

Network Camera

Installation Manual

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

PELA ExwavePRO

SNC-DM160 SNC-DS60

http://www.sony.net/

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Owner’s Record

The model and serial numbers are located on the bottom. Record these numbers in the spaces provided below.
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 on the ceiling or the wall:
After the installation, ensure the connection is capable of supporting four times the weight of the equipment downwards.

CAUTION

The rating label is located on the bottom.

CAUTION for LAN port

For safety reason, do not connect the LAN port to any network devices that might have excessive voltage.
The LAN port of this unit is to be connected only to the devices whose power feeding meets the requirements for SELV (Safety Extra Low Voltage) and complies with Limited Power Source according to IEC 60950-1 Second Edition.

Power Supply

Caution for U.S.A. and Canada

The SNC-DM160/DS60 operates on 24V AC or 12V DC.
The SNC-DM160/DS60 automatically detects the power.

Use a Class 2 power supply which is UL Listed (in the U.S.A.) or CSA-certified (in Canada).

Caution for other countries

The SNC-DM160/DS60 operates on 24V AC or 12V DC.
The SNC-DM160/DS60 automatically detects the power.
Use a power supply rated 24 V AC or 12 V DC 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.

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 or Part 15 of FCC Rules.

For customers in Canada

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, 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

If you find condensation when you open the package, turn on the power after leaving it out for about 60 minutes.

Data and security

- 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. 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.
- 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

Do not shoot an extremely bright object (an illumination, the sun, etc.). Also, avoid operating or storing the camera in the following locations, as these can be a cause of a malfunction.

- Extremely hot or cold places (Operating temperature: –30°C to +50°C [–22°F to 122°F])
- Close to heating equipment (e.g., near heaters)
- Close to sources of strong magnetism
- Close to sources of powerful electromagnetic radiation, such as radios or TV transmitters
- Locations subject to strong vibration or shock
- Dusty locations
- Locations under the influence of fluorescent light or reflection of a window
- Under an unsteady light (the image will flicker).

Using in cold climates

This device is equipped with a built-in heater which automatically operates when the internal temperature drops significantly low. However, the heater may not defrost snow and frost attached on the dome cover under certain environment condition.

Operating temperature

Be sure to turn the power on from 0°C to 50°C (32°F to 122°F).
When the power is on, the built-in heater enables the camera unit to operate from –30°C to +50°C (–22°F to +122°F).

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.

Cleaning

- Use a blower to remove dust from the lens.
- 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.

To install the camera outdoors

Attach the dome casing securely to the unit casing.
Make sure you seal the locations listed below with sealant (e.g. silicon sealant) to prevent moisture from getting inside the casing.
- Camera installation holes (4)
- Conduit holes (side/bottom)

Note on laser beams

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

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.

Phenomena Specific to CCD Image Sensors

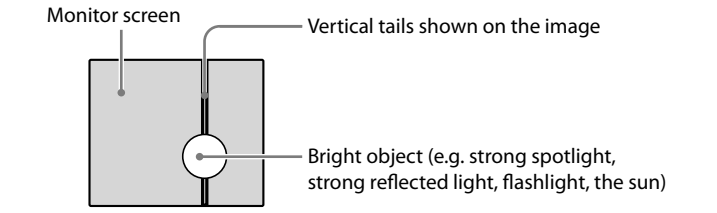
The following phenomena that may appear in images are specific to CCD (Charge Coupled Device) image sensors. They do not indicate malfunctions.

White flecks

Although the CCD 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 CCD 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

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.

Easy Setup Guide for the Sony Network Camera (stored in the CD-ROM)

The Easy Setup Guide shows you how to set up the camera in order to view the image shot by the camera on a computer.
After installing and connecting the camera following the Installation Manual, perform setup using the Easy Setup Guide.

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. Operate the camera referring to the User’s Guide.

Using the CD-ROM Manuals

The supplied CD-ROM disc includes the User’s Guides and Easy Setup Guides for this unit in PDF format.

Preparations

The Adobe Reader Version 6.0 or higher must be installed on your computer in order to use the guides 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.

Location and Function of Part

The figure shows the camera without the dome casing and the slit cover.

Side

Cables ❶, ❷ and ❸ are not connected when the unit comes from the factory.

❶ Audio cable (supplied)

The connector with the longer cable (SP) is used for the line output connector, and the shorter cable (MIC) is used for the microphone/line input connector.

❷ I/O (Input/Output) cable (supplied)

This cable is provided with a sensor input and two alarm outputs.
The wires of the cable control the following signals.

Color of wire	Name
Red	Sensor In +
White	Sensor In – (GND)
Black	Alarm Out 1 +
Yellow	Alarm Out 1 –
Brown	Alarm Out 2 +
Green	Alarm Out 2 –

For details on each function and required settings, see the User’s Guide stored in the supplied CD-ROM.

For the wiring, see “Connecting the I/O cable.”

❸ Wiring slit

Feed the wire rope through this.

For details, see “Installing the Camera” on the reverse side.

