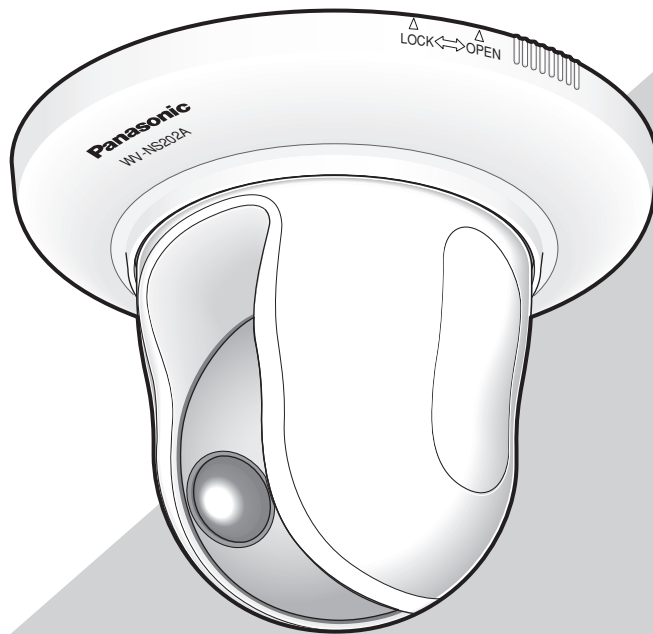


Panasonic®

Network Camera Installation Guide

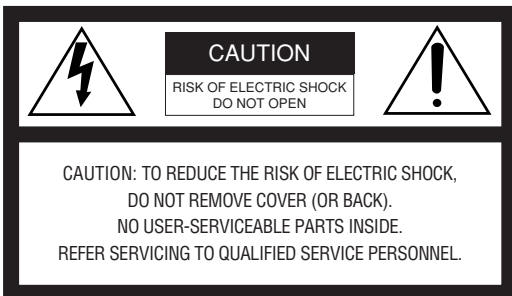
Model No. **WV-NS202A**



Before attempting to connect or operate this product,
please read these instructions carefully and save this manual for future use.

WARNING:

- This apparatus must be earthed.
- To prevent fire or electric shock hazard, do not expose this apparatus to rain or moisture.
- The apparatus should not be exposed to dripping or splashing and that no objects filled with liquids, such as vases, should be placed on the apparatus.
- All work related to the installation of this product should be made by qualified service personnel or system installers.
- The connections should comply with local electrical code.



SA 1965

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



SA 1966

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

For Canada

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

For U.S.A

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.

FCC Caution: To assure continued compliance, (example - use only shielded interface cables when connecting to computer or peripheral devices). Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

The serial number of this product may be found on the surface of the unit.

You should note the serial number of this unit in the space provided and retain this book as a permanent record of your purchase to aid identification in the event of theft.

Model No. _____

Serial No. _____

Important safety instructions

- 1) Read these instructions.
- 2) Keep these instructions.
- 3) Heed all warnings.
- 4) Follow all instructions.
- 5) Do not use this apparatus near water.
- 6) Clean only with dry cloth.
- 7) Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
- 8) Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
- 9) Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
- 10) Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
- 11) Only use attachments/accessories specified by the manufacturer.
- 12) Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.



- 13) Unplug this apparatus during lightning storms or when unused for long periods of time.
- 14) Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

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- (3) UNAUTHORIZED DISASSEMBLE, REPAIR OR MODIFICATION OF THE PRODUCT BY THE USER;
- (4) INCONVENIENCE OR ANY LOSS ARISING WHEN IMAGES ARE NOT DISPLAYED, DUE TO ANY REASON OR CAUSE INCLUDING ANY FAILURE OR PROBLEM OF THE PRODUCT;
- (5) ANY PROBLEM, CONSEQUENTIAL INCONVENIENCE, OR LOSS OR DAMAGE, ARISING OUT OF THE SYSTEM COMBINED BY THE DEVICES OF THIRD PARTY;
- (6) ANY CLAIM OR ACTION FOR DAMAGES, BROUGHT BY ANY PERSON OR ORGANIZATION BEING A PHOTOGENIC SUBJECT, DUE TO VIOLATION OF PRIVACY WITH THE RESULT OF THAT SURVEILLANCE-CAMERA'S PICTURE, INCLUDING SAVED DATA, FOR SOME REASON, BECOMES PUBLIC OR IS USED FOR THE PURPOSE OTHER THAN SURVEILLANCE;
- (7) LOSS OF REGISTERED DATA CAUSED BY ANY FAILURE.

Preface

The network camera WV-NS202A is designed to operate using a PC on a network (10BASE-T/100BASE-TX). By connecting to a network (LAN) or the Internet, images and audio from the camera can be monitored on a PC via a network. *1

Features

Progressive output with the super dynamic 3 function

SUPER-D 3 compensates brightness on a pixel-to-pixel basis so that it produces clearer images even if objects have various illumination intensities. The progressive output (with motion adaptive interlace/progressive conversion*) achieves high resolution image display.

* Motion adaptive interlace/progressive conversion function

The motion adaptive interlace/progressive conversion function compensates aliasing of images (that is specific to interlace scan when shooting motion) and converts images into progressive images. By converting into progressive images, clear images of both motion and stationary objects will be created.

JPEG/MPEG-4 dual encode

MPEG-4 images can be monitored while recording JPEG images.

Power over Ethernet (IEEE802.3af compliant) function is featured

When connecting with a PoE (Power over Ethernet) device, power will be supplied by simply connecting a LAN cable.

Interactive communication with audio (transceiver type) is available

By using the audio output connector and the microphone in connector, receiving audio from the camera on a PC and transmitting audio from the PC to the camera is available. (Transceiver type is the communication type that receives/transmits audio alternately between two operators. It is impossible to receive/transmit audio simultaneously between them.)

High power lens and high accuracy preset position function

A single camera provides wide area monitoring.

Upside-down installation is available

The camera can be installed not only on the ceiling but also on desktop.

When using an optional mount bracket, embedded installation on a ceiling or mounting on a wall is available.

Simple Black & white mode

Images will be displayed clear even at night since the camera will be automatically switched from the color mode to the black and white mode under low illumination condition.

SD memory card slot

Images can be recorded on an optional SD memory card*2 both automatically (when images fail to transmit using the FTP periodic transmission function) and manually.

*1 It is necessary to configure the network settings of the PC and its network environment to monitor images and audio from the camera on the PC. It is also necessary that a web browser is installed on the PC.

*2 Performance with this camera has been checked by using Panasonic's SD memory cards (64 MB, 128 MB, 256 MB, 512 MB, 1 GB, and 2GB). If another SD memory card is used, this camera may not operate properly.

About these operating instructions

There are 2 sets of operating instructions for the WV-NS202A as follows.

- Installation Guide (book, these operating instructions)
- Network Operating Instructions (PDF)

The "Installation Guide" contains descriptions of how to install and connect this camera, and how perform the required network settings.

Refer to the "Network Operating Instructions (PDF)" on the provided CD-ROM for descriptions of how to perform the camera settings and how to operate this camera. Adobe® Reader is required to read the network operating instructions (PDF).

System requirements for a PC

CPU:	Pentium® 4 2.4 GHz or faster
Memory:	512 MB or more
Network Interface:	10/100 Mbps Ethernet port x1
Audio Interface:	Sound card (when playing audio)
Monitor:	Resolution: 1 024 x 768 pixels or more Color: 24-bit True color or better
OS:	Microsoft® Windows® 2000 Professional SP4 Microsoft® Windows® XP Home Edition SP2 Microsoft® Windows® XP Professional SP2
Web Browser:	Microsoft® Internet Explorer® 6.0 SP2 Microsoft® Internet Explorer® 7.0
Other:	Microsoft® Internet Explorer® 6.0 SP1 only when using Windows® 2000 Professional SP4, CD-ROM Drive: It is necessary to read the network operating instructions and use the software on the provided CD-ROM. DirectX® 9.0c or later Adobe® Reader: It is necessary to read the network operating instructions on the provided CD-ROM.

