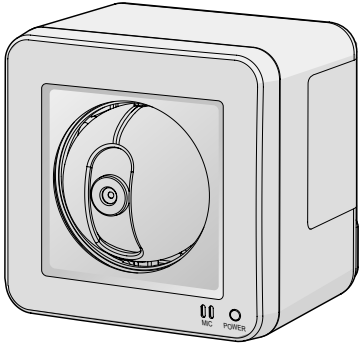


Panasonic

Installation Guide

Network Camera

Model No. **WV-SW174W/WV-SW174WE**



For U.S. and Canada: Panasonic System Communications Company of North America, Unit of Panasonic Corporation of North America www.panasonic.com/business/ For customer support, call 1-800-528-6747 Two Riverfront Plaza, Newark, NJ 07102-5490 Panasonic Drive Inc. 5770 Ambler Drive, Mississauga, Ontario, L4W 2T3 Canada (905)624-5010 www.panasonic.ca	For Europe and other countries: Panasonic Corporation http://panasonic.net Importer's name and address to follow EU rules: Panasonic Testing Centre Panasonic Marketing Europe GmbH Winsbergweg 15, 22525 Hamburg, Germany C01102-3054 PGQX1100WA © Panasonic System Networks Co., Ltd. 2012 Printed in China
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Before attempting to connect or operate this product, please read these instructions carefully and save this manual for future use.

The model number is abbreviated in some descriptions in this manual.

WARNING: <ul style="list-style-type: none">● To prevent injury, this apparatus must be securely attached to the floor/wall/ceiling in accordance with the installation instructions.● The mains plug or an appliance coupler shall remain readily operable.● The installation shall be carried out in accordance with all applicable installation rules.● The connections should comply with local electrical code.	For U.S.A. This product contains a CR Coin Cell Lithium Battery which contains Perchlorate Material - special handling may apply. See www.dtscc.ca.gov/hazardouswaste/perchlorate/ For U.S. and Canada: WV-SW174W For Europe and other countries: WV-SW174WE UL listed model No. WV-SW174W For Canada This Class A digital apparatus complies with Canadian ICES-003.
NOTE: <ul style="list-style-type: none">● 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.● 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.	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. ● 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.
CAUTION: <ul style="list-style-type: none">● Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.	For WV-SW174W/WV-SW174WE - Operating near 2.4 GHz electrical appliances may cause interference. Move away from the electrical appliances. - This equipment must be installed and operated in accordance with provided instructions and a minimum 20 cm (8 inches) spacing must be provided between antenna and all person's body (excluding extremities of hands, wrist and feet) during wireless modes of operation. - The transmitter must not be co-located or operated in conjunction with any other antenna or transmitter. MEDICAL: Consult the manufacturer of any personal medical devices, such as pacemakers, to determine if they are adequately shielded from external RF (radio frequency) energy. (The unit operates in the frequency range of 2.412 GHz to 2.462 GHz, and the power output level is 0.1 watts.) Do not use the unit in health care facilities if any regulations posted you not to do so. Hospitals or health care facilities may be using equipment that could be sensitive to external RF (radio frequency) energy.

Precautions



- **Refer installation work to the dealer.**
Installation work requires technique and experiences. Failure to observe this may cause fire, electric shock, injury, or damage to the product.
 - Be sure to consult the dealer.
- **Select an installation area that can support the total weight.**
Selecting an inappropriate installation surface may cause this product to fall down or topple over, resulting in injury.
 - Installation work shall be started after sufficient reinforcement.
- **Periodic inspections shall be conducted.**
Rust on the metal parts or screws may cause a fall of the product resulting in injury or accidents.
 - Consult the dealer for the inspections.
- **The screws and bolts must be tightened to the specified torque.**
Failure to observe this may cause a drop resulting in injury or accidents.
- **Do not install this product in locations subject to vibration.**
Loosening of mounting screws or bolts may cause a fall of the product resulting in injury.
- **The measures of protection against a fall of this product shall be taken.**
Failure to observe this may cause a drop resulting in injury or accidents.
 - Be sure to install the safety wire.
- **Install this product in a location high enough to avoid people and objects from bumping the product.**
Failure to observe this may cause a drop resulting in injury or accidents.
- **Fully insert the power plug into the power outlet.**
Failure to observe this may cause electric shock or heat generation resulting in a fire.
 - Do not use damaged plugs or unstable power outlets.
- **Always disconnect the power cable by holding the power plug.**
Failure to observe this may cause damage to the cord and fire or electric shock.
- **Periodically remove dust or other materials from the power plug.**
A fire may be caused if dust or other materials accumulate on the plug and become moist from humidity.
- **Perform all electrical wiring in accordance with the relevant electrical installation and wiring precautions and regulations.**
Incorrect electrical wiring may cause fire or electrical shock.
 - Have all electrical wiring performed by a licensed electrician.
- **Perform the specified waterproofing when connecting the power cable and power plug.**
Failure to observe this may cause fire or electric shock.
 - Disconnect the power plug and wipe the plug with a dry cloth to remove dust.
- **Turn the power off when wiring this product.**
Failure to observe this may cause electric shock. In addition, short circuit or wrong wiring may cause fire.
- **Do not attempt to disassemble or modify this product.**
Failure to observe this may cause fire or electric shock. Consult the dealer for the repair or inspections.
- **Do not insert any foreign objects.**
This could permanently damage this product. Turn the power off immediately and contact qualified service personnel for service.
- **Do not use this product in an inflammable atmosphere.**
Failure to observe this may cause an explosion resulting in injury.
- **Avoid installing this product in the locations where salt damage occurs or corrosive gas is produced.**
Otherwise, the mounting portions will deteriorate and accidents such as a fall of the product may occur.
- **Use only a dedicated power plug (polarized type).**
If other power plugs are used, the voltage and positive/negative polarities may differ and this may cause fire or electric shock.
- **Do not overload the power outlet or wiring above the specified levels.**
Overloading by having many connections on one power outlet may cause heat generation resulting in a fire.
- **Do not damage the power cable or power plug.**
Do not damage, fabricate, twist, stretch, bundle, or forcibly bend the power cable or power plug. Do not place heavy objects on the power cable or power plug. Keep the power cable and power plug away from heat sources. Using a damaged power cable or power plug may cause electric shock, short circuit, or fire.
 - Consult the dealer for repair.
- **Do not damage internal wiring or plumbing when opening holes in ceiling or walls for installation or wiring, fixing power cables or performing any other installations.**
Failure to observe this may cause earth leakage, electric shock, or fire.
- **Protect the power cable and power plug from becoming pinched in doorways or windows.**
Using damaged power cables and power plugs may cause a short circuit resulting in fire or electric shock.
- **Do not use the power cables for other products.**
Failure to observe this may cause fire or electric shock.
- **Do not strike or give a strong shock to this product.**
Failure to observe this may cause fire or injury.
- **Do not rub the edges of metal parts with your hand.**
Failure to observe this may cause injury.
- **Do not touch this product or the connected cables during thunder (even in the process of work).**
Failure to observe this may cause electric shock.
- **Do not insert/remove the power plug with wet hands.**
Failure to observe this may cause electric shock.
- **Unplug this unit from power supply if it emits smoke, an abnormal smell or makes unusual noise, has been dropped or is damaged in any way.**
These conditions can cause fire or electric shock.
 - Stop using the unit and contact an authorized service center.
- **Do not place containers or other objects which contain water or other liquids on top of the unit.**
Fire or electrical shock may be caused if water or other liquids enter inside the unit.
 - If water or other liquids enter inside the unit, immediately disconnect the power cable and contact an authorized service center.