❹ Camera head holder

❺ Lens

❻ LAN cable (RJ-45) (supplied and connected to the camera at the factory)

Connect this cable to a hub or computer on the 10BASE-T or 100BASE-TX network using a network cable (UTP, category 5).

❼ Power input cable (supplied and connected to the camera at the factory)

Connect this cable to a 24 V AC or 12 V DC power supply system.
You can screw an extension cable in the connector tip attached at the end of the cable.

❶ BNC cable (supplied)

Outputs a composite video signal.

❷ Conduit holes (2 1/4 inch)

Connect a pipe to this hole. There are two conduit holes on the unit casing, one on the side and one at the bottom. The cover plug is installed in the side conduit hole at the factory. Remove the plug as needed and connect the pipe to the hole.

❸ Lens ring fixing screw

Loosen this screw before adjusting the zoom and focus, and tighten it to fix the lens position. The screw can be inserted at one of three points.

❹ Zoom ring

Turn this ring to adjust the angle of view.

❺ Focus ring

Turn this ring to adjust the focus.

Inside

❶ Camera unit

❷ LAN port

Connect the supplied LAN cable.

❸ AC / DC IN (power input) connector

Connect the supplied power input cable to this connector.

❹ EXT CTRL (external control input/output) connector

Connect the supplied I/O cable to this connector.

❺ POWER indicator (green)

When the power is supplied to the camera, the camera starts checking the system. If the system is normal, this indicator lights up.

❻ NETWORK indicator (green)

The indicator flashes in green when the camera is connected to the network. The indicator goes off when the camera is not connected to the network.

❼ VIDEO OUT (video output) indicator

The indicator shows the camera operation mode according to the VIDEO OUT selector setting. It goes off in IP mode, lights in green in NTSC+IP mode and lights in orange in PAL+IP mode.

❹ Camera installation hole (4 positions)

Make sure to tighten the screws securely when installing the camera.

❺ MONITOR output jack

Connect this jack to a video input connector of a video monitor. You can adjust the camera or lens while looking at the image on the video monitor. After adjusting the camera or lens, disconnect the cable.

❹ VIDEO OUT (video output) connector

Connect the supplied BNC cable to this connector.

❹ AUDIO connector

Connect the supplied audio cable to this connector.

❹ AUDIO IN (audio input) selector

Select the level of the audio signal to be input to the microphone/line input connector.

LINE: line input level

MIC: microphone input level

The factory default setting is MIC.

❹ IRIS selector

Use this selector when adjusting the focus of the lens.

Each time you press the selector button, the iris of the lens switches between open and normal. (The factory default setting is normal.)

When the iris is set to open, the IRIS OPEN indicator and the focus assist indicator appear on a monitor screen. When the VIDEO OUT selector is set to the NTSC+IP or PAL+IP mode, the indicators are displayed on the monitor connected to the MONITOR jack or VIDEO OUT connector. When it is set to the IP mode, the indicators are displayed on the monitor of the computer.

For details, see “Focus Assist Function” on the reverse side.

❹ VIDEO OUT selector

Each time you press the selector button, the camera operation mode switches from IP mode to NTSC+IP mode to PAL+IP mode cyclically, and the VIDEO OUT indicator shows the selected mode. (The factory default setting is IP mode.)

When adjusting the field of view using a video monitor, select the appropriate video signal with this selector.

IP mode: The video signal is not output from the MONITOR jack or VIDEO OUT connector. (VIDEO OUT indicator: off)

NTSC+IP mode: The NTSC video signal is output from the MONITOR jack and VIDEO OUT connector. (VIDEO OUT indicator: lights in green)

PAL+IP mode: The PAL video signal is output from the MONITOR jack and VIDEO OUT connector. (VIDEO OUT indicator: lights in orange)

Note

In NTSC+IP or PAL+IP mode, the video and audio signals can be output to a computer via a LAN although there are certain restrictions. For details of the restrictions, see the User’s Guide.

❹ Reset switch

To reset the camera to the factory default settings, hold down this switch with a point and supply the power to the camera.

❹ Camera head fixing screw

First loosen the screw and face the camera head to the desired direction, then tighten the screw to fix it.