Notes:

- When using a PC that does not meet the above requirements, displaying of images may become slow or the web browser may become inoperable.
 - Audio may not be heard if a sound card is not installed on a PC. Audio may be interrupted depending on the network environment.
-

Trademarks and registered trademarks

- Microsoft, Windows, Internet Explorer, and DirectX are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries.
- Intel and Pentium are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the United States and other countries.
- Adobe and Reader are either registered trademarks or trademarks of Adobe Systems Incorporated in the United States and/or other countries.
- SD logo is a trademark.
- Other names of companies and products contained in these operating instructions may be trademarks or registered trademarks of their respective owners.

Network security

As you will use this product connected to a network, your attention is called to the following security risks.

1. Leakage or theft of information through this product
2. Use of this product for illegal operations by persons with malicious intent
3. Interference with or stoppage of this product by persons with malicious intent

It is your responsibility to take precautions such as those described below to protect yourself against the above network security risks.

- Use this product in a network secured by a firewall, etc.
- If this product is connected to a network that includes PCs, make sure that the system is not infected by computer viruses or other malicious entities (using a regularly updated anti-virus program, anti-spyware program, etc.).
- Protect your network against unauthorized access by restricting users to those who log in with an authorized user name and password.
- Apply measures such as user authentication to protect your network against leakage or theft of information, including image data, authentication information (user names and passwords), alarm mail information, FTP server information and DDNS server information.
- Do not install the camera in locations where the camera or the cables can be destroyed or damaged by persons with malicious intent.

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Precautions

Use this product for indoor use only.

Do not expose this product to direct sunlight for hours and do not install the product near a heater or an air conditioner. Otherwise, it may cause deformation, discoloration and malfunction. Keep this product away from water.

To continue using with stable performance

Parts of this product may deteriorate and it may shorten the lifetime of this product when using in locations subject to high temperatures and high humidity. Do not expose the product to direct heat such as from a heater.

Handle the appliance with care.

Do not strike or shake, as this may damage the product. It may cause a malfunction.

About the PC monitor

When displaying the same image on the PC monitor for a long time, the PC monitor may be damaged. It is recommended to use a screen-saver.

When an error is detected, the camera will restart automatically.

This camera will restart when detecting an error caused by any reason. The camera will be inoperable for around 30 seconds after the restart just as when the power is turned on.

About SD memory card

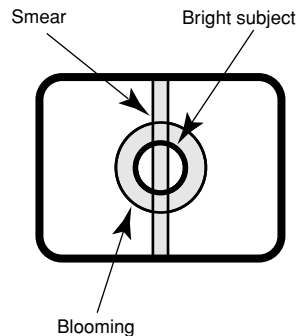
- Before inserting a SD memory card into the SD memory card slot, turn the power of the camera off. Otherwise, it may cause malfunction or damage data recorded on the SD memory card. Refer to page 21 for descriptions of how to insert/remove a SD memory card.
- When using an unformatted SD memory card, format it using this camera. Recorded data on the SD memory card will be deleted when formatted. If using an unformatted SD memory card or using a SD card formatted with other device, the camera may not work properly or performance deterioration may be caused. Refer to the network operating instructions (PDF) for descriptions of how to format a SD memory card.
- It is recommended to use Panasonic's SD memory cards (64 MB, 128 MB, 256 MB, 512 MB, 1 GB, and 2 GB) since they have tested and confirmed full compatibility with this camera. If another SD memory card is used, the camera may not work properly or performance deterioration may be caused.
- Images saved on the SD memory card may lead to personal information leakage. When it is necessary to give the camera to someone, even when for repair, make sure that the SD memory card is removed from the camera.

Discoloration on the CCD color filter

When continuously shooting a bright light source such as a spotlight, the color filter of the CCD may have deteriorated and it may cause discoloration. Even when changing the fixed shooting direction after continuously shooting a spotlight for a certain period, the discoloration may remain.

Do not aim the camera at strong light sources.

A light source such as a spot light causes a blooming (light bleeding) or a smear (vertical lines).



About the position refresh function

When the camera is being used for a long time, misalignment of the preset positions may occur.

To solve this problem, it is recommended to assign the position refresh function to the schedule in order to correct misalignment of the preset positions periodically.

About the self-diagnosis function

When the camera malfunctions due to exogenous noise, etc. for 30 seconds or more, the camera will automatically reset and will return to normal state. When the camera is reset, initialization will be carried out as when the power of the camera is turned on. When the camera repeatedly resets, exogenous noise level around the camera may be high and that may cause malfunction. Contact your dealer for instructions.

Cleaning the camera body

Turn the power off when cleaning of the camera. Use a dry cloth to clean the camera.

Do not use strong abrasive detergent when cleaning the camera body. When the dirt is hard to remove, use a mild detergent and wipe gently. Then, wipe with a dry cloth.

Otherwise, it may cause discoloration. When using a chemical cloth for cleaning, read the caution provided with the chemical cloth product.

Important:

The camera position may be moved inadvertently while cleaning the camera body. Restart the camera or refresh the camera position (position refresh) to correct the camera position.

Refer to the network operating instructions (PDF) for further information.

Indication label

Refer to the indication label placed on the surface of the unit as to the indications of equipment classification and power source, etc.

PoE (Power over Ethernet)

Use a PoE hub/device that is compliant with IEEE802.3af standard.

Router

When connecting the camera to the Internet, use a broadband router with the port forwarding function (NAT, IP masquerade).

Refer to the Network Operating Instructions (PDF) for further information about the port forwarding function.

Radio disturbance

When the camera is used near a TV/radio antenna, or a strong electric field or magnetic field (such as near a motor or a transformer), images may be distorted and noise may be produced.

Installing place

Contact your dealer for assistance if you are unsure of an appropriate place in your particular environment.

- Make sure that the installation area is strong enough to hold the camera, such as a concrete ceiling. When the installation area is not strong enough, reinforce and strengthen it or use an optional mount bracket (WV-Q150C, WV-Q150S, WV-Q151C, WV-Q151S or WV-Q105).
- When using an outdoor housing to install the camera, use an optional inner cover (WV-Q153).

Avoid installing in the following locations.

- Locations where it may get wet from rain or water splash (not only outdoor)
- Locations where a chemical agent is used such as a swimming pool
- Locations subject to steam and oil smoke such as a kitchen
- Locations near flammable gas or vapor
- Locations where radiation or x-ray emissions are produced
- Locations subject to strong magnetic field or radio waves
- Locations where corrosive gas is produced
- Locations where it may be damaged by briny air such as seashores
- Locations where the temperature is not within -10°C - $+50^{\circ}\text{C}$ (14°F - 122°F).
- Locations subject to vibrations (This product is not designed for on-vehicle use.)
- Locations subject to condensation as the result of severe changes in temperature

Be sure to remove this product if it is not in use.

Mounting screws

Only the fixing screws are provided to fix the camera with the provided mount bracket. It is necessary to procure screws or bolts to mount the camera. Prepare them according to the material and strength of the area where the camera is to be installed. The screws and bolts must be tightened with an appropriate tightening torque according to the material and strength of the installation area.

Refresh interval

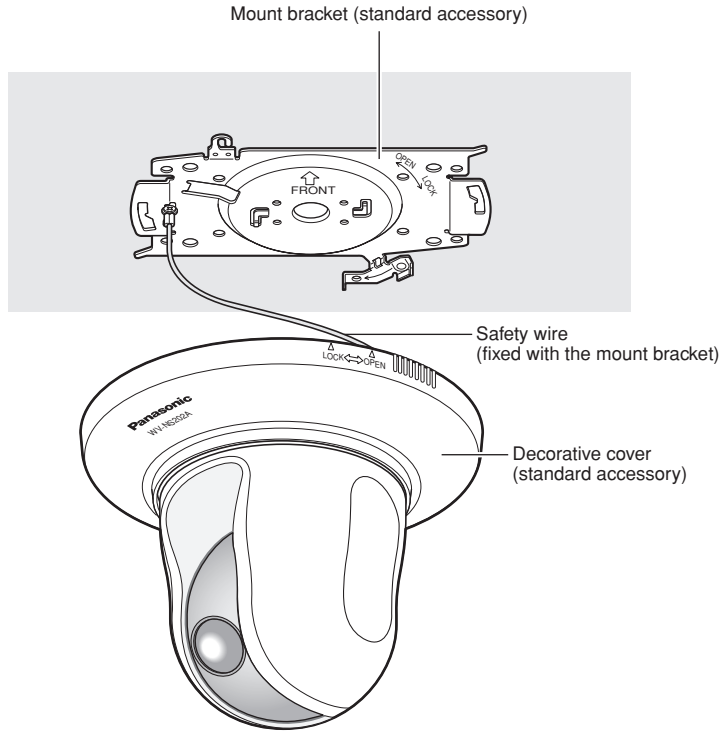
Image refresh interval may become slow depending on the network environment, PC performance, shooting subject, access number, etc.