- **Turn the power off when cleaning this product.**
Failure to observe this may cause fire or injury.
- **Disconnect the power cable when not using the unit for extended periods of time or when performing maintenance.**
Failure to observe this may cause earth leakage or electric shock.

The model number and serial number of this product may be found on the surface of the unit. You should note the model number and 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. _____	For U.S.A.
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Panasonic System Networks Co., Ltd., declares that this equipment is in compliance with the essential requirements and other relevant provisions of Radio & Telecommunications Terminal Equipment (R&TTE) Directive 1999/5/EC.

Declarations of Conformity for the relevant Panasonic products described in this manual are available for download by visiting:

<http://www.ptc.panasonic.eu>

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CE17310

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*Outdoor use limited to 10 mW eirp within the band 2454-2483.5 MHz

Important safety instructions

- 1) Read these instructions.
- 2) Keep these instructions.
- 3) Read all warnings.
- 4) Follow all instructions.
- 5) Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
- 6) Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
- 7) Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
- 8) Only use attachments/accessories specified by the manufacturer.
- 9) 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.
- 10) Unplug this apparatus during lightning storms or when unused for long periods of time.
- 11) 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.



Precautions for use

- This product has no power switch.**
When turning off the power, disconnect the power supply from the 12 V DC power supply.
- To keep on using with stable performance**
Do not use this camera in hot and humid conditions for a long time. Failure to observe this causes component degradation resulting in life shortening of this product.
Do not expose this camera to direct heat sources such as a heater.
- Do not touch the lens cover with your bare hands.**
A dirty lens cover causes deterioration of picture quality.
- Handle this camera with care.**
Do not drop this camera, nor apply shock or vibration to this camera. Failure to observe this may cause trouble.
- About the PC monitor**
Displaying the same image on a monitor for a long time may damage the monitor. It is recommended to use a screen-saver.
- When an error is detected, this product will restart automatically.**
This product will be inoperable for around 2 minutes after the restart just as when the power is turned on.
- Product disposal/transfer**
Data saved on this product or a storage device used with this product may lead to personal information leakage. When it is necessary to dispose or give this product to someone, even when for repair, make sure that there is no data on this product.
- Cleaning this product body**
Be sure to turn off the power before cleaning. Failure to observe this may cause injury. Do not use strong abrasive detergent when cleaning this product. Otherwise, it may cause discoloration. When the dirt is hard to remove, use a damp cloth and wipe the dirty areas. Then, wipe with a dry cloth to remove any moisture.
- Transmission interval**
Image transmission interval may become slow depending on the network environment, PC performance, shooting subject, access number, etc.
- Code label**
The code labels (accessory) are required at inquiry for trouble. Use caution not to lose these labels. It is recommended to paste one of the labels onto the CD-ROM case.
- About the MOS image sensor**
● When continuously shooting a bright light source such as a spotlight, the color filter of the MOS image sensor 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.
- AVC Patent Portfolio License**
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- Flickering**
Due to the influence of lighting, flickering may sometimes happen. In this case, select "Indoor scene" for "Light control mode". Select "Indoor scene(50 Hz)" or "Indoor scene(60 Hz)" in accordance with the power supply frequency in your locality. Refer to the Operating Instructions (included in the CD-ROM) for further information about the setting.
- Under extremely strong lighting, flickering may happen even when "Indoor scene" is selected for "Light control mode".** When the brightness (illumination) level on the screen is set to a relatively low level with the [Brightness] buttons, flickering may frequently happen. In such cases, either of the following can reduce flickering.
- Moderate the illumination intensities of objects by changing the camera direction.
 - Set the brightness (illumination) level on the screen to a brighter level with the [Brightness] buttons.
- White-out on images caused by the effect of light control mode**
When "Indoor scene" is selected for "Light control mode", the tone of the brighter parts on the screen may be deteriorated than the case when "ELC" is selected.
- Color blurring on detailed drawing patterns**
When there are detailed drawing patterns on images, color blurring may happen over these parts.
- Consumable parts**
The following are consumables. Replace them in accordance with their lives. Their lives vary depending on use environment and conditions.
Lifetime is just an indication when using the camera at +20 °C [68 °F].
 - Panning motor, tilting motor, flat cable for tilting: Approx. 3.7 million operations.
- Lens and pan/tilt head**
If a lens and pan/tilt head are not performed for a long period of time, the grease coating inside these parts may become sticky. That may obstruct the parts from moving. To prevent this, move the lens or pan/tilt head periodically.

Specifications

● Basic	
Power source:	12 V DC WV-SW174W: AC Adaptor INPUT: 100-120 V AC 50 Hz/60 Hz (Only use the Panasonic AC adaptor)
Power consumption:	12 V DC: 510 mA
Ambient operating temperature:	-20 °C to +50 °C [-4 °F to 122 °F]
Ambient operating humidity:	Less than 90 % (no condensation)

Main functions

- **Corresponding to outdoor use**
This unit complies with waterproof and is able to install outdoors. (IEC 60529 compliant IP55)
- **H.264 and JPEG triple encoding**
A total of 3 outputs, comprising of 2 H.264 outputs and 1 JPEG output, can be provided.
- **Wireless LAN function (IEEE802.11 n/g/b)**
It is possible to monitor camera images and configure camera settings over a wireless network.
- **Adaptive darkness correction mode**
Corrects the blacked-out parts of dark areas of objects that have different illumination intensities.
- **Panning/tilting function and preset position function**
A single camera provides wide area monitoring.
- **Interactive communication with audio**
By using the audio output connector and the microphone in connector, receiving audio from the cameras on a PC and transmitting audio from the PC to the cameras is available.
- **WPS (Wi-Fi Protected Setup) function**
WPS enables the camera to automatically obtain the connection configuration information and the security configuration information of the wireless router. WPS can be configured by pressing the WIRELESS button (WPS indicator) (PBC method) or entering an 8 digit pin code (Pin code method).

Standard accessories

Confirm the following items are included in the camera's packaging.

Flexible Stand (1 pc.) 	Connector Cover (P model, 1 pc.) 	Connector Cover (E model, 1 pc.) 	Sunshade (1 pc.)
Screw A (5 pcs.) 	Screw B (4 pcs.) 	Washer S (1 pc.) 	Washer L (1 pc.)
Safety Wire (1 pc.) 	Self Bonding Tape (1 pc.) 	Foam Strip (1 pc.) 	Power cable plug (1 pc.)
AC Adaptor (P model) (1 pc.) 	AC Cord (P model) (1 pc.) 	Extension Cord (P model) (1 pc.) 	
Installation Guide (this document) (1 pc.) Configure the settings of the camera (leaflet) ... (1 pc.) Warranty card (P model) (1 pc.) CD-ROM*1 (1 pc.) Code label* (1 pc.)			

*1 The CD-ROM contains the operating instructions and different kinds of tool software programs.
*2 This label may be required for network management. The network administrator shall retain the code label.

Option

- You will need the following additional items to install and configure the camera.**
[Locally procured]
 - a PC (used to view settings and images)
 - a router, or a wireless router
 - a LAN cable (CAT-5 straight cable)
 - 12 V DC power supply (E model)**Caution:** Only connect 12 V DC power supply.
* FOR UL LISTED MODELS, ONLY CONNECT 12 V DC CLASS 2 POWER SUPPLY.

About the user manuals

- There are 3 sets of operating instructions for the WV-SW174W (P model), WV-SW174WE (E model) as follows.
 - Installation Guide: Explains how to install and connect devices.
 - Configure the settings of the camera (leaflet): Explains how to configure the network.
 - Operating Instructions (included in the CD-ROM): Explains how to perform the settings and how to operate this camera.Adobe® Reader® is required to read these operating instructions on the provided CD-ROM. When the Adobe Reader is not installed on the PC, download the latest Adobe Reader from the Adobe web site and install it.
"WV-SW174W" or "SW174WE" shown in the instructions and illustrations used in these operating instructions indicates the WV-SW174W, WV-SW174WE.
The screens used in these operating instructions show the cases of P models.