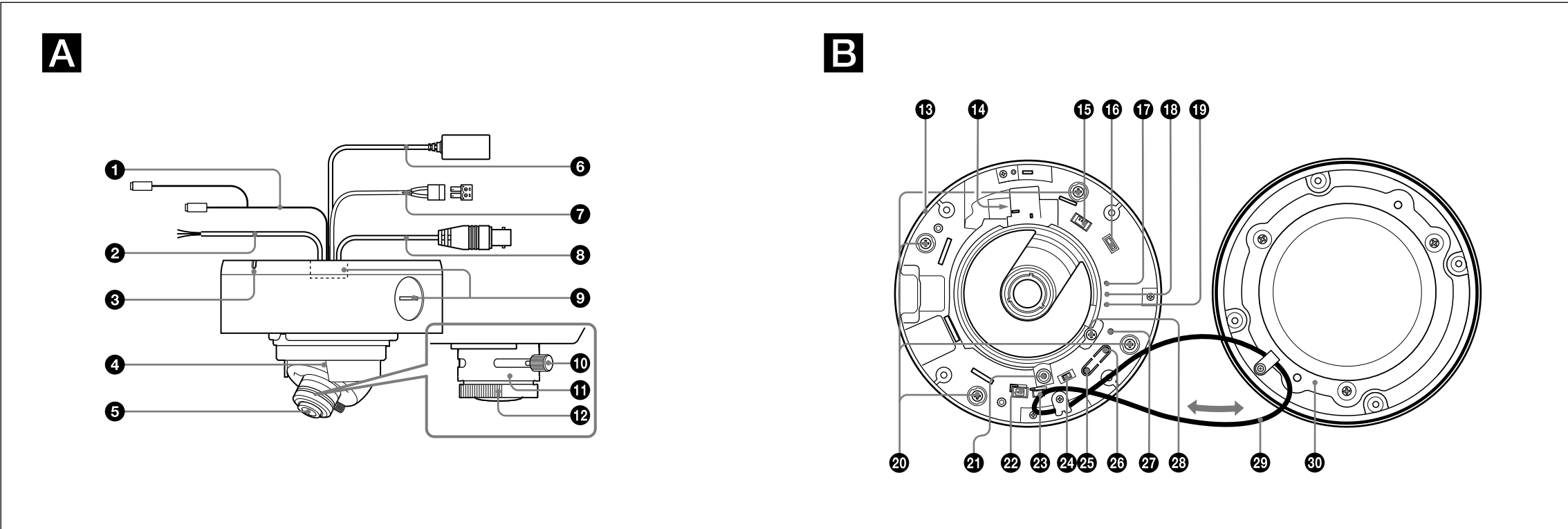
❹ Safety cord

This cord prevents the dome casing from falling off the unit casing.

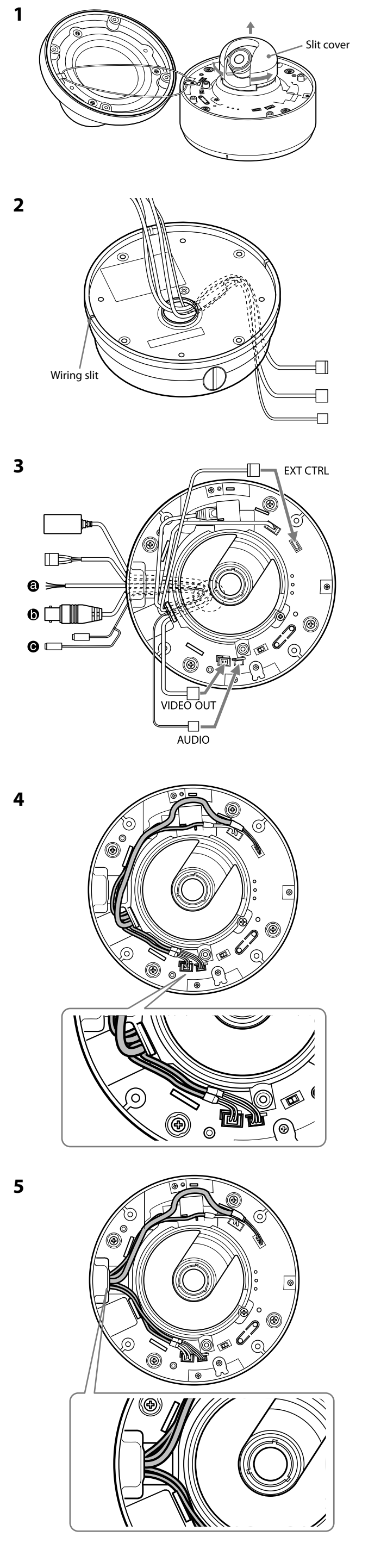
❹ Dome casing

The dome cover is made of polycarbonate. A waterproof rubber gasket is provided on the joint surface to the unit casing.