MPEG-4 Visual patent portfolio license

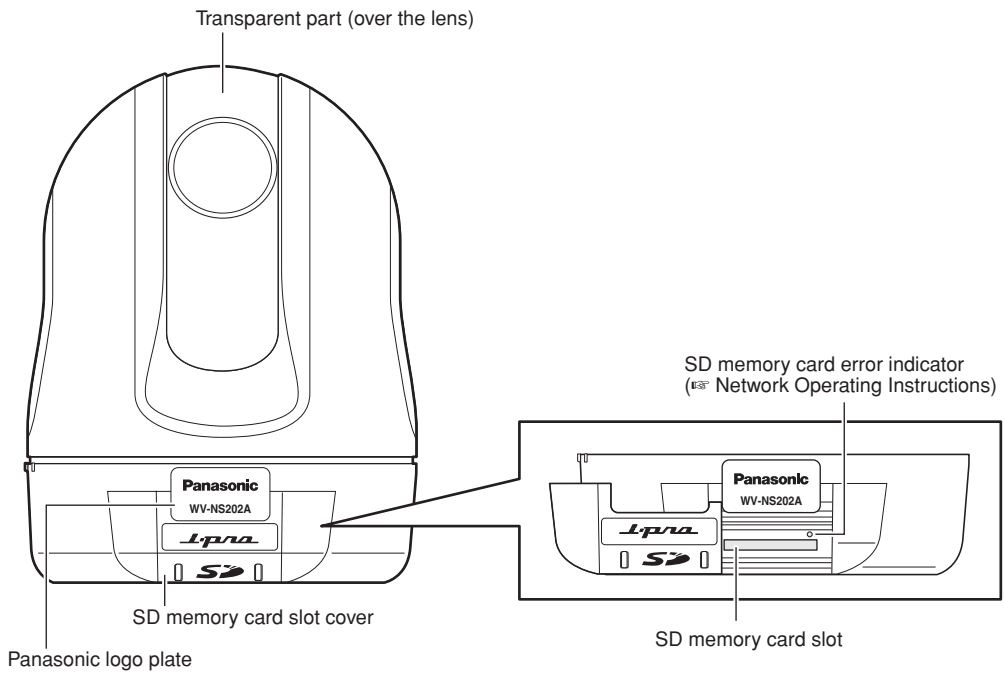
This product is licensed under the MPEG-4 Visual patent portfolio license for the personal and non-commercial use of a consumer for (i) encoding video in compliance with the MPEG-4 Visual Standard ("MPEG-4 Video") and/or (ii) decoding MPEG-4 Video that was encoded by a consumer engaged in a personal and non-commercial activity and/or was obtained from a video provider licensed by MPEG LA to provide MPEG-4 Video. No license is granted or shall be implied for any other use. Additional information including that relating to promotional, internal and commercial uses and licensing may be obtained from MPEG LA, LLC. See <http://www.mpegla.com>.

Distributing, copying, disassembling, reverse compiling, reverse engineering, and also exporting in violation of export laws of the software provided with this product, is expressly prohibited.

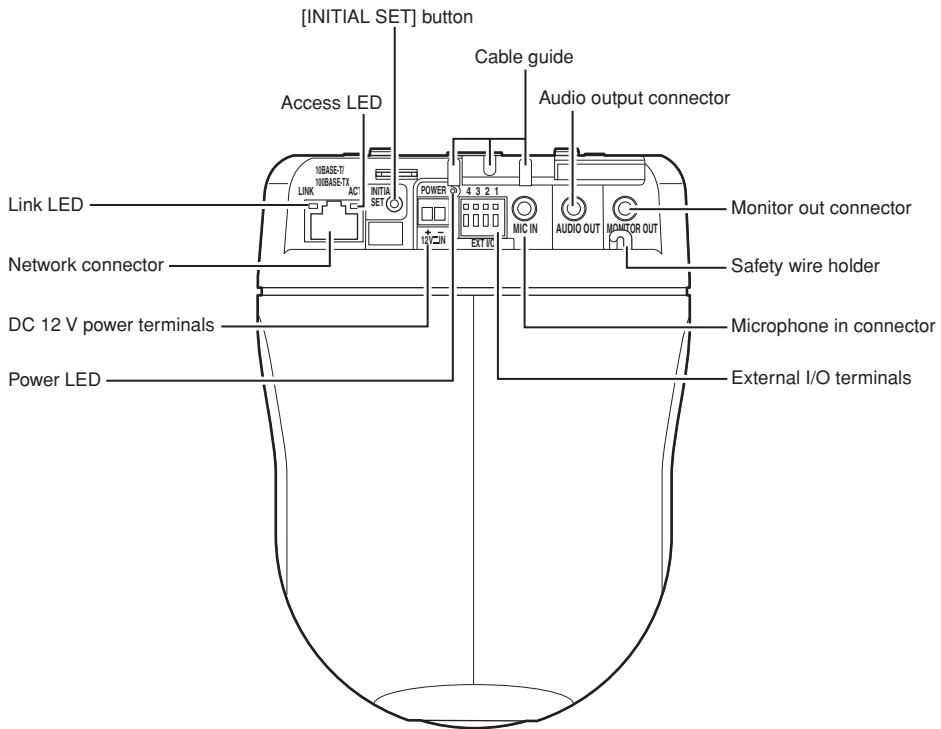
Major operating controls and their functions



Front view



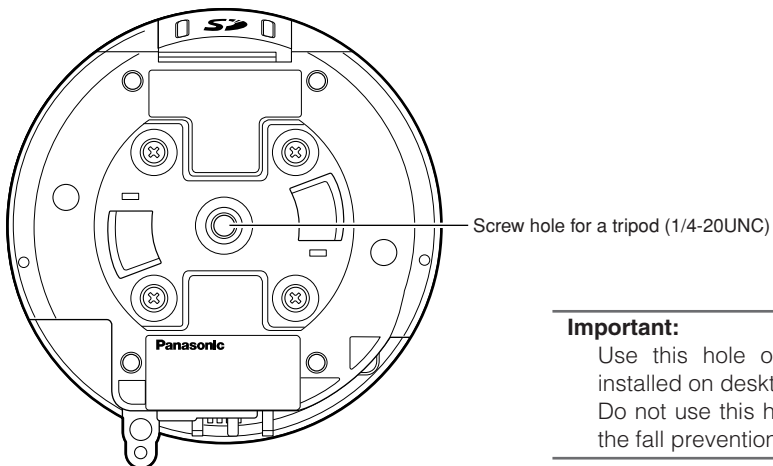
Rear view



- **About the [INITIAL SET] button**

Turn on the power of the camera while holding down this button, and wait for around 5 seconds without releasing this button. Wait another 1 minute after releasing the button. The camera will restart and the settings including the network settings will be initialized.

The settings including the network settings will be initialized. Note that the preset position settings will not be initialized.



Important:

Use this hole only when the camera is to be installed on desktop using a tripod.

Do not use this hole to mount on the ceiling since the fall prevention measure is unavailable.

Installations/Connections

Caution:

ONLY CONNECT THIS TO 12 V DC CLASS 2 POWER SUPPLY.

The following are descriptions of how to install the camera.

The camera can be installed on a ceiling and can be placed on a desktop by placing the camera upside-down.

Before starting the installation/connection, prepare the required devices and cables.

Before starting the connection, turn off the power of the devices including the camera and the PC or disconnect from the DC 12 V power supply.

Install on ceiling

When installing the camera on a ceiling, there are two methods; wiring through a hole in the ceiling (☞ page 13) and wiring through a cable guide (unnecessary to make a hole in the ceiling) (☞ page 17).