System requirements for a PC

Refer to "Configure the settings of the camera" (leaflet) for information about the system requirements for a PC.	
Monitor output:	VBS: 1.0 V [p-p]/75 Ω, composite, ø3.5 mm mini jack
EXT I/O terminal cable:	ALARM IN 1, ALARM IN 2/ ALARM OUT, ALARM IN 3/ AUX OUT, GND, 12 V DC
Microphone/Line input:	ø3.5 mm monoaural mini jack, Input impedance: Approx. 2.2 kΩ For microphone input: Applicable microphone: Plug-in power type Supply voltage: 3.3 V ±0.5 V For line input: Input level: Approx. -10 dBV
Audio output:	ø3.5 mm stereo mini jack (monoaural output) Output impedance: Approx. 560 Ω, Line level
Dustproof/ Waterproof:	IP55* * Only when installation work specified in this book is properly performed and appropriate waterproof treatment is performed
Dimensions:	100 mm (W) x 100 mm (H) x 84 mm (D) [3-15/16 inches (W) x 3-15/16 inches (H) x 3-5/16 inches (D)] (excluding projection)
Mass:	Main body: 370 g (0.82 lbs)
Finish:	Main body : PC/ABS resin, silver Dome section: Clear polycarbonate resin
● Camera	
Image sensor:	1/4 type MOS image sensor
Effective pixels:	Approx. 1.3 megapixels
Scanning area:	3.52 mm (H) x 2.64 mm (V) [1/8 inches (H) x 3/32 inches (V)]
Scanning system:	Progressive
Minimum illumination:	Color: 0.6 lx [0.06 footcandle] (F2.2, Auto slow shutter: Off (1/30 s), Gain: On (High)) 0.038 lx [0.0038 footcandle] (F2.2, Auto slow shutter: max. 16/30 s, Gain: On (High)) BW: 0.5 lx [0.05 footcandle] (F2.2, Auto slow shutter: Off (1/30 s), Gain: On (High)) 0.031 lx [0.0031 footcandle] (F2.2, Auto slow shutter: max. 16/30 s, Gain: On (High)) * Converted value
Wide dynamic range:	On/Off
Face WDR:	On/Off
Gain (AGC):	On (Low)/ On (Mid)/ On (High)/ Off
Adaptive black stretch:	On/Off
Light control mode setting:	Indoor scene [50 Hz/60 Hz]/ELC
ELC	ELC(1/30 s), ELC(2/100 s), ELC(3/120 s), ELC(2/100 s), ELC(2/120 s)
(Maximum exposure time):	ELC(1/100 s), ELC(1/120 s), ELC(1/250 s), ELC(1/500 s), ELC(1/1000 s), ELC(1/2000 s), ELC(1/4000 s), ELC(1/10000 s)
Auto slow shutter:	Off (1/30 s), Max. 2/30 s, Max. 4/30 s, Max. 6/30 s, Max. 10/30 s, Max. 16/30 s
Day & Night (electrical):	Off/Auto
White balance:	ATW1/ ATW2/ AWC
Digital noise reduction:	High/Low
Video analytics	On/Off (with the XML notification setting)
Face detection:	
Privacy zone:	Gray/Off (up to 2 zones available)
Camera title on screen:	Up to 20 characters (alphanumeric characters, marks), On/Off
Video motion detection (MDI alarm):	On/Off, (available at each preset)

● Lens	
Zoom ratio:	Extra zoom: 2x (at VGA resolution)
Digital (electronic) zoom:	8x (Max 16x combined with Extra Zoom at VGA)
Focal length:	1.95 mm
Maximum aperture ratio:	1: 2.2
Focus range:	∞ - 0.5 m
Angular field of view:	Horizontal: 85°, Vertical: 68°
● Panning/tilting platform	
Panning range:	-47.5° - +47.5°
Panning speed:	Manual: Approx. 5 °/s - 80 °/s, Preset: Up to approx. 80 °/s
Tilting range:	-45° - +10°
Tilting speed:	Manual: Approx. 5 °/s - 80 °/s, Preset: Up to approx. 80 °/s
Number of the preset positions:	64
Map shot:	Preset map-shot
Self return:	10 s/ 20 s/ 30 s/ 1 min/ 2 min/ 3 min/ 5 min/ 10 min/ 20 min/ 30 min/ 60 min
● Wireless	
Antenna:	1 x 1 (Diversity)
Transmission system:	SISO (Single Input/Single Output)-OFDM system, OFDM system, DSSS system
Communication standard:	International standard IEEE802.11 n/IEEE802.11 g/ IEEE802.11 b compliant
Frequency range/ Channel (center frequency):	WV-SW174W: IEEE802.11 n/g/b 2.412 GHz - 2.462 GHz (1 - 11ch) WV-SW174WE: IEEE802.11 n/g/b 2.412 GHz - 2.472 GHz (1 - 13ch)

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Network security

As you will use this unit connected to a network, your attention is called to the following security risks.
① Leakage or theft of information through this unit
② Use of this unit for illegal operations by persons with malicious intent
③ Interference with or stoppage of this unit 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 unit in a network secured by a firewall, etc.
- If this unit 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-spware 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 E-mail information, FTP server information and DDNS server information.
- After the unit is accessed by the administrator, make sure to close the browser.
- Change the administrator password periodically.
- Do not install the camera in locations where the camera or the cables can be destroyed or damaged by persons with malicious intent.

Troubleshooting

Before asking for repairs, check the symptoms with the following table.
Contact your dealer if a problem cannot be solved even after checking and trying the solution in the table or a problem is not described below.

Symptom	Cause/solution
Power is not turned on.	▶ <ul style="list-style-type: none">● Is the 12 V DC power cable plug (accessory) firmly inserted into the 12 V DC power terminals of the camera? → Confirm the power plug is firmly inserted.● Be sure to use the power cord plug provided with this product.
Data transfer rate:	IEEE802.11 n: 6.5 - 72.2 Mbps/ IEEE802.11 g: 6 - 54 Mbps IEEE802.11 b: 1 - 11 Mbps
Access method:	Infrastructure mode
Authentication method:	Open System
Security:	WPA/WPA2-PSK (TKIP/AES) WEP (64 bit/128 bit)
WPS:	PBC method (push button method), PIN method (PIN code method)
● Wireless hardware	
LED:	Wireless (wireless status display)
Interface:	WIRELESS button (for setting up WPS with the PBC method)
● Network	
Network:	10BASE-T/100BASE-TX, RJ45 connector
Resolution:	Aspect ratio: 4:3 H.264 1280x960/ VGA (640x480)/ QVGA (320x240) max.30 fps JPEG 1280x960/ VGA (640x480)/ QVGA (320x240) max.30 fps Aspect ratio: 16:9 H.264 1280x720/ 640x360/ 320x180 max.30 fps JPEG 1280x720/ 640x360/ 320x180 max.30 fps
Image compression method:	H.264 Image quality: Low/ Normal/ Fine Transmission type: Unicast/Multicast Bit rate: Constant bit rate/ Best effort: 64 kbps/ 128 kbps/ 256 kbps/ 384 kbps/ 512 kbps/ 768 kbps/ 1024 kbps/ 1536 kbps/ 2048 kbps/ 3072 kbps/ 4096 kbps/ 8192 kbps Frame rate: 1 fps/ 3 fps/ 5 fps/ 7.5 fps/ 10 fps/ 12 fps/ 15 fps/ 20 fps/ 30 fps
	JPEG Image quality: 0 SUPER/FINE/1 FINE/2 3/ 4/ 5 NORMAL/ 6/

1 Check the installing place

Precautions for Installation

Panasonic assumes no responsibility for injuries or property damage resulting from failures arising out of improper installation or operation inconsistent with this documentation.