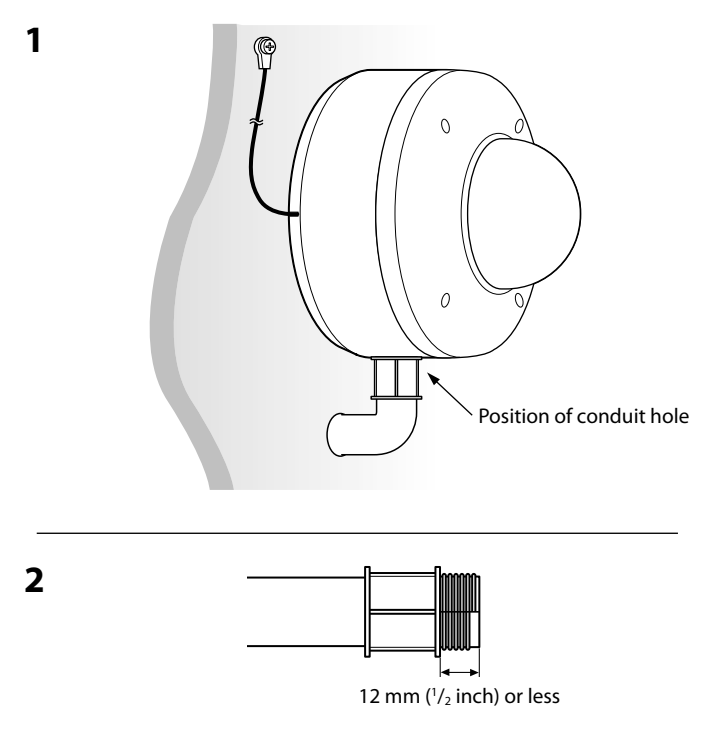
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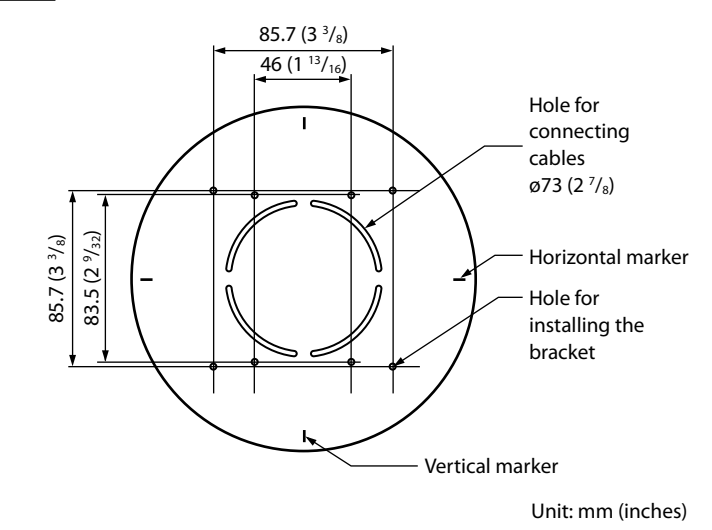
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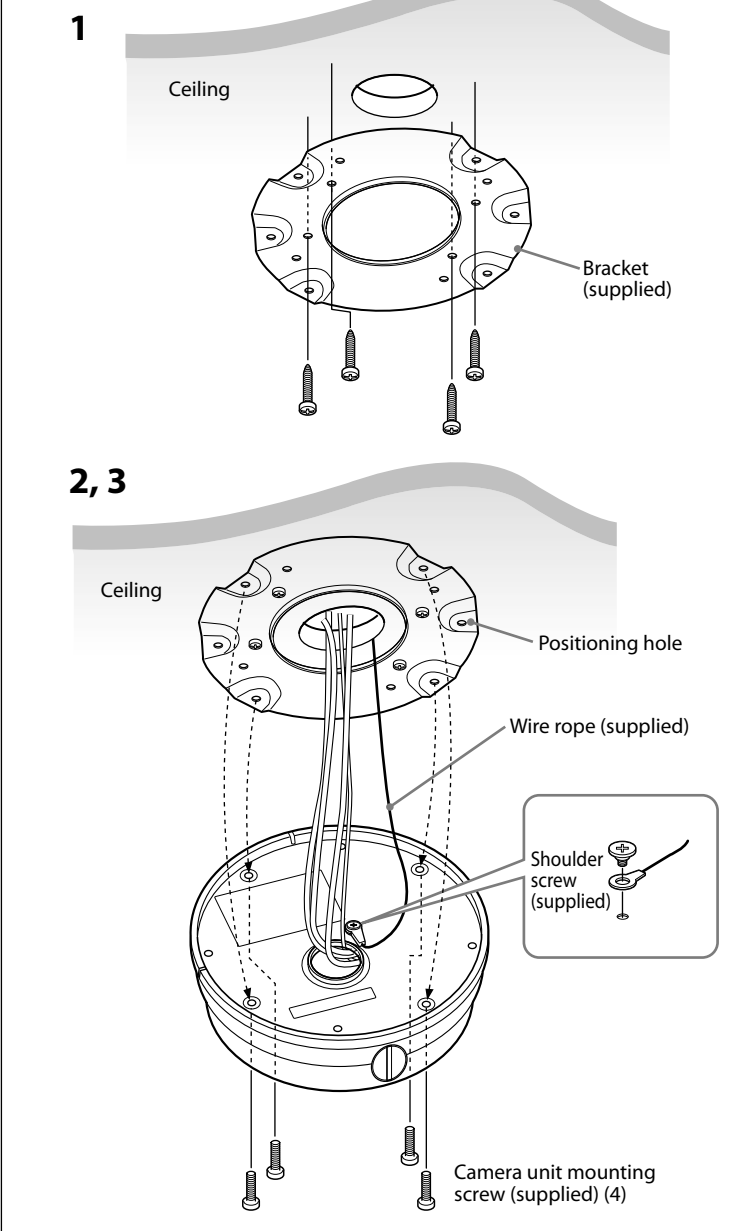
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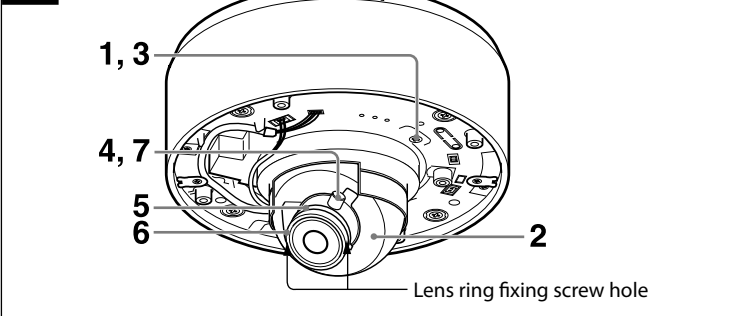
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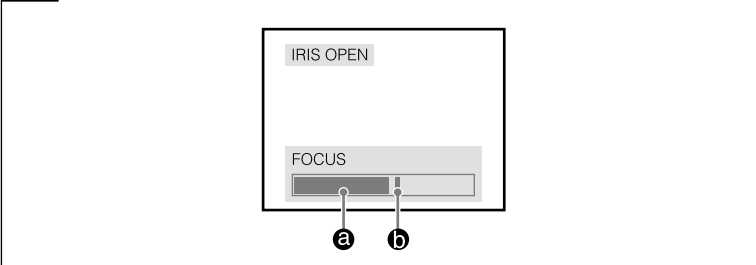