Important:

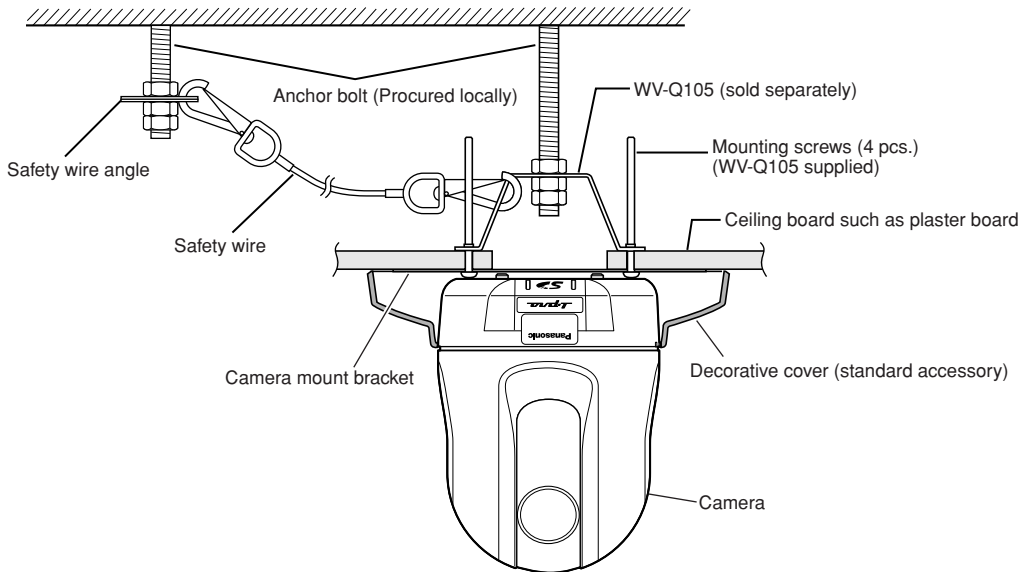
- Prepare four fixing screws (M4 or M6) to be used to mount the provided mount bracket according to the material of the area where the camera mount bracket is to be installed. Do not use wood screws and nails.

When installing on concrete ceiling: Fix with anchor bolts (M6).

(Recommended tightening torque: 5.0 N·m [51 kgf·cm])

- Required pull-out capacity of a single screw/bolt is 196 N {20 kgf} or more.
- If a ceiling board such as plaster board is too weak to support the total weight, the area shall be sufficiently reinforced or the optional ceiling mount bracket for the camera, WV-Q105, shall be used. When using an optional mount bracket or inner cover, refer to the operating instructions of the bracket in use.
- When using an outdoor housing to install the camera, use an optional inner cover (WV-Q153).
- Remove the cover film from the transparent part of the dome cover after the installation is complete.
- When using an optional mount bracket, refer to the operating instructions of the bracket in use.
- When using a DC12 V power supply, it is necessary to fabricate the cable end. (☞ page 16)

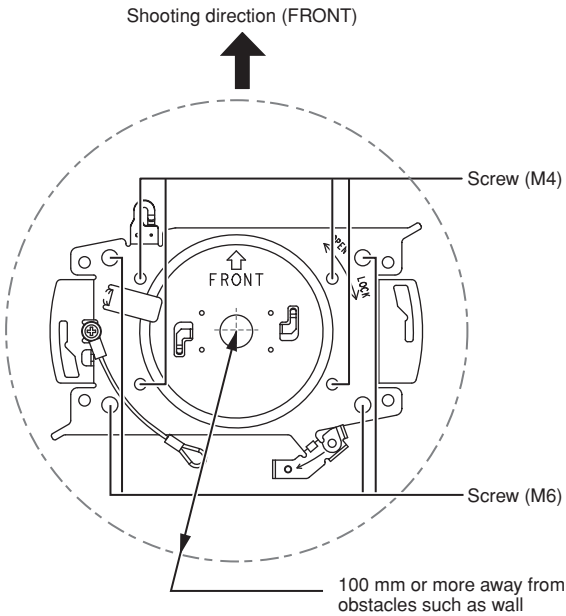
<When using the optional mount bracket WV-Q105>



Wire through a hole in the ceiling

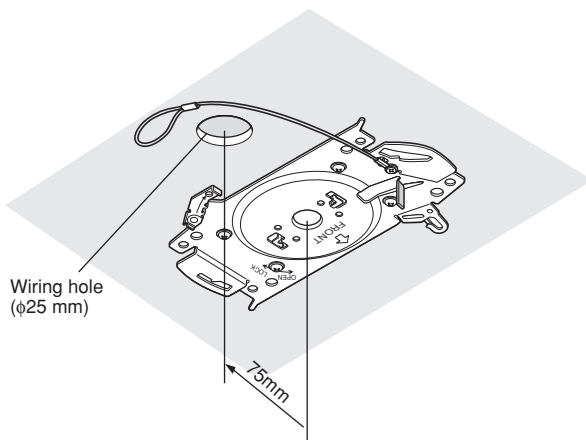
Step 1

Fix the provided camera mount bracket with four optional fixing screws (M4 or M6). There should be no obstacles such as wall in a range of 100 mm away from the center point of the mount bracket.



Step 2

Make a hole in the ceiling to pass the cables through. Make a hole 25 mm in diameter. The center point of the hole should be located approx. 75 mm away from the center point of the mount bracket.

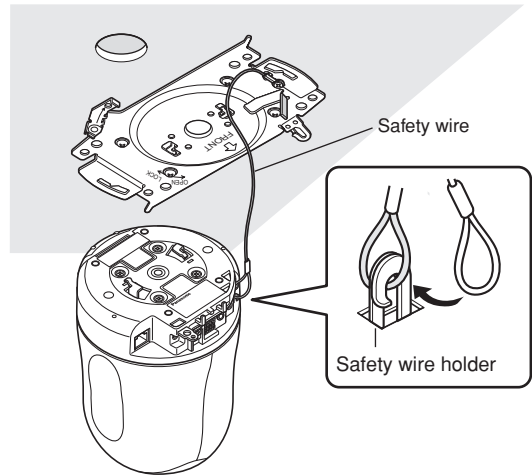


Step 3

Insert the SD memory card into the SD memory card slot. Refer to page 21 for how to insert the SD memory card.

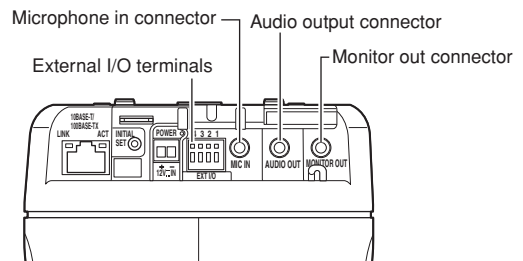
Step 4

Attach the safety wire fixed with the camera mount bracket to the camera. After attaching the safety wire to the camera, pull the safety wire and confirm that the ring at the end of the safety wire is securely hooked on the safety wire holder.



Step 5

Connect cables to the EXT I/O terminals, the MIC IN connector, the AUDIO OUT connector and the MONITOR OUT connector.

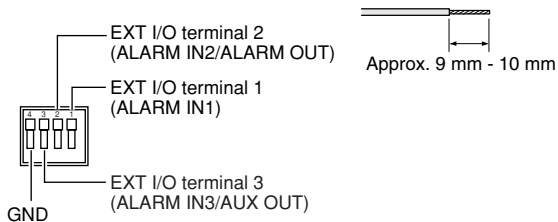


• External I/O terminals

Connect external devices.

When connecting an external device, first remove 9 mm – 10 mm of the outer jacket of the cable and twist the cable core to prevent a short circuit.

Specification of cable (wire): AWG #22 - #28
Single core, twisted



Important:

- Do not connect 2 or more wires directly to a terminal. When it is necessary to connect 2 or more wires, use a splitter.
- Input and output of EXT I/O terminal 2 and 3 can be switched by configuring the setting. The default of EXT I/O terminal 2 is "ALARM IN 2" and of EXT I/O terminal 3 is "ALARM IN 3". It is possible to determine whether or not to receive input from EXT I/O terminal 2 and 3 (ALARM IN2, 3) by selecting "OFF", "Alarm input", "Alarm output" or "AUX output" for "Terminal alarm 2" or "Terminal alarm 3" on the [Alarm] tab on the "Alarm setup" page. Refer to the network operating instructions (PDF) for further information.
- When using the EXT I/O terminals as the output terminals, ensure they do not cause signal collision with external signals.