Installation area for this product

- Select an appropriate place for the installation area (such as a strong wall or ceiling) in your particular environment.
- Avoid installing the camera in locations where it can be exposed to direct sunlight or rain from all directions. Install the camera in an appropriate location such as on an exterior wall of a building.

Do not place this product in the following places:

- Locations where a chemical agent is used such as a swimming pool
- Locations subject to humidity, dust, steam and oil smoke.
- Locations that have a specific environment that is subject to an inflammable atmosphere or solvents
- Locations where a radiation, an X-ray, a strong radio wave or a strong magnetic field is generated
- 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 the specified range (-20 °C to +50 °C [-4 °F to +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.

Before installation

- When this camera is mounted on a wooden ceiling or a wall, use the Screw B (accessory). Screws to be used for other materials are not provided. Prepare the screws according to the material, structure, strength and other factors of the mounting area and the total weight of objects to be mounted.
- Ensure that the mounting surface, anchor and screws are sufficiently strong.
- Do not mount this product on a plaster board or a wooden section because they are too weak. If this product is unavoidably mounted on such a section, the section shall be sufficiently reinforced.

Design and engineer the power supply system to turn on/off the power of this product.

The product has no power switch. When installing the product, use a power supply device equipped with the ON-OFF switch for servicing.

About the network connection

When connecting to a network using the network cable of this product, observe the following. When wiring for the network, design and engineer not to be affected by thunder.

Screw tightening

- The screws and bolts must be tightened with an appropriate tightening torque according to the material and strength of the installation area.
- Do not use an impact driver. Use of an impact driver may damage the screws or cause tightening excessively.
- When a screw is tightened, make the screw at a right angle to the surface. After tightening the screws or bolts, perform visual check to ensure tightening is enough and there is no backlash.

Procure fixing screws that are not made to be used with wooden surfaces separately.

The fixing screws supplied with this product are only for use with wooden surfaces. Required pull-out capacity of a single screw/bolt is 294 N (66.09 lbf) or more.

Do not remove or loosen the internal camera screws.

Do not loosen the internal camera screws. Otherwise, water exposure may cause damage or malfunction of camera, or camera dropping may result in injury.

Radio disturbance

When this product is used near TV/radio antenna, strong electric field or magnetic field (near a motor, a transformer or a power line), images may be distorted and noise sound may be produced.

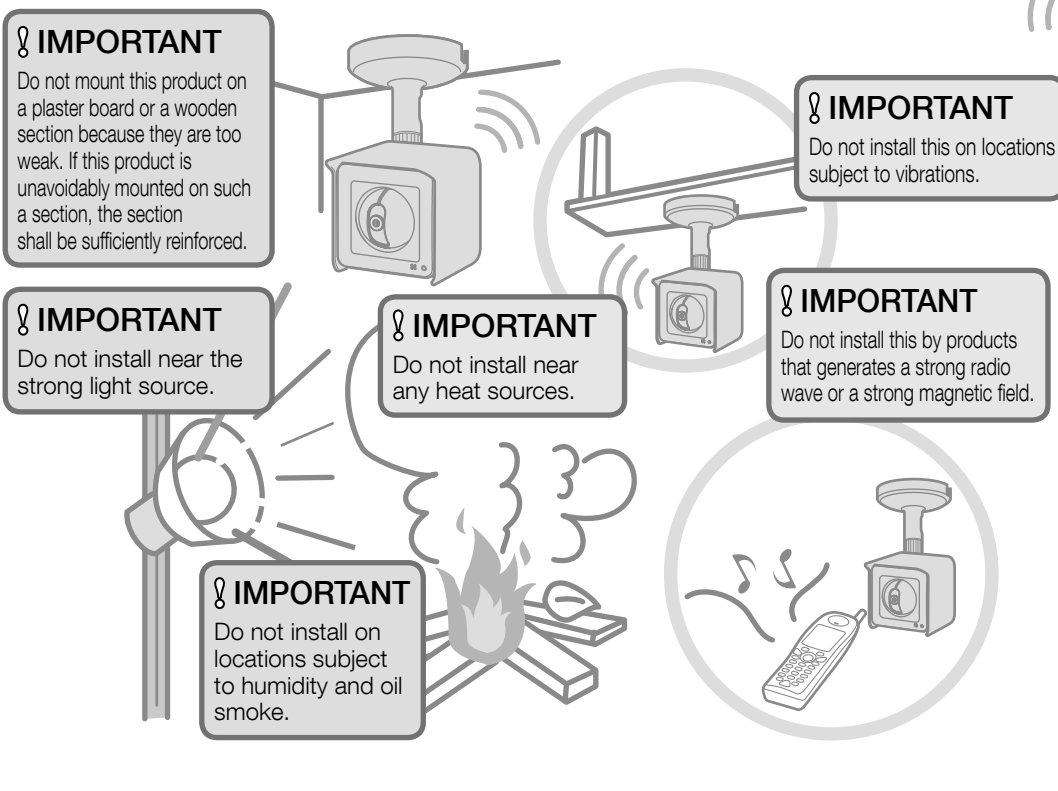
Router

When connecting this product to the Internet, use a broadband router with the port forwarding function (NAT, IP masquerade). Refer to the Operating Instructions (included in the CD-ROM) for further information about the port forwarding function. When connecting the camera to a wireless LAN, it is recommended to select the enhanced encryption "WPA2-PSK (AES)" or "WPA-PSK (AES)" for the wireless router's encryption settings.

Time & date setting

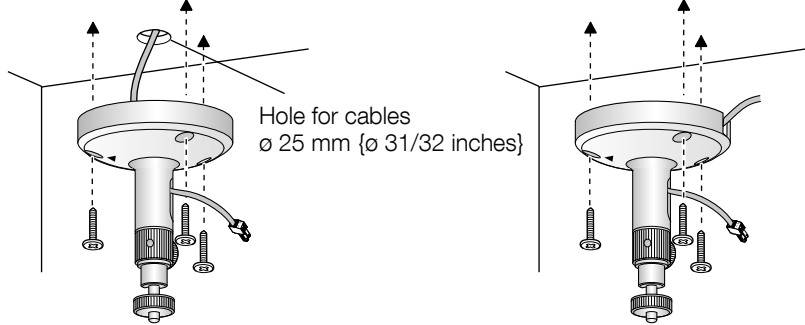
It is necessary to set the time & date before putting this product into operation. Refer to the Operating Instructions on the provided CD-ROM for descriptions of how to perform the settings.

Determining the mounting position



Determining how to wire the cable

It is necessary to make a hole in the ceiling or wall to pass the cables through. Make a hole 25 mm (31/32 inches) in diameter.

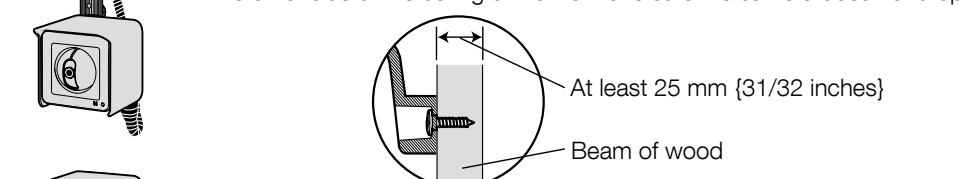


- When using a wireless connection, configure the wireless settings for the camera and the wireless router before installing the camera.
- Confirm in advance that the camera can connect with the wireless router from its installed place. Refer to "3 Connections" for further information.