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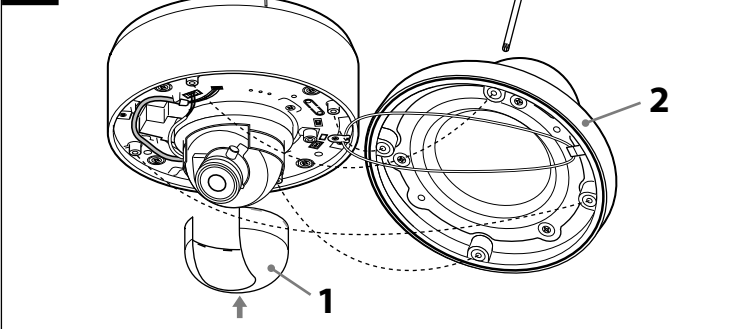
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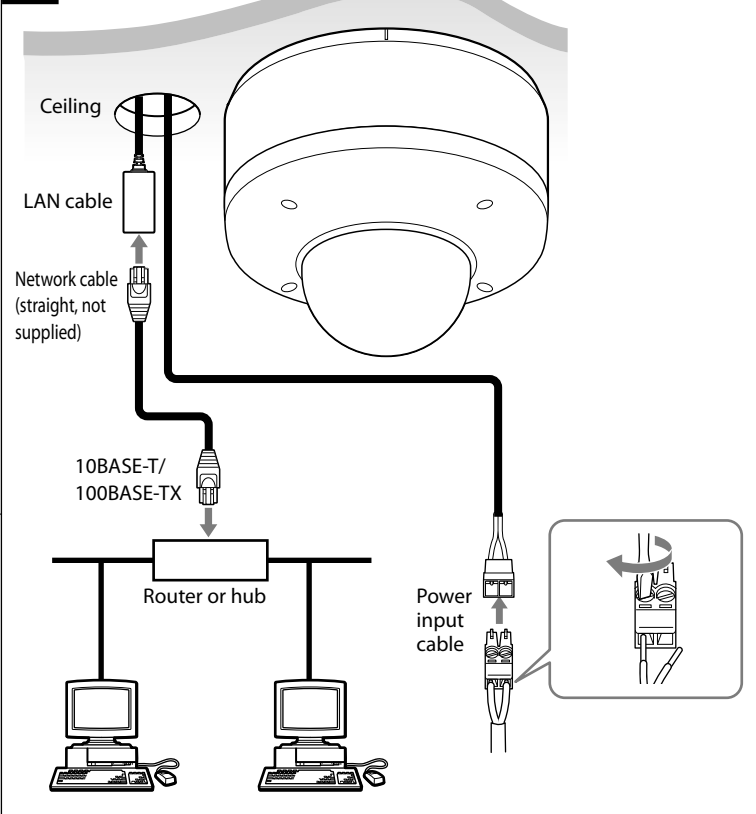
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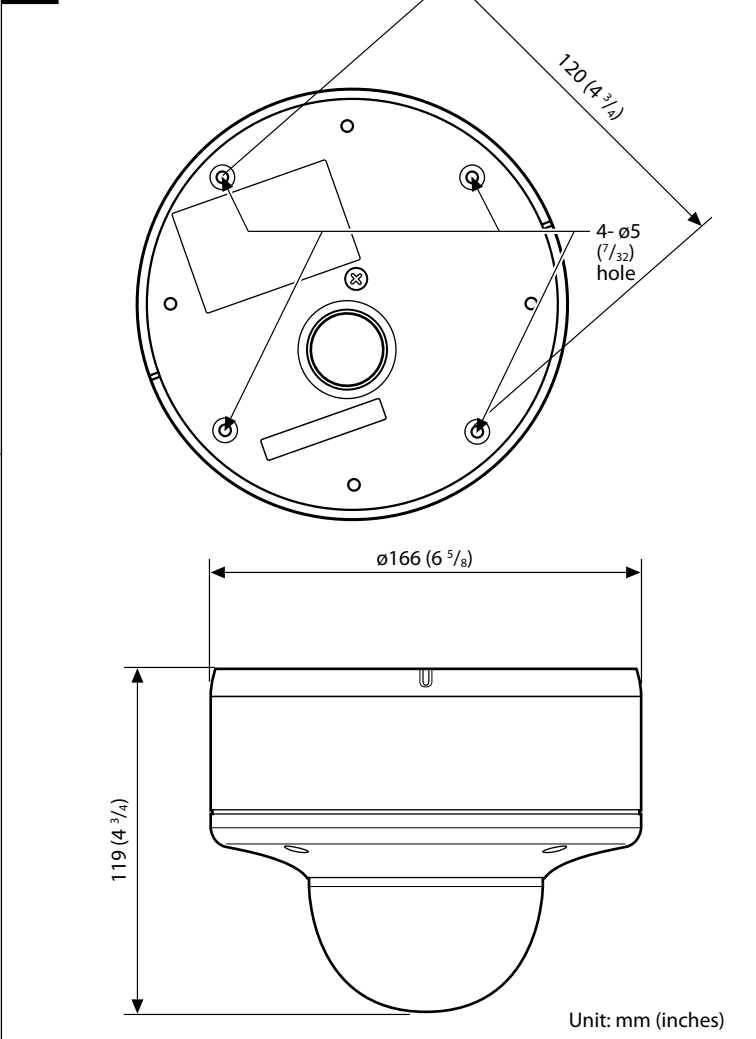
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Preparations