<Ratings>

- ALARM IN1, ALARM IN2, ALARM IN3:
Non-voltage make contact (DC 4 - 5 V internal pull-up)
OFF: Open or DC 4 - 5 V
ON: Make contact with GND (drive current: 1 mA or more)
- ALARM OUT, AUX OUT:
Open collector output (Maximum applied voltage: DC 20 V)
OPEN: DC 4 - 5 V by internal pull-up
CLOSE: Output voltage: DC 1 V or less (maximum drive current: 50 mA)

• Microphone in connector

Connect the mini plug (ø3.5 mm) of a plug-in power type microphone (sold separately).
Supply voltage: 2.5 V ±0.5 V
Input impedance: 3 kΩ ±10 %
Recommended sensitivity of microphone:
-48 dB ±3 dB (0 dB=1 V/Pa, 1 kHz)
Recommended cable length: Less than 1 m

Important:

Connect/disconnect the audio/video cables after turning off the power of the camera and the amplifier. Otherwise, loud noise may be heard from the speaker.

• Audio output connector

Connect a monaural mini plug (ø3.5 mm). Use a powered external speaker.

Recommended cable length: Less than 10 m

Note:

Make sure that the stereo mini plug is connected to this connector. When a monaural mini plug is connected, audio may not be heard. When connecting a monaural powered speaker, use an optional conversion cable (mono-stereo).

• Monitor out connector

Connect a monaural mini plug (ø3.5 mm) (only for checking if images are displayed on the monitor).

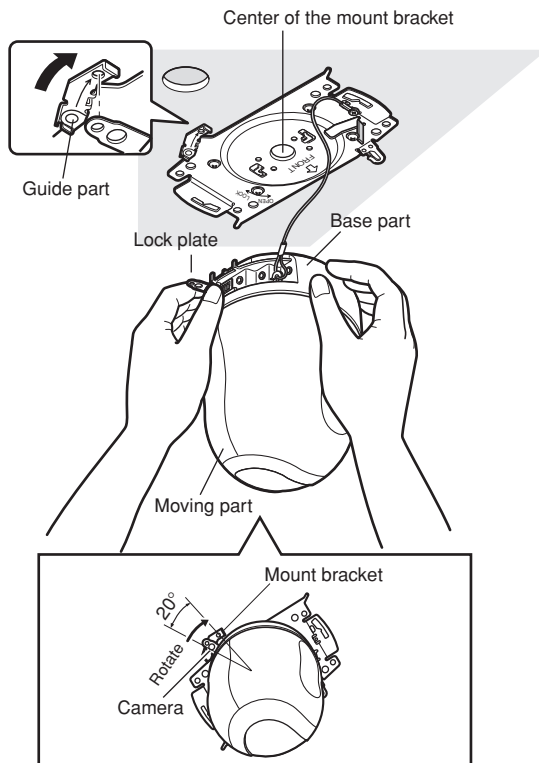
The monitor out connector is provided only for checking the adjustment the angular field of view on the video monitor when installing the camera or when servicing.

Step 6

Mount the camera onto the camera mount bracket. Fit the lock plate of the camera onto the guide part of the camera mount bracket, and rotate the camera clockwise after inserting the camera while putting the center of the camera (screw hole for a tripod) onto the center of the camera mount bracket.

Important:

When mounting the camera onto the camera mount bracket, hold the base part of the camera. Mounting the camera while holding the moving part may result in malfunction.

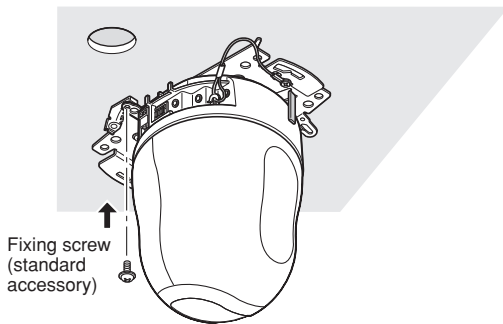


Step 7

Fix the camera on the mount bracket using the provided camera fixing screw.

Recommended tightening torque:

0.68 N·m {7.0 kgf·cm}

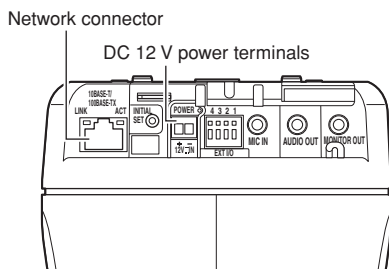


Step 8

Connect the cables to the network connector and the power inlet.

Important:

- Do not touch the camera in the process of initialization. Otherwise, it may fail to initialize and may cause malfunction.
- When the camera has been inadvertently touched and moved after the initialization is complete, the preset positions may be inaccurate. In this case, use the position refresh function or restart the camera to correct the preset positions. Refer to the network operating instructions (PDF) for further information.



• Network connector

Connect a LAN cable (category 5 or better) to the network connector.

When the LAN cable connected to the network connector of the camera is connected to a PoE device (such as a PoE hub), power will be supplied to the camera through the LAN cable.

When using a PoE device, refer the following notice.

Important:

- Use all 4 pairs (8 pins) of the LAN cable.
- The maximum cable length is 100 m.
- Make sure that the PoE device in use is compliant with IEEE802.3af standard.
- When connecting both the DC 12 V power supply and the PoE device for power supply, PoE will be used for power supply.
- When disconnecting the LAN cable once, reconnect the cable after about 2 seconds. When the cable is connected before 2 seconds have passed, the power may not be supplied from the PoE device.

• DC 12 V power terminals

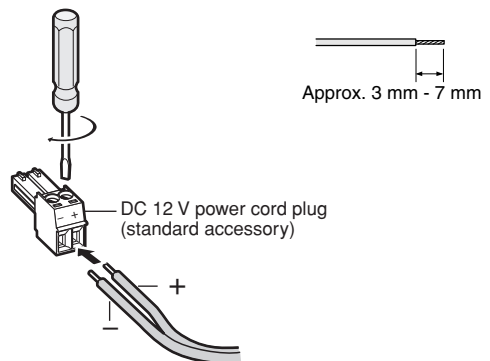
Connect to a DC 12 V power supply.

- ① Remove 3 mm – 7 mm of the outer jacket of the power cord from a DC 12 V power supply and twist the core of the power cord to prevent a short circuit. Then, loosen the screw of the provided DC 12 V power cord plug and attach the power cord from the DC 12 V power supply. Tighten the screw of the DC 12 V power cord plug to fix to the attached cable.

Specification of cable (wire): AWG #16 - #28

Single core, twisted

- ② Insert the DC 12 V power cord plug into the DC 12 V power terminals.



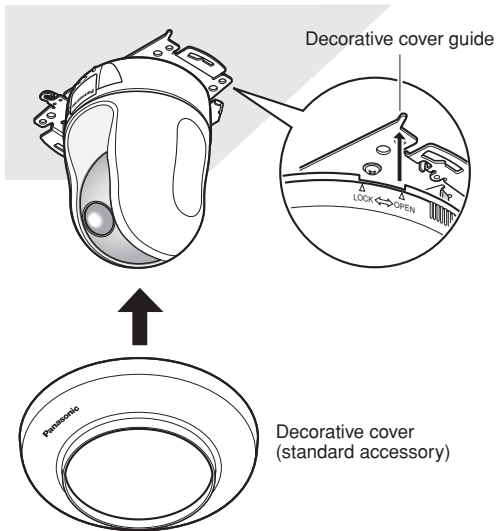
Important:

- Make sure that the power cord from a DC 12 V power supply is fixed to the provided DC 12 V power cord plug firmly. Make also sure that the DC 12 V power cord plug is inserted into the DC 12 V power terminals of the camera firmly. Otherwise, it may damage the camera or cause malfunction.
- When the power of the camera is turned on, the camera will start panning and the position will automatically be initialized.

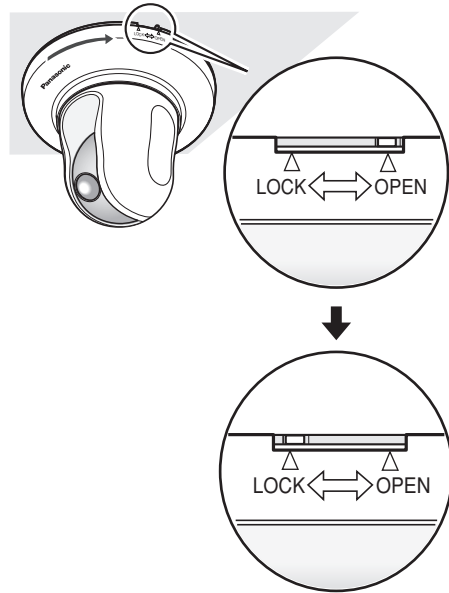
Step 9

After completing the cable connections, attach the provided decorative cover.