Determining how to mount the camera

■ Installing the camera on the ceiling or wall

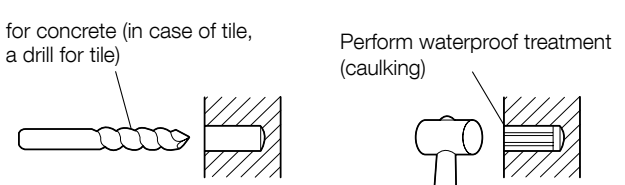
- Make sure the flexible stand is firmly mounted on a beam of wood (25 mm (31/32 inches) and greater) etc. When there is no beam, apply a board on the other side of the ceiling or wall to make sure the camera does not drop.



When mounting on a mortar or concrete surface

Prepare anchors for 4 mm (5/32 inches) diameter screws for mounting. Mortar ceilings or walls break easily when drilling. Be careful of pieces of mortar which may become loose and fall.

1. Place the flexible stand on the ceiling or wall where you plan to mount the flexible stand and mark the points where you are going to make holes.
2. Make holes with an electric drill. Insert anchors (locally procured) into the holes and push them inside the holes with a hammer.
3. Mount the flexible stand using the screws.

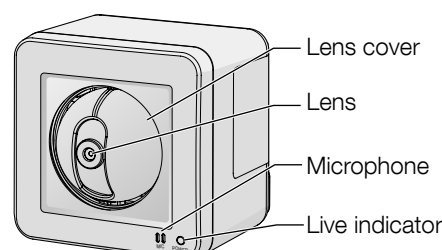


■ Tripod Mount

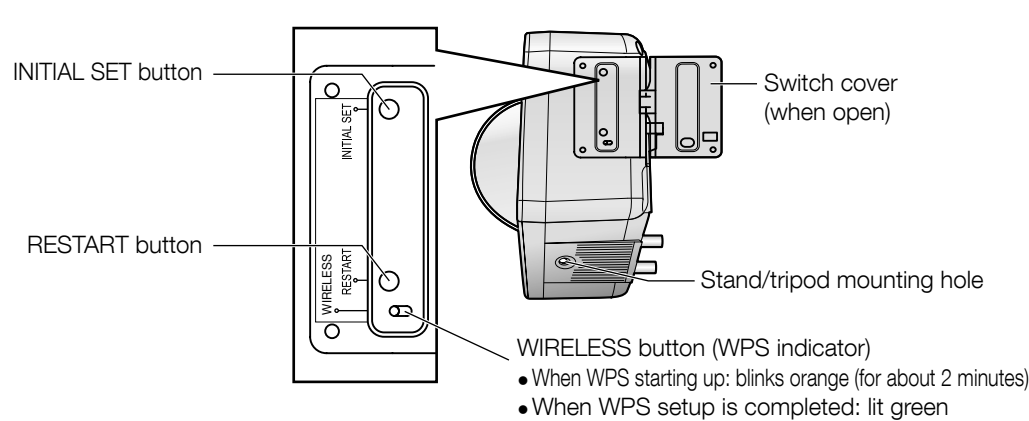
It is also possible to mount the camera on a standard tripod stand (locally procured).

2 Major operating controls

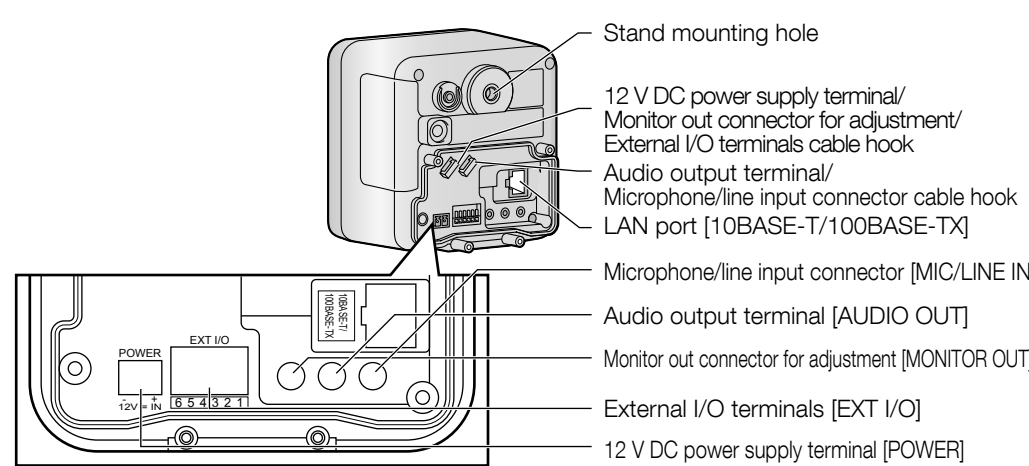
<Front view>



<Side and bottom view>



<Rear view>



External I/O terminals

Pin	Function
6	DC power output • Power output voltage 12 V • Power output current 100 mA
5	GND
4	GND
3	EXT I/O terminal 3 (ALARM IN 3/ AUX OUT)
2	EXT I/O terminal 2 (ALARM IN 2/ ALARM OUT)
1	EXT I/O terminal 1 (ALARM IN 1)

About the [INITIAL SET] button

After turning off the power of the camera, turn on the power of the camera while holding down this button, and wait for around 5 seconds or more without releasing this button. Wait around 3 minute after releasing the button. The camera will start up and the settings including the network settings will be initialized. Before initializing the settings, it is recommended to write down the settings in advance. The initialization will be complete when the live indicator stops blinking orange and lights off. Note that the preset position settings and the CRT key (SSL encryption key) used for the HTTPS protocol will not be initialized.

⚠ IMPORTANT

- Do not turn off the power of the camera during the process of initialization. Otherwise, it may fail to initialize and may cause malfunction.

About the [RESTART] button

When the camera is on, you can also restart the camera by pressing the RESTART button. Press and hold the RESTART button for about one second with a pointed object. Restarting is completed when the camera's pan/tilt performs its initial movement.

About the live indicator and the WIRELESS button (WPS indicator)

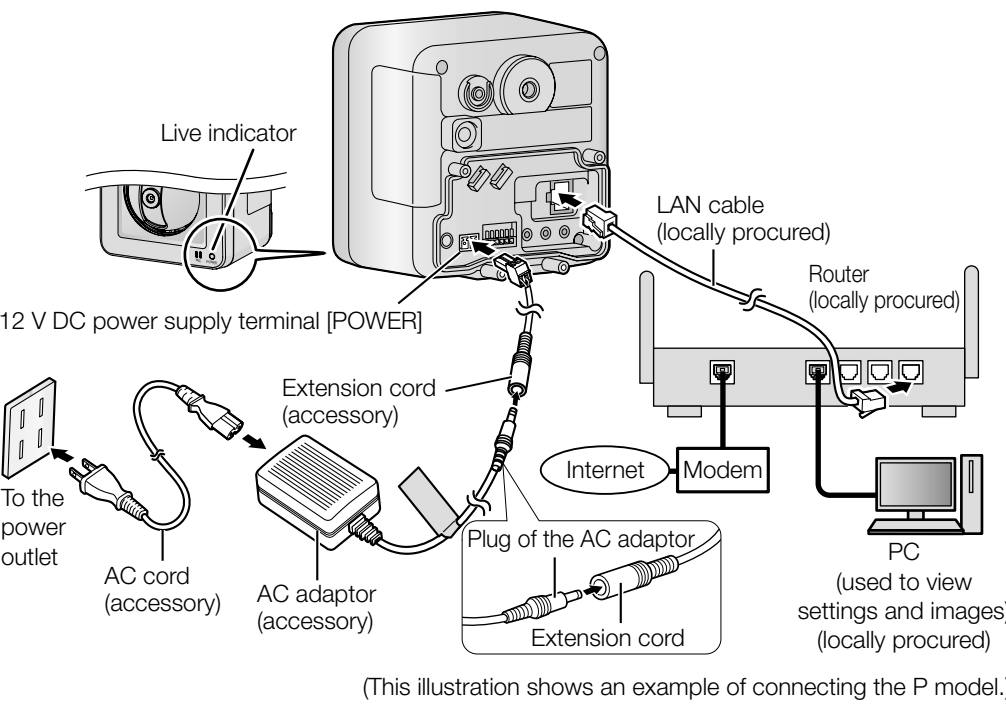
Refer to "Configure the basic settings [Basic]" of the Operating Instructions (included in the CD-ROM) for further information.

3 Connections

When connecting the camera using LAN cable

Configure your PC so that it can connect to the internet through the router.

- For E model, only connect 12 V DC power supply.



1 Connect the LAN cable (locally procured) to the LAN port of the camera and the LAN jack of the router.

When connecting the camera using a wireless LAN, do not plug the LAN cable into the LAN port. Refer to "When connecting the camera using a wireless LAN" for further information.

2 Connect the cable of 12 V DC power supply or the extension cord (P model) to the power cord plug (accessory).

Refer to "Connecting the power cord plug".

3 Connect the plug of the AC adaptor to the extension cord (P model).

Fully insert the plug of the AC adaptor into the jack of the extension cord.

4 Insert the power cord plug into the 12 V DC power supply terminal on the rear of the camera.

5 Connect the AC cord to the AC adaptor, then plug the AC cord into the power outlet.

The lens will pan and tilt when the camera is turned on (the operating sound can be heard). When the network setting is completed, the live indicator stops blinking green and lights green.

After connecting the camera, refer to "Configure the settings of the camera" (leaflet) and perform the camera settings.

Connect the power cord plug

Caution:
● FOR UL LISTED MODEL(S), ONLY CONNECT 12 V DC CLASS 2 POWER SUPPLY.

1 Loosen the screw of the power cord plug (accessory).

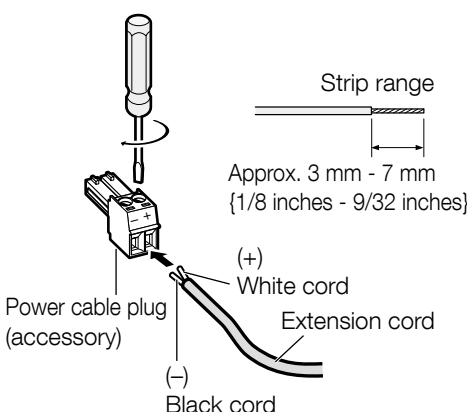
2 Connect the cable of the 12 V DC power supply to the power cord plug.

- Strip 3 mm to 7 mm (1/8 inches to 9/32 inches) from the end of the wire, and twist the stripped part of the wire sufficiently to avoid short circuit.
- Specification of cable (wire): 16 AWG - 24 AWG, Single core, twisted
- Check whether the stripped part of the wire is not exposed and is securely connected.

3 Tighten the screw of the power cord plug.

⚠ IMPORTANT

- Be sure to use the AC adaptor provided with this product. (P model)
- Be sure to use the power cord plug provided with this product.
- When connecting the cable of 12 V DC power supply to the power cable plug, make sure to use the correct polarity. Using incorrect polarity may cause issues such as damage to the camera or malfunction.
- Be sure to fully insert the power cord plug into the 12 V DC power supply terminal. Otherwise, it may damage the camera or cause malfunction.



(This illustration shows an example of connecting the P model.)

⚠ WARNING

- Adequate waterproof treatment is required for the AC adaptor, the AC cord, and the extension cord. (The AC adaptor and the AC adaptor cord are not waterproof.) Failure to observe this may cause fire or electric shock. Never touch wet AC adaptors or AC cords. Consult the dealer for repair.

When connecting the camera using a wireless LAN

Use the camera's WIRELESS button (WPS indicator) to automatically perform wireless settings.

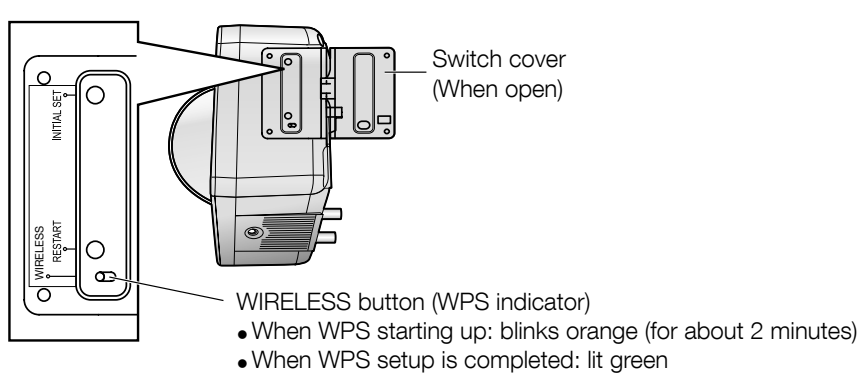
1 Turn on the camera without connecting the LAN cable to enable the wireless settings.

After the initial pan/tilt operations are performed, the live indicator stops blinking orange and lights orange. The live indicator lights orange and the camera starts up in wireless LAN mode about 90 seconds after the camera was turned on.

2 Select ON for the WPS function (Push-button method (PBC)) on the wireless router. (For more information, refer to the operating instructions included with your wireless router.)

3 Press and hold down the WIRELESS button for a second or more until the WIRELESS indicator blinks orange.

- The camera and the wireless router automatically start performing wireless settings. Settings may take up to 2 minutes to be performed.
- When the automatic wireless settings have successfully completed, the camera restarts about 5 seconds after the WIRELESS button stops blinking orange and lights green.
- During its reboot, when the wireless connection has been successfully completed about 90 seconds after the WIRELESS button has gone off, the WIRELESS button lights green again. The wireless settings are updated.



Note

- If about 2 minutes pass after the WIRELESS button starts blinking and the wireless connection is not completed, the WIRELESS button will blink red for about 10 seconds and then go off. If this happens the wireless settings have failed. Check the wireless router's settings and connection procedures, and then try performing the settings again.
- If the WPS settings fail to automatically configure, check the settings of the wireless router and the camera.
- If you want to turn off the WIRELESS button and live indicator's green light, select "Off" for the "Indicator" on the [Basic] tab of the "Basic" page.

⚠ IMPORTANT

- WPS function is unavailable when the wireless router is set to shared key authentication.
- When the wireless router or other devices are set to use the ESS-ID stealth function (hidden SSID), the WPS function is unavailable.
- During the configuration of WPS setting, another wireless device may be temporarily caused interference by the wireless router.
- If the wireless router is configured to use the MAC address filtering feature, the WPS function may be unavailable. Check the settings of the wireless router.
- If the settings for the WPS function are performed when no wireless device to be connected to the wireless network, etc. the configuration will be automatically cancelled after 2 minutes. (Check the wireless router in use before configuration.)
- When there are multiple wireless routers on the same network which have the WPS function on (Registrars), the WPS function may not be able to configure automatically.

After connecting the camera, refer to "Configure the settings of the camera" (leaflet) and perform the camera settings.

- Confirm the status of the wireless connection on the [Status] tab of the "Wireless" page.

About the range of use for wireless communication

Do not use this product in the following areas or locations.

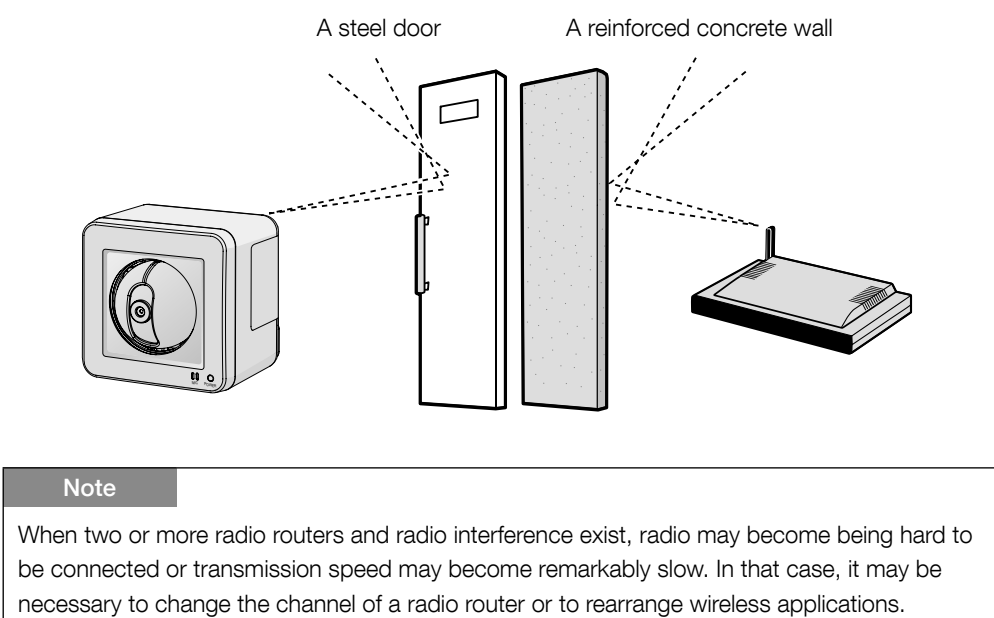
(It may cause interference to radio communications or mobile communication.)

- Indoor areas that have specified radio stations or mobile communications equipment
- Locations near microwave ovens or Bluetooth devices
- Indoor areas that use antitheft devices or 2.4 GHz frequency devices such as POS systems

Change the installation location of the camera when there are materials or objects such as the following between the camera and a wireless router.

(When there are materials or objects that are difficult for radio waves to pass through in the installation area, wireless transmission may fail or the transmission speed may become slower.) (When there are materials or objects that reflect radio waves in the installation area, wireless transmission may fail or the transmission speed may become slower due to interference from reflected radio waves.)

- A metallic door or shutter
- A wall made of tin
- A wall with an insulation material that contains aluminum foil
- A steel shelf
- A wall made of concrete, stone or brick
- Fireproof glass
- Several walls separated by open space

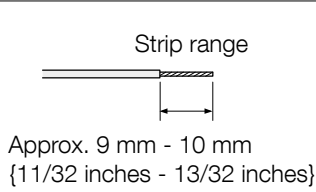


External I/O terminals

Connect external devices to the EXT I/O terminal.

When connecting an external device, remove 9 mm - 10 mm (11/32 inches - 13/32 inches) of the outer jacket of the cable and twist the cable core to prevent the short circuit first.

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



⚠ IMPORTANT

- Do not connect 2 wires or more directly to a terminal. When it is necessary to connect 2 or more wires, use a splitter.
- Input and output of the external 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 Operating Instructions (included in the CD-ROM) for further information.
- The default of EXT I/O terminals is "Off". When "Off" is selected, it is possible to connect external devices as well as the input setting.
- When using the EXT I/O terminals as the output terminals, ensure they do not cause signal collision with external signals.
- In order for the EXT I/O terminal to detect alarm inputs when the terminal status is changed from Open to Close (On) or from Close to Open (Off), about 100 ms or more is needed. Because alarms cannot be detected for about 5 seconds after a detection is made, alarm inputs received within about 5 seconds after an alarm is detected are not detected.

Installing the camera on the ceiling or wall

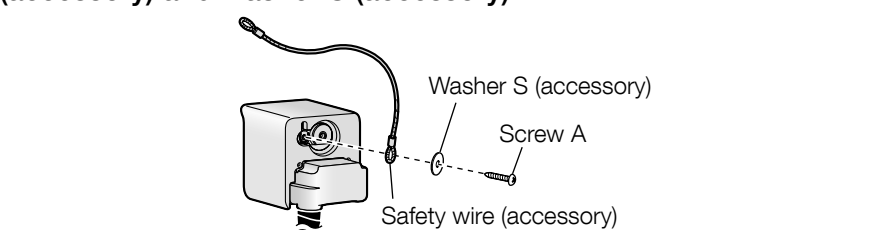
Adjust the camera to a suitable position/direction while confirming the images actually displayed on the computer screen.

Note
Make sure the live indicator is always in the lower right corner when you mount.

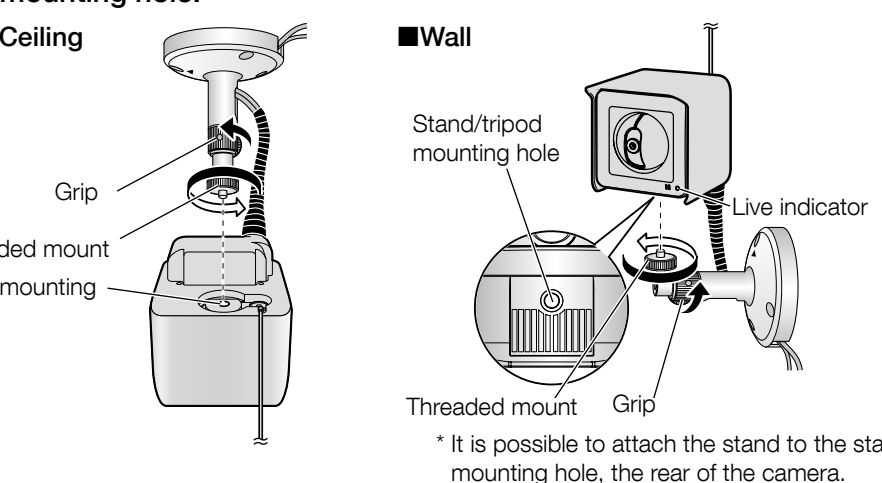
1 Place the flexible stand on the ceiling or wall, and determine the mounting position of the stand.

Make sure the flexible stand is firmly mounted on a beam of wood (25 mm (31/32 inches) and greater) etc. When there is no beam, apply a board on the other side of the ceiling or wall to make sure the camera does not drop.

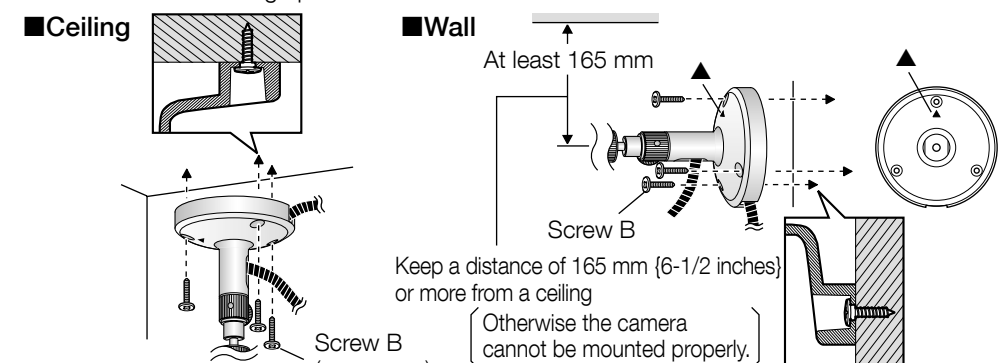
2 Secure the safety wire (accessory) to the camera using screw A (accessory) and washer S (accessory).



3 Attach the camera by screwing the threaded mount into the stand mounting hole.

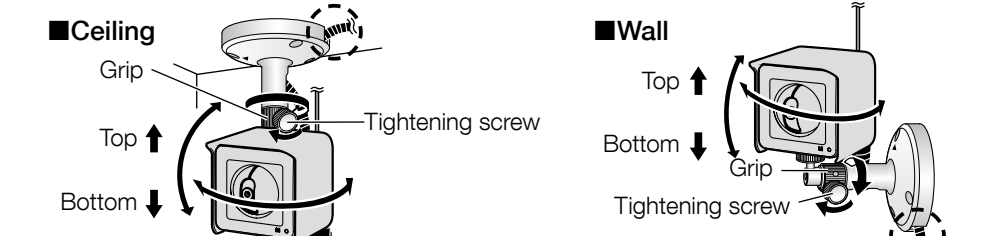


4 Mount the flexible stand firmly to the ceiling or wall with screw B (accessory). When mounting the flexible stand to the wall, position the flexible stand so that the "▲" marker is facing upward.

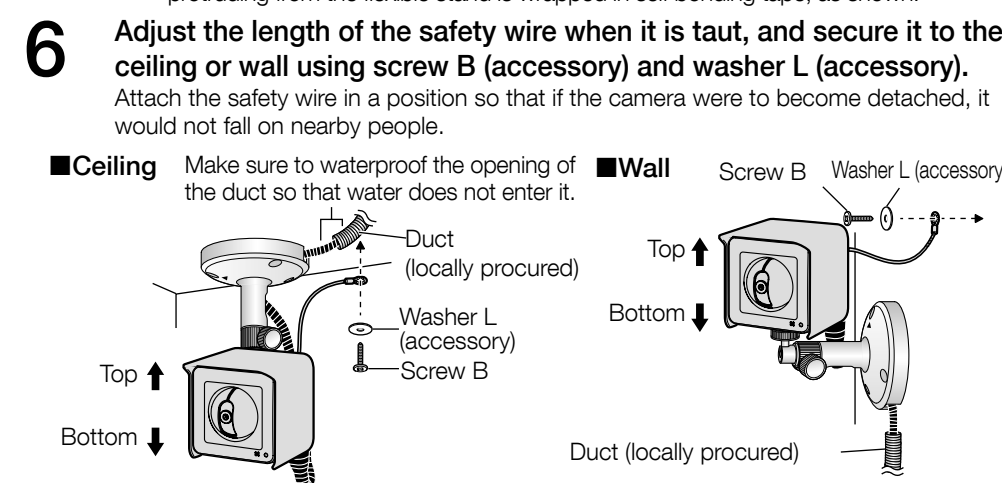


5 Adjust the camera position and tighten the flexible stand grip and the tightening screw firmly.

The fixing position of the tightening screw can be adjusted according to the direction the camera is facing and its angle.



6 Adjust the length of the safety wire when it is taut, and secure it to the ceiling or wall using screw B (accessory) and washer L (accessory). Attach the safety wire in a position so that if the camera were to become detached, it would not fall on nearby people.



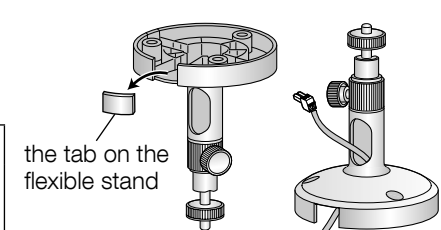
4 Mounting the Camera

Before installing the camera, check that the camera settings have been completed. Refer to "Configure the settings of the camera" (leaflet).

- For P models: Refer to "Mounting the Camera" (leaflet) for descriptions of how to mount the UL listed model(s).
- The connector cover for E model is used in the following procedures.

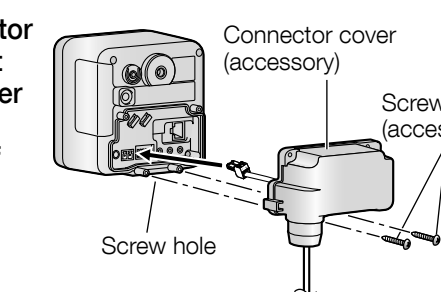
1 Remove the tab on the flexible stand (accessory). Then pass the cables through the notch.

Note
When passing all cables through a duct (locally procured) for waterproofing without removing the tab, wrap the tab of the shaft of the stand with tape or other materials (locally procured). In this case proceed to step 2.



2 Pass the cables through the connector cover (accessory), and then connect all cables. Attach the connector cover by fastening screw A (accessory). (Recommended tightening torque of the connector cover: 0.6 N·m (0.44 lbf·ft))

Connect all necessary cables, AC adaptor, LAN, audio/video, etc.

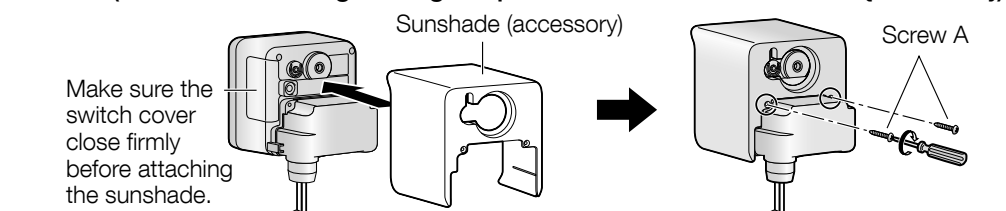


⚠ IMPORTANT

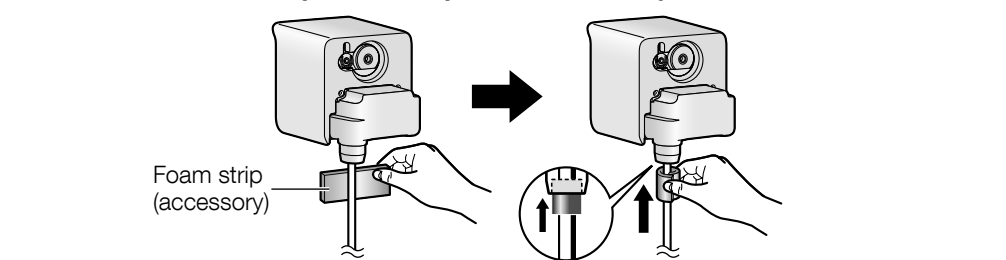
- When mounting the camera, make sure to wrap the AC adaptor cord (if used) and other cables (external microphone or speaker cable, video cable, etc.) around the hooks as shown to ensure secure connections.



3 Attach the sunshade (accessory) by fastening screw A. (Recommended tightening torque of the sunshade: 0.6 N·m (0.44 lbf·ft))



4 Wrap the cables in the included foam strip (accessory) and insert the foam strip into the opening of the connector cover leaving about 10 mm (3/8 inches) of the foam exposed, as shown.



Note

Adequate waterproof treatment is required for the cables when installing the camera outdoors. Failure to observe this may cause water leakage resulting in malfunction.

5 Wrap the first 20 cm (7 7/8 inches) of the cables (starting with the connector cover) using the included self bonding tape (accessory).

Make sure to wrap the opening of the connector cover thoroughly (three or four times). Stretch the tape to twice its length when you wrap the cables. Overlap the tape when you wrap the cables. When mounting the camera on a tripod, make sure to wrap the self bonding tape (locally procured) around the cables until a suitable height according to the height of the tripod.