Connecting the Cables to the Camera

Before installation, connect the supplied cables to the camera as required for your usage and wire them.

- Remove the dome casing and slit cover.**
Loosen the four fixed screws of the dome casing using the supplied wrench and lift the dome casing. Then, remove it by expanding the slit cover.
- Pass the cables through the conduit hole on the bottom of the camera unit.**
When you route the cables from the side of the camera unit, see "Connecting to the side conduit hole".
- Connect the cables to the connectors on the camera unit.**
 - I/O cable: to EXT CTRL connector
 - BNC cable: to VIDEO OUT connector
 - Audio cable: to AUDIO connector
- Pass the cables through the guides to secure the cables. (G-4)**
- Pull the cables gently from the bottom of the camera unit to take in the slack.**

Connecting to the side conduit hole

The cables are set up at the factory to pass through the bottom conduit hole. If you want to use the side conduit hole, perform the following steps:

- Remove the conduit hole cover.
- Disconnect the cables from the connectors, and pull them out from the bottom conduit hole.
- Insert the cables through the side conduit hole, and connect the cables to their respective connectors.
- Pass the cables through the guides to secure the cables. (G-5)
- Attach the conduit hole cover that was removed from the side conduit hole to the bottom conduit hole.

Notes

- If the bottom conduit hole is dirty, the conduit hole cover cannot be fixed firmly. In this case, moisture may leak into the casing and this may cause a malfunction. Wipe off the dust with a soft cloth, and fix the conduit hole cover firmly.
- Cover the joint part of the pipe/cover with silicon sealant, etc. to prevent moisture from getting inside the casing.
- When you install the camera on a wall lengthwise, position the side conduit hole directly below to prevent moisture from getting inside the casing. (D-1)
- Use a pipe/plug with a thread length of 12 mm (1/2 inch) or less so that it does not damage the camera. (D-2)

Installation

WARNING

- If you attach the camera in the height such as the wall or the ceiling, etc., entrust the installation to an experienced contractor or installer.
- If you install the camera at a height, ensure that the installation location and its material are strong enough to withstand a weight of 15 kg (33 lb 11 oz) or more, and then install the camera securely. If they are not strong enough, the camera may fall and cause serious injury. If the ceiling is not strong enough, the camera may fall and cause serious injury.
- To prevent the camera from falling, make sure to attach the supplied wire rope.
- If you attach the camera to the ceiling, check periodically, at least once a year, to ensure that the connection has not loosened. If conditions warrant, make this periodic check more frequently.

Deciding the Installation Location of the Camera

After deciding the direction in which the camera will shoot, make the required hole (ø 73 mm (2 7/8 inches)) for the connecting cables using the supplied template. Then decide the four mounting hole positions to install the bracket.

Mounting screws

The supplied bracket is provided with eight ø 4.5 mm (7/16 inch) mounting holes. Install the bracket on a ceiling or wall with screws through four mounting holes: two 83.5 mm (3 3/8 inch)-pitched holes or four 85.7 mm (3 3/8 inch)-pitched holes. The required mounting screws differ depending on the installation location and its material. (Mounting screws are not supplied.)