- ① Align the indication "OPEN" of the decorative cover to the decorative cover guide of the mount bracket.



- ② Rotate the decorative cover clockwise until the indication "LOCK" reaches the decorative cover guide of the mount bracket.



Important:

Make sure that no cable is pinched by the decorative cover.

Wire without making a hole in the ceiling

Step 1

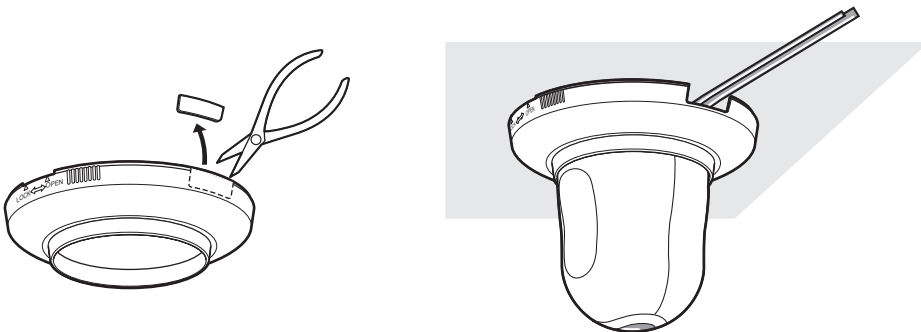
Install the camera by following step 1 and steps 3 – 8 of the "Wire through a hole in the ceiling" section (☞ pages 14 - 16). It is unnecessary to make a hole in the ceiling as described in step 2 of the "Wire through a hole in the ceiling" section.

Step 2

Remove the tab on the rear of the decorative cover that is blocking the wiring hole.

Attach the decorative cover by following step 9 of the "Wire through a hole in the ceiling" section (☞ pages 14 - 16).

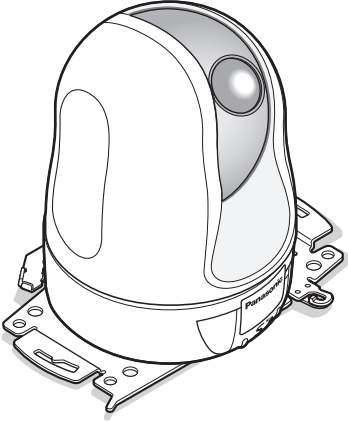
Wire through the wiring hole of the decorative cover.



Place the camera upside-down by fixing on the bracket

When using the camera upside-down, fix the camera using the provided camera mount bracket to prevent a fall. Install the camera by following step 1 and steps 3 – 8 of the "Wire through a hole in the ceiling" section (☞ pages 14 - 16).

When using the camera upside-down, select "ON (desktop)" for "Upside-down" on the [Camera] tab of the setup menu. (☞ Network operating instructions (PDF)).



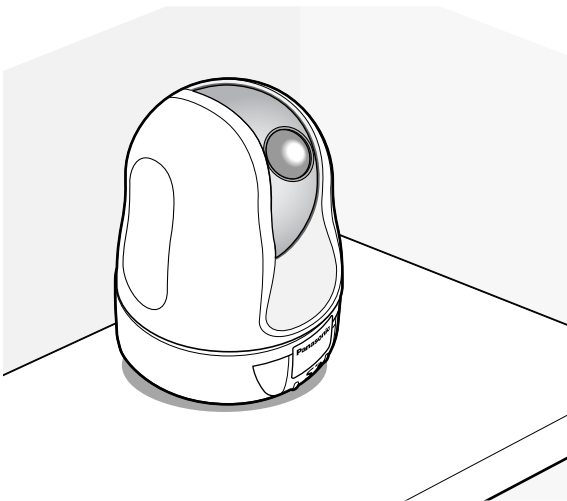
Important:

Prepare four fixing screws (M4 or M6) to be used to mount the provided mount bracket according to the material of the place where the camera mount bracket is to be installed.

Place the camera upside-down on a desktop without fixing

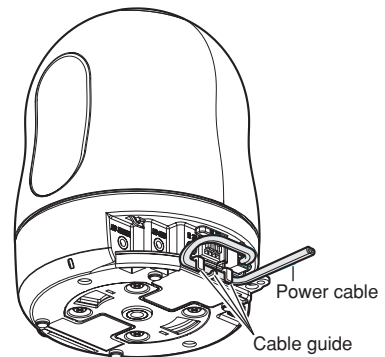
Place the camera on a level place not subject to vibrations. Ensure that the camera does not fall.

When using the camera upside-down, select "ON (desktop)" for "Upside-down" on the [Camera] tab of the setup menu. (☞ Network operating instructions (PDF)).



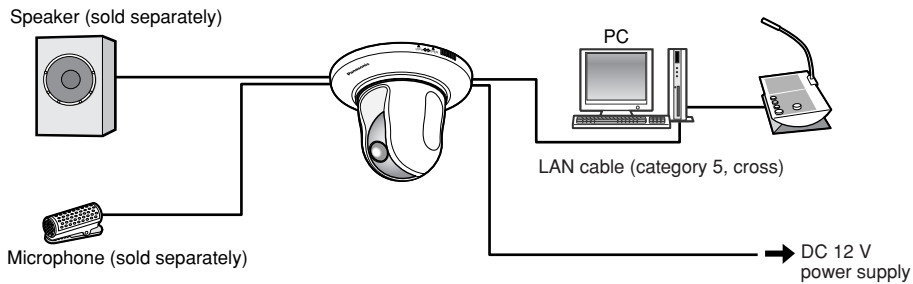
When connecting to a DC 12 V power supply, pass the power cord from a DC 12 V power supply through the cable guides after inserting the DC 12 V power cord plug into the DC 12 V power terminals.

Refer to page 16 for how to connect to a DC 12 V power supply.



[Connection example]

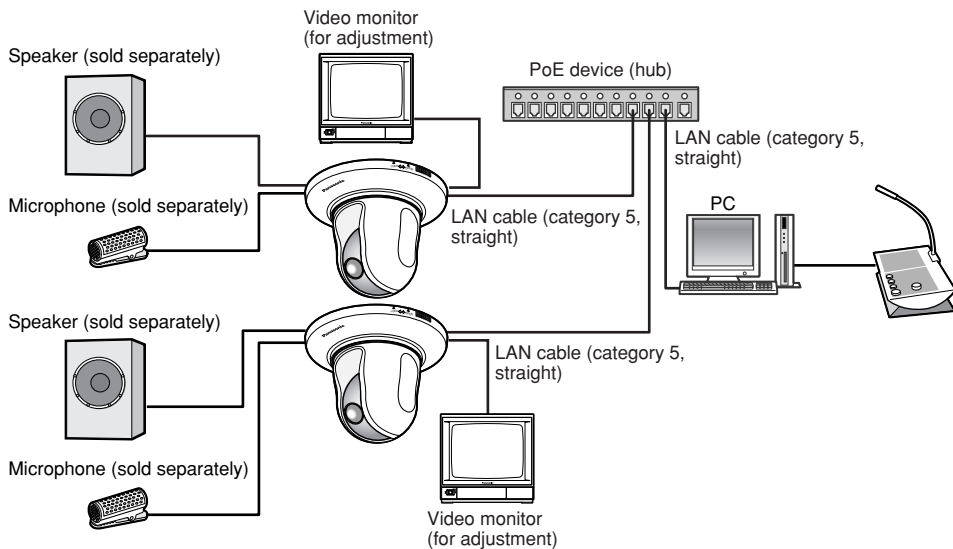
When connecting with a PC directly



<Required cable>

LAN cable (category 5, cross)

When connecting to a network using a PoE device (hub)



<Required cable>

LAN cable (category 5, straight)

Important:

- The monitor out connector is provided only for checking the adjustment of the angular field of view on the video monitor when installing the camera or when servicing. It is not provided for recording/ monitoring use.
- Depending on the monitor, some characters (camera title, preset ID, etc.) may not be displayed on the screen.
- Use a switching hub or a router which is compliant with 10BASE-T/100BASE-TX.
- Power supply is required for each network camera. When using a PoE device (hub), DC 12 V power supply is unnecessary.

