**Canon**

Network Camera

# VB-H710F/VB-M700F Installation Guide

Thank you for purchasing Canon Network Camera VB-H710F/VB-M700F (hereafter referred to as the camera). The camera is for indoor use only.
Be sure to read "Installation Guide" (this document) and "Operation Guide" (included in the Setup CD-ROM) before use.
This "Installation Guide" explains the installation method of the camera. Be sure to read the "Safety Precautions" section for correct use. After reading this Installation Guide, keep it in a readily accessible location for future reference. The detailed procedures for using this camera are explained in the "Operation Guide". Read these guides carefully before using the camera to ensure correct use.

* For the latest information (firmware and included software, user manuals, operating environment, etc.), please check our website.

⚠️**WARNING** To reduce a risk of fire or electric shock, do not expose this product to rain or moisture.

⚠️**Caution** Request a professional installer for all camera installation work. Never try to install the camera yourself. Doing so may result in unforeseen accidents such as dropping the camera or electric shock.

## Check Included Items

This product comes with the following items. If any item is missing, contact the dealer where you purchased the product.

1. VB-H710F or VB-M700F
2. Power connector
3. Setup CD-ROM
4. Installation Guide (This document)
5. Warranty card
6. Notice

Write the serial number and MAC address of the camera (printed on the seal at the top of the camera) in the field below before storing this Installation Guide in a safe location.

Serial number _____

MAC Address _____

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### Only for European Union and EEA (Norway, Iceland and Liechtenstein)

These symbols indicate that this product is not to be disposed of with your household waste, according to the WEEE Directive (2012/19/EU), the Battery Directive (2006/66/EC) and/or national legislation implementing those Directives.

If a chemical symbol is printed beneath the symbol shown above, in accordance with the Battery Directive, this indicates that a heavy metal (Hg = Mercury, Cd = Cadmium, Pb = Lead) is present in this battery or accumulator at a concentration above an applicable threshold specified in the Battery Directive.

This product should be handed over to a designated collection point, e.g., on an authorized one-for-one basis when you buy a new similar product or to an authorized collection site for recycling waste electrical and electronic equipment (EEE) and batteries and accumulators. Improper handling of this type of waste could have a possible impact on the environment and human health due to potentially hazardous substances that are generally associated with EEE. Your cooperation in the correct disposal of this product will contribute to the effective usage of natural resources.
For more information about the recycling of this product, please contact your local city office, waste authority, approved scheme or your household waste disposal service or visit www.canon-europe.com/weee, or www.canon-europe.com/battery.

## Notes on Privacy and Publicity Rights Regarding the Use of Video/Audio

When using the camera (for video or audio recording), it is the full responsibility of the user to protect privacy and avoid any violation of publicity rights. For example, obtain consent to install the camera in advance