Steel wall or ceiling: Use M4 bolts and nuts.
Wooden wall or ceiling: Use M4 tapping screws. The panel thickness must be 15 mm (5/8 inch) or more.
Concrete wall: Use anchors, bolts and plugs suitable for concrete walls.
Junction box: Use screws to match the holes on the junction box.

WARNING

The required mounting screws differ depending on the installation location and its material. If you do not secure the camera with the appropriate mounting screws, the camera may fall off.

Installing the Camera

- Install the supplied bracket on the ceiling or wall.**
Refer to "Mounting screws" for screws to be used.
- Fix the supplied wire rope to the camera unit and the ceiling or wall.**
 - Fix the wire rope with the supplied shoulder screw to the hole for the wire rope on the bottom of the camera unit.
 - Fix the wire rope to the ceiling or wall.
When you install the camera on a wall, feed the cables through it. (D-1)
- Attach the camera unit to the bracket with the supplied four screws.**
The screws have a fall-prevention mechanism. The screws inserted into the screw holes of the camera unit do not fall even if you turn the camera unit upside down.
Turn the camera unit to click and fix one of the projections on the bottom of the camera to the positioning hole of the bracket. There are four projections with an angle of 90 degrees, so you can select one of four directions.

Note

If you cannot use screws on a ceiling or wall, or if you want to make the camera less conspicuous, use the YT-ICB45 in-ceiling bracket (optional) with which you can mount the camera on the ceiling.

Adjusting the Camera Direction and Coverage

- Loosen the camera head fixing screw.**
- Adjust the camera to turn the lens in the desired direction.**
- Tighten the camera head fixing screw to fix the camera.**
- Loosen the lens ring fixing screw.**
- Turn the zoom ring to adjust the angle of view.**
- Turn the focus ring to adjust the focus.**
For easy focus adjustment, use the focus assist indicator that is displayed on the monitor screen. See "Focus Assist Function" below.
- Tighten the lens ring fixing screw to fix the zoom and the focus.**
- Repeat steps 1 to 7 until the coverage and the focus are determined.**

Notes

- When you adjust the camera head angle without loosening camera head fixing screw, an internal part may be damaged.
- If the camera head is too heavy to be adjusted, loosen the camera head fixing screw until it moves freely.
- When the lens is not put in the slit of the camera head holder, the moving range of the camera head is limited.
- Do not turn the lens more than 360 degrees, as this may damage the wiring inside.
- There are three screw holes for fixing the lens ring at 120 degree intervals. If the lens ring fixing screw poses a problem for adjusting the camera direction and coverage due to the direction of the camera head, detach the screw and reattach it to another screw hole, then adjust the camera direction and coverage again.
- When adjusting the angle, be sure that the TOP mark on the camera head section faces the ceiling. If the camera is installed with the TOP mark facing the floor, the image appears upside down.

Focus Assist Function

- Select the camera operation mode to match the video monitor in use with the VIDEO OUT selector.**
- Set the iris to open with the IRIS selector.**
The IRIS OPEN indicator and the focus assist indicator appear on the monitor screen.
The length of bar ➊ varies according to the degree of focus adjustment. Bar ➋ indicates the peak hold value.
- Turn the focus ring until bar ➋ reaches the peak hold value ➋.**

Attaching the Dome Casing

- Attach the slit cover.**

Notes

- The proper position of the slit cover is slightly apart from the camera mount. Do not push in by force.
- If you cannot attach the slit cover because the barrier of the lens ring fixing screw prevents it, attach the lens ring fixing screw to another screw hole. There are three screw holes for the lens ring fixing screw on the concentric circle.

2 Fix the dome casing and the camera unit.

Align four screw holes on the dome casing with that on the camera unit, and tighten four screws with the supplied wrench to secure the dome casing.

Note

Make sure that the cord does not get caught between the dome casing and the unit casing. Rotate the cord and adjust the position of the cord.

Connection

Connecting to the Network

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

To connect to a computer

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

Connecting the Power Source

There are three ways to supply the power source to this camera, as follows.

- 12 V DC
- 24 V AC
- Power supply equipment pursuant to IEEE802.3af (PoE* system)

*PoE means Power over Ethernet.

Note

If the power is supplied from the power input cable and LAN cable at the same time, the power from the LAN cable has priority over the other.

Connecting to 12 V DC or 24 V AC source

- Connect the power input cable of the camera to a 12 V DC or 24 V AC source.
- Use a 12 V DC or 24 V AC source isolated from 100 to 240 V AC. Each usable voltage ranges are as follows.
 - 12 V DC: 10.8 V to 13.2 V
 - 24 V AC: 21.6 V to 26.4 V
 - Use UL cable (VW-1 style 1007) for these connections.