Detach the camera

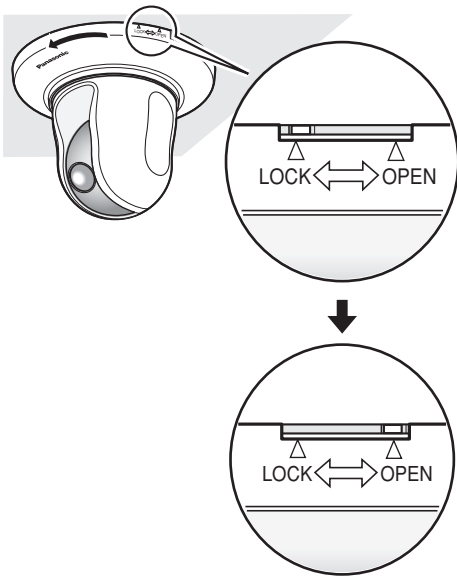
The camera is fixed on the camera mount bracket using the fixing screw. Remove the camera by following the instructions below.

Important:

Do not detach the camera in a different way from the one described below. It may damage the camera.

Step 1

Rotate the decorative cover counterclockwise until the indication "OPEN" reached the decorative cover guide of the mount bracket.
Detach the decorative cover.

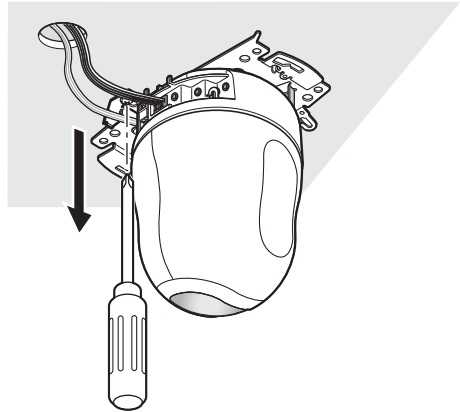


Step 2

Detach the DC 12 V power cord plug and the LAN cable from the camera, and then turn off the power of the camera.

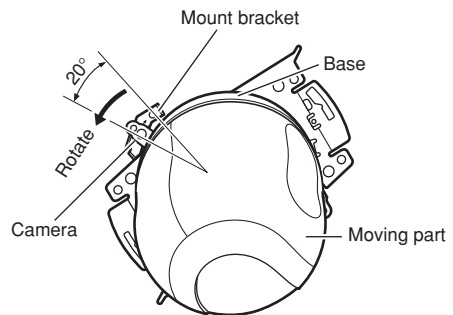
Step 3

Remove the fixing screw that is fixing the camera on the mount bracket.
Do not lose the fixing screw.



Step 4

Rotate the camera counterclockwise to detach the camera from the mount bracket.



Important:

When detaching the camera from the camera mount bracket, hold the base of the camera. Detaching the camera while holding the moving part may result in malfunction.

Step 5

Detach the cables from the camera.

Step 6

Detach the safety wire from the camera.

Insert/remove an SD memory card

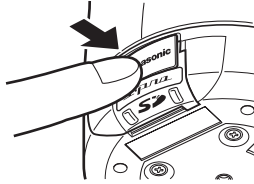
How to insert an SD memory card

Important:

Before inserting the SD memory card, turn off the power of the camera first.

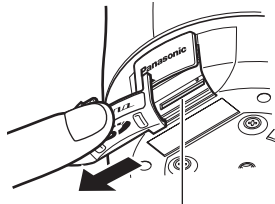
Step 1

Push the Panasonic logo plate on the front of the camera to unlock the SD memory card slot cover.



Step 2

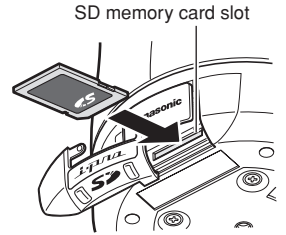
Slide the SD memory card slot cover to the left to expose the slot.



SD memory card slot cover

Step 3

Insert an SD memory card into the SD memory card slot.



Step 4

Shut the SD memory card slot cover and lock the cover by pushing the Panasonic logo plate.

Step 5

Select "Use" for "SD memory card" on the [SD memory card] tab of "Basic Setup" on the setup menu. (Network operating instructions (PDF))

How to remove the SD memory card

Important:

Before removing the SD memory card, select "Not use" for "SD memory card" on the [SD memory card] tab of "Basic Setup" on the setup menu first. (Network operating instructions (PDF))

Step 1

Open the SD memory card slot cover by following steps 1 and 2 of the "How to insert an SD memory card" section.

Step 2

Release the locked SD memory card by pushing the card and then pull the SD memory card from the slot.

Step 3

Shut the SD memory card slot cover and lock the cover by pushing the Panasonic logo plate.

Configure the network settings

Install the software

Before installing the software, read the readme file on the provided CD-ROM first.

Software included on the provided CD-ROM

- Panasonic IP Setup Software
Configure the network settings of the camera. Refer to the following for further information.
- Viewer Software "Network Camera View3"
It is necessary to install the viewer software "Network Camera Viewer3" to display images on a PC. Install the viewer software by double-clicking the "nwc3setup.exe" icon on the provided CD-ROM or install from the camera directly (☞ Network operating instructions (PDF)).

Configure the network settings of the camera using the Panasonic IP setting software

It is possible to perform the network settings of the camera using the IP setup software on the provided CD-ROM. When using multiple cameras, it is necessary to configure the network settings of each camera independently. If the Panasonic IP setting software does not work, perform the network settings of the camera and the PC individually on the "Network setup" page of the setup menu. Refer to the network operating instructions (PDF) for further information.

Important:

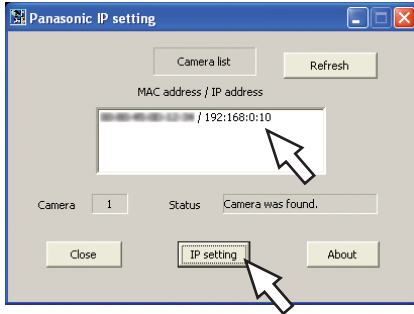
- The "Windows Security Alert" window may be displayed when starting the IP setup software. In this case, click the "Unblock" button on the displayed "Windows Security Alert" window.
 - For the security enhancement, the MAC address/IP address of the camera to be configured will not be displayed when around 20 minutes have passed after turning on the power of the camera. However, the MAC address/IP address of the camera will be displayed even after around 20 minutes have passed when the values of all the following setup items are still the default values; "IP address", "Default gateway", "Net mask", "HTTP port", "DHCP", "User name", "Password".
 - The Panasonic IP setting software is inoperable in other subnets via the same router.
-

Step 1

Start the Panasonic IP setting software.

Step 2

Click the [IP setting] button after selecting the MAC address/IP address of the camera to be configured.

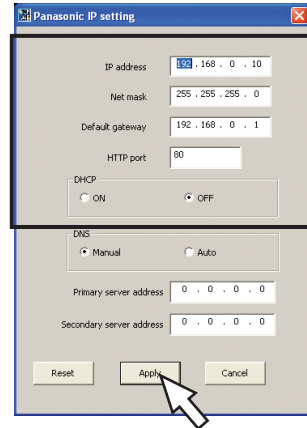


Note:

When using a DHCP server, the IP address assigned to the camera can be displayed by clicking the [Refresh] button of the IP setting software.

Step 3

Complete each network setup item and click the [Apply] button.



Note:

When using a DHCP server, it is possible to set "DNS" to "AUTO".

Important:

- It may take around 30 seconds to completely upload the settings of the camera after clicking the [Apply] button. The settings may be invalidated when the DC 12 V power supply is cut or when the LAN cable is disconnected before completing the upload. In this case, perform the settings again.
- When using a firewall (including software), allow access to all UDP ports.

Troubleshooting

Before asking for repairs, check the symptoms on the following table.

Contact your dealer if a problem cannot be solved even after checking and trying the solution or if the problem is not described below.

