from overheating in direct sunlight.

How to install the wireless LAN F

The optional Wireless Card (SNCA-CFW5*), Wireless LAN Antenna (SNCA-AN1) and Outdoor Antenna Cable Kit (SNCA-CW5) is required to use the wireless LAN.
* SNCA-CFW5 is not available in some countries and areas. For details, contact your authorized Sony dealer.

1 Remove the top unit following Step 3 of "How to install the camera."
2 Remove a screw on the top unit and remove the washer, hiding cover and the O-ring.

Note

The removed parts are needed for removing the inner cable of the Antenna Cable Kit. Keep the parts safe, as the loss of the part(s) will impair the waterproofing characteristic.

3 Attach the inner cable of the Outdoor Antenna Cable Kit (SNCA-CW5) to the top unit and tighten it with washer and nut supplied with the cable.

Note

Make sure to tighten the nut; if the nut loosens it will impair the waterproofing characteristic.

4 Insert the Wireless Card into the card slot of the camera properly.

Note

Inserting the Wireless Card diagonally may damage the internal components. The Wireless Card should be inserted perpendicularly.

5 Connect the MMCX connector of the Outdoor Antenna Cable Kit to the connector of the Wireless Card. Then attach the camera to the top unit following Step 10 of "How to install the camera."

Note

Make sure the cable does not get caught between the camera and the top unit.

Removing the camera

1 Remove the one screw that secures the top sunshade to the camera in Step 14 of "How to install the camera" to remove the top sunshade.
2 Remove the waterproof covers and three bolts fixed in Step 10 and 11 of "How to install the camera."
3 Turn the top unit to the position where the respective triangular marks of the camera and top unit align, and pull the camera out downwards.
4 Remove the fall-prevention wire of the camera from the hole of the wire bracket.

Connection

Connecting to the Network G

Connect the LAN port of the camera unit to a router or hub in the network using the network cable (straight, not supplied).

To connect to a computer

Connect the LAN port of the camera unit to the network connector of a computer using the network cable (cross, not supplied).

Connecting the Power Source G

- Ensure safe and secure power supply preparation.
- The minijacks and plug are non-lock connectors. After completely inserting the connector, secure them with plastic tape and the like to prevent the connectors from disconnected.
- Other connectors are lock type. Make sure you insert them completely.
- The BNC connector is a rotational lock type.

Connect the cable of the 24 V AC power supply system to the power input terminal (pin 1 and pin 3) of the camera.

- Take measures to ensure 24 V AC under a maximum current of 4 A.
  – In the USA, The product shall be powered by a UL Listed Class 2 Power Supply Only.
  – In Canada, The product shall be powered by a CSA Certified Class 2 Power Supply Only.
- Use the UL cable (VW-1 style 10368) for 24 V AC connection.

Note

Always connect pin 2 (center) to the ground terminal.

Recommended power cable

Power supply at 24 V AC

Size: AWG	AWG22	AWG20	AWG18	AWG16
Maximum length (m (feet))	5 (16.4)	8 (26.2)	15 (49.2)	21 (68.9)

Pin alignment of I/O cable (supplied)

Serial communicable In/Out (5 pin)

Pin No.	Pin name: RS232C	Pin name: RS422/RS485 (Full)	Pin name: RS485 (Half)	Color
1		Rx–		Yellow
2	Rx	Rx+		Orange
3	Tx	Tx–	Tx–/Rx–	Red
4		Tx+	Tx+/Rx+	Brown
5	GND			Black

Alarm In/Out (9 pin)

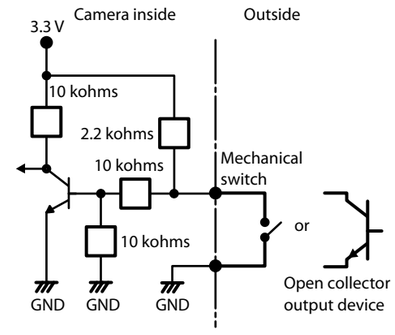
Pin No.	Pin name	Color
1	Alarm out 2–	Purple
2	Alarm out 2+	Purple
3	Alarm out 1–	Blue
4	Alarm out 1+	Blue
5	Sensor in 4	Yellow
6	Sensor in 3	Orange
7	Sensor in 2	Red
8	Sensor in 1	Brown
9	GND	Black

Note

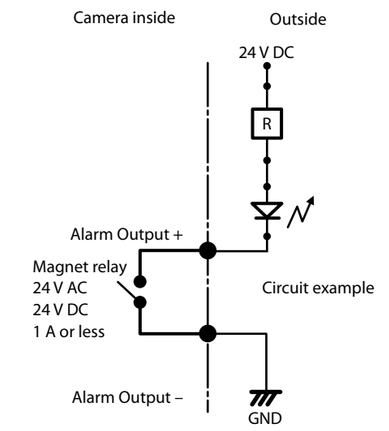
For details about functions and settings, see the user's guide in the supplied CD-ROM.

Wiring diagram for sensor input

Mechanical switch/open collector output device



Wiring diagram for alarm output



Specifications

Network

Protocol	TCP/IP, ARP, ICMP, HTTP, FTP (server/client), SMTP (client), DHCP (client), DNS (client), NTP (client), SNMP (MIB-2), RTP/RTCP

Compression

Video compression format	JPEG/MPEG4/H.264
Audio compression format	G.711/G.726 (40,32,24,16 kbps)
Maximum frame rate	SNC-RH164: JPEG/MPEG4/H.264: 30 fps (1280 × 720) SNC-RS86N/RS86P/RS84N/RS84P: JPEG/MPEG4/H.264: 30 fps (720 × 480)

Camera

Camera system	SNC-RH164: Camera HD (720P) SNC-RS86N/RS86P/RS84N/RS84P: Camera SD
Signal system	SNC-RH164: NTSC colour/PAL colour switching system SNC-RS86N/RS84N: NTSC colour system SNC-RS86P/RS84P: PAL colour system
Image device	SNC-RH164: 1/3 type CMOS SNC-RS86N/RS86P/RS84N/RS84P: 1/4 type interline transfer CCD Effective picture elements SNC-RH164: Approx. 2 million SNC-RS86N/RS84N: Approx. 380,000 (NTSC) SNC-RS86P/RS84P: Approx. 440,000 (PAL)
Synchronisation system	SNC-RH164: Internal synchronisation system SNC-RS86N/RS86P/RS84N/RS84P: Internal/Power synchronisation switching
Minimum illumination	SNC-RH164: 2.1 lx (F1.8/AGC ON/50 IRE (IP)) SNC-RS86N/RS86P: 0.75 lx (F1.6/AGC ON/50 IRE (IP)) SNC-RS84N/RS84P: 0.44 lx (F1.4/AGC ON/50 IRE (IP))
Horizontal resolution	SNC-RH164: 480 TV (analogue video output) SNC-RS86N/RS86P/RS84N/RS84P: 530 TV (analogue video output)
Video S/N (AGC 0 dB)	50 dB or more

Lens

Focus distance	SNC-RH164: 5.1 mm to 51 mm SNC-RS86N/RS86P: 3.4 mm to 122.4 mm SNC-RS84N/RS84P: 4.1 mm to 73.8 mm
Maximum	SNC-RH164: F1.8 (wide), F2.1 (tele) SNC-RS86N/RS86P: F1.6 (wide), F4.5 (tele) SNC-RS84N/RS84P: F1.4 (wide), F3.0 (tele)
Minimum object distance	SNC-RH164: 10 mm (wide) to 800 mm (tele) SNC-RS86N/RS86P: 320 mm (wide) to 1500 mm (tele) SNC-RS84N/RS84P: 290 mm (wide) to 800 mm (tele)

Mechanism

Pan	360°, endless rotation Maximum speed: 400°/s
Tilt	210° (with auto invert function) Maximum speed: 400°/s

Interface

Network port	10BASE-T/100BASE-TX, auto negotiation (RJ-45)
I/O port	Sensor input: × 4, make contact Alarm output: × 2, 24 V AC/DC, 1 A (mechanical relay outputs electrically isolated from the camera)
Video output	VIDEO OUT: BNC, 1.0 Vp-p, 75 ohms, unbalanced, sync negative
CF card slot	CF Type I/II
Microphone input	Minijack (monaural) Plug-in-power supported (rated voltage: 2.5 V DC) Recommended load impedance 2.2 khoms * A selector menu allows switching between microphone input and line input
Line input	Minijack (monaural) Recommended load impedance 10 kohms * A selector menu allows switching between microphone input and line input
Line output	Minijack (monaural), Maximum output level: 1 Vrms

Others

Power supply	24 V AC ± 10%, 50 Hz/60 Hz
Power consumption	SNC-RH164: Max. 80 W SNC-RS86N/RS86P/RS84N/RS84P: Max. 78 W
Operating temperature	–40°C to +50°C (–40°F to +122°F)
Storage temperature	–20°C to +60°C (–4°F to +140°F)
Operating humidity	10% to 90% (Ensure no condensation)
Storage humidity	10% to 90%
Dimensions H (Diameter/Height)	ø238 mm × 344 mm (ø9 3/8 inches × 13 5/8 inches) (without the projecting parts)
Mass	Approx. 4.3 kg (9 lb 8 oz)
Supplied accessories	Top sunshade (1) Coupling (1) Wire fixing belt (1) Bolts (4) Connection harness 5-pin (1) Connection harness 9-pin (1) Installation manual (1 set) CD-ROM (User's Guide, supplied programs) (1) Waterproof covers (3)

Optional accessories

Wireless Card	SNCA-CFW5*
Wireless LAN Antenna	SNCA-AN1
Outdoor Antenna Cable Kit	SNCA-CW5

* SNCA-CFW5, SNCA-AN1 and SNCA-CW5 are not available in some countries and areas. For details, contact your authorized Sony dealer.

Design and specifications are subject to change without notice.

Recommendation of Periodic Inspections

In case using this device over an extended period of time, please have it inspected periodically for safe use.
It may appear flawless, but the components may have deteriorated over time, which may cause a malfunction or accident.
For details, please consult the store of purchase or an authorized Sony dealer.