Connecting to the power supply equipment pursuant to IEEE802.3af

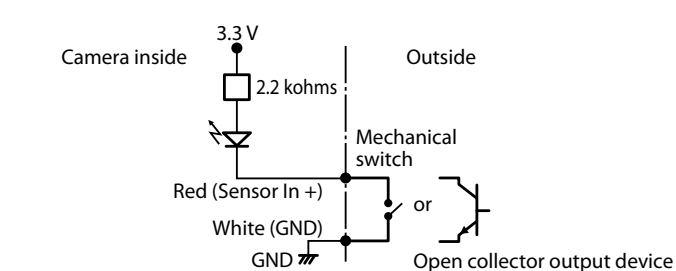
The power supply equipment pursuant to IEEE802.3af supplies the power through the LAN cable. For details, refer to the Instruction Manual of the equipment.

Connecting the I/O Cable

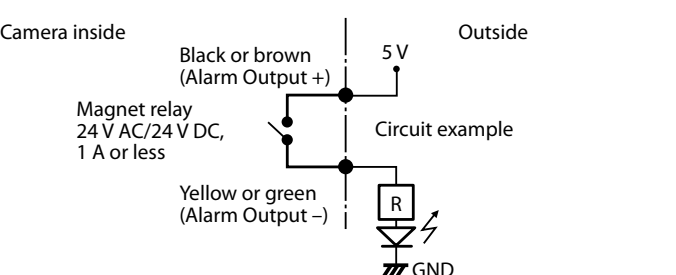
Connect the wires of the I/O cable as follows:

Wiring diagram for sensor input

Mechanical switch/open collector output device



Wiring diagram for alarm output



Specifications

Compression	
Video compression format	JPEG/MPEG4
Audio compression format	G.711/G.726 (40, 32, 24, 16 kbps)
Maximum frame rate	30 fps
Camera SNC-DM160	
Signal system	NTSC color system/PAL color system (switchable)
Image device	1/3 type interline transfer (ExwavePRO) CCD Total picture elements: Approx. 1,320,000 Effective picture elements: Approx. 1,250,000
Synchronization	Internal synchronization
Horizontal resolution	600 TV lines (analog video)
Video S/N (AGC 0 dB)	50 dB or more
Minimum illumination (F1.3, 50 IRE)	Color: 0.4 lx (AGC 30 dB, normal readout), 0.1 lx (AGC 36 dB, Light funnel ON) Black & White: 0.08 lx (AGC 30 dB, normal readout), 0.01 lx (AGC 36 dB, Light funnel ON)

Camera SNC-DS60	
Signal system	NTSC color system/PAL color system (switchable)
Image device	1/4 type interline transfer (ExwavePRO) CCD Total picture elements: Approx. 350,000 Effective picture elements: Approx. 330,000
Synchronization	Internal synchronization
Horizontal resolution	400 TV lines (analog video)
Video S/N (AGC 0 dB)	50 dB or more
Minimum illumination (AGC 36 dB, F1.3, 50 IRE)	Color: 0.15 lx, Black & White: 0.01 lx

Lens (standard equipment of SNC-DM160)	
Focal length	2.8 mm to 10 mm
Maximum relative aperture	F1.3
View angle	Vertical: 73.9° to 20.8°, Horizontal: 100.8° to 27.7°
Minimum object distance	300 mm (11 7/8 inches)

Lens (standard equipment of SNC-DS60)	
Focal length	2.8 mm to 10 mm
Maximum relative aperture	F1.3
View angle	Vertical: 54.7° to 15.6°, Horizontal: 73.9° to 20.8°
Minimum object distance	300 mm (11 7/8 inches)

Interface

LAN port	10BASE-T/100BASE-TX, auto negotiation (RJ-45)
I/O port	Sensor input : × 1, make contact, break 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
Microphone input*	Minijack (monaural) Plug-in-power supported (rated voltage: 2.5 V DC)
Line input*	Minijack (monaural) * The microphone input and the line input are switchable with a selector.
Line output	Minijack (monaural), Maximum output level: 1 Vrms

Others

Power supply	12 V DC ± 10%, 24 V AC ± 10%, 50/60 Hz, IEEE802.3af compliant (PoE system)
Power consumption	12.9 W max.
Operating temperature	When power is on: 0°C to 50°C (32°F to 122°F) When applying current: -30°C to +50°C (-22°F to +122°F)
Storage temperature	-20°C to +60°C (-4°F to +140°F)
Operating humidity	20% to 80% (Non-condensing)
Storage humidity	20% to 95%
Dimensions (diameter/height)	166 mm × 119 mm (6 5/8 inches × 4 3/4 inches), not including the projecting parts

Mass	Approx. 1.45 kg (2 lb 21 oz), not including the cables and bracket
Supplied accessories	CD-ROM (User's Guides, Easy Setup Guides and supplied programs) (1), Bracket (1), Template (1), Wire rope (1), Camera unit mounting screws (4), Shoulder screw M4 (1), Wrench (1), Audio cable (1), I/O cable (1), LAN cable (1), BNC cable (1), Power input cable (1), Installation Manual (this document) (1 set), B&P Warranty Booklet (1)

Optional accessory

In-ceiling bracket YT-ICB45

Design and specifications are subject to change without notice.