Symptom	Cause/solution	Reference pages
<p>The power cannot be turned on.</p>	<p>When using DC power supply</p> <ul style="list-style-type: none"> Is the provided DC 12 V power cord plug firmly inserted into the DC 12 V power terminals of the camera? Confirm that the plug is firmly inserted. <p>When using a PoE device for power supply</p> <ul style="list-style-type: none"> Are the PoE device and the network connector on the rear of the camera connected using a LAN cable (category 5)? Confirm the cable is firmly connected. Depending on the PoE device, the power supply will stop when the power demand exceeds the total power limit for all PoE ports. Refer to the operating instructions of the PoE device in use. 	<p>16</p> <p>16</p> <p>—</p>
<p>The camera does not move to the preset positions accurately.</p>	<ul style="list-style-type: none"> When misalignment of the preset positions occurred while the camera is in use, misalignment will be corrected using the position refresh function. The position refresh function can be assigned to the schedule so that misalignment can be corrected periodically. In some situations, reconfigure the preset positions. 	<p>Network operating instructions (PDF)</p>
<p>When the camera is panning/tilting, the camera stops panning/tilting and mechanical noise comes from the camera.</p>	<ul style="list-style-type: none"> When the camera position is moved after turning on the power of the camera, the camera may stop in the process of panning/tilting and mechanical noise will come out from the camera. Execute the refresh position function from the [Initialization] tab of the "Maintenance" page. 	<p>Network operating instructions (PDF)</p>
<p>The camera starts panning unpredictably.</p>	<ul style="list-style-type: none"> This may be caused by noise. Check the exogenous noise level around the camera. 	<p>9</p>
<p>When using an optional inner cover, upper side of images are hidden (become black) when the tilt angle of the camera is almost level.</p>	<ul style="list-style-type: none"> This is not malfunction. (This is caused by the shape of the inner cover WV-Q153 or an inner cover provided to an optional bracket.) In this case, images may also be washed out when "ON" is selected for "AGC". 	<p>26</p> <p>Network operating instructions (PDF)</p>

Specifications

Other specifications

Power source	DC12 V, PoE (IEEE802.3af compliant)
Power consumption	DC 12 V: Approx. 1 A, PoE: Approx. 12 W (Class 0 device)
Ambient temperature	-10 °C - +50 °C (14 °F - 122 °F) Recommended operating temperature: +35 °C (95 °F)
Ambient humidity	90 % or less
Monitor output	VBS: 1.0 V [P-P]/75 Ω, composite (BNC), ø3.5 mm mini jack (monaural)
External I/O terminals	ALARM IN 1, ALARM IN 2/ALARM OUT, ALARM IN 3/AUX OUT (x1 each)
Microphone input	MIC IN (Applicable microphone: Plug-in power type) Supply voltage: 2.5 V ±0.5 V Input impedance: 3 kΩ ±10 %
Audio output	AUDIO OUT ø3.5 mm stereo mini jack (Monaural output, Line level)
Dimensions	ø115 mm x 154 mm (H) (excluding the DC 12 V power cord plug)
Weight	Camera: Approx. 850 g Accessories (Camera mount bracket, decorative cover): Approx. 200 g

CAMERA

Image sensor	1/4 inch interline transfer CCD
Effective pixels	768 (H) x 494 (V)
Scanning area	3.59 mm (H) x 2.70 mm (V)
Scanning system	2:1 interlace scan (with motion adaptive interlace/progressive conversion function)
Minimum illumination	Color: 0.7 lx (Sensitivity up: OFF, AGC: HIGH) Simple black and white: 0.5 lx (Sensitivity up: OFF, AGC: HIGH) 52 dB typ. (Super dynamic 3: ON, Shutter speed: OFF)
Dynamic range	52 dB typ. (Super dynamic 3: ON, Shutter speed: OFF)
Gain	ON (LOW)/ON (MID)/ON (HIGH)/OFF
Shutter speed	OFF (1/60), AUTO, 1/100
Sensitivity up	Up to 32x
Simple Black & white mode	OFF/AUTO
White balance	ATW1/ATW2/AWC
Digital Noise Reduction (DNR)	LOW/HIGH
Electronic Zoom	Up to 10x
Camera title	Up to 16 characters (alphanumeric characters, marks) ON/OFF
VMD alarm	ON/OFF, 4 areas available per preset position
Image hold	ON/OFF
Privacy zone	ON/OFF (up to 8 zones available)
UP side down	ON (desktop)/OFF (ceiling)

LENS

Zoom ratio	22x
Focal length	3.79 mm – 83.4 mm
Maximum aperture ratio	1 : 1.6 (WIDE) – 3.0 (TELE)
Macro	1.6 m
Aperture range	F1.6 – 22, Close
Horizontal angle of view	2.6° (TELE) – 51.7° (WIDE)
Vertical angle of view	2.0° (TELE) – 39.9° (WIDE)

Panning/tilting platform

Panning range	0° - 350°
Panning speed	Manual: Approx. 1°/s - 100°/s, preset: up to approx. 300°/s
Tilting range	-30° - 90° (upward – level – downward) Selectable tilting angle: 0°/-5°/-10°/-15°/-20°/-25°/-30°
Tilting speed	MANUAL Approx. 1°/s - 100°/s, preset: up to approx. 100°/s
Number of the preset positions	64
Auto mode	OFF/preset sequence/auto pan/auto track
Self return	10 s/20 s/30 s/1 m/2 m/3 m/5 m/10 m/20 m/30 m/60 m
Map shot	360° map shot/preset map shot

Network

Network	10BASE-T/100BASE-TX, RJ45 connector
Resolution	VGA (640 x 480)/QVGA (320 x 240)
Image compression method	
MPEG-4	Image quality: LOW/NORMAL/FINE Transmission type: UNICAST/MULTICAST
JPEG	Image quality: 0 SUPER FINE/1 FINE/2/3/4/5 NORMAL/6/7/8/9 LOW (10 steps: 0-9) Transmission type: PULL/PUSH
Refresh interval (MPEG-4)	0.1 fps – 30 fps (Frame rate of JPEG display will be limited when displaying JPEG and MPEG-4 simultaneously.)
Audio compression method	G.726 (ADPCM) 32 kbps/16 kbps
Bandwidth Control	64 kbps/128 kbps/256 kbps/512 kbps/1 024 kbps/2 048 kbps/4 096 kbps/Unlimited
Protocol	TCP/IP, UDP/IP, HTTP, RTP, FTP, SMTP, DHCP, DNS, DDNS, NTP, SNMP
OS	Microsoft® Windows® 2000 Professional SP4, Microsoft® Windows® XP Home Edition SP2, Microsoft® Windows® XP Professional SP2,
Web browser	Microsoft® Internet Explorer® 6.0SP2, Microsoft® Internet Explorer® 7.0 (Microsoft® Internet Explorer® 6.0 SP1 only when using Windows® 2000 Professional SP4)
Maximum concurrent access number	8 (Depends on network conditions)
FTP client	Alarm image transmission, FTP periodic transmission
Multi-screen	Images from 16 cameras (4 cameras x 4 groups) can be displayed simultaneously.
SD memory card (option)	Manufactured by Panasonic (Performance with this camera has been checked.) Capacity: 64 MB, 128 MB, 256 MB, 512 MB, 1 GB, 2 GB * SD High Capacity (SDHC) card is not compatible with this camera.

Standard Accessories

CD-ROM*	1 pc.
Installation Guide (this book)	1 pc.
Warranty	1 pc.

* The CD-ROM contains the operating instructions (PDFs) and the software.

The following are for installation.

Mount bracket (w/safety wire)	1 pc.
Fixing screw	2 pcs. (incl. a spare screw)
Decorative cover	1 pc.
DC 12 V power cord plug	1 pc.
Code label*	1 pc.

* It will be needed for network management.

A network administrator should keep this label.

Options

Wall Mount Bracket	WV-Q150C, Q150S (weight: Approx. 950 g)
Ceiling Mount Bracket	WV-Q151C, Q151S (weight: Approx. 800 g) WV-Q152C, Q152S (weight: Approx. 230 g) WV-Q105 (weight: Approx. 150 g)
Inner Cover	WV-Q153 (weight: Approx. 50 g)

Important:

When using an optional inner cover WV-Q153, upper side of images will be hidden (become black) when the tilt angle of the camera is almost level. (When "-5°" is selected for "Tilt Angle" on the setup menu, upper half of images will be hidden.)

In this case, images will also be washed out depending on the object when "ON" is selected for "AGC" on the setup menu.

Refer to the network operating instructions (PDF) for further information about the setup menu.

Panasonic System Solutions Company,
Unit Company of Panasonic Corporation of North America

Security Systems

www.panasonic.com/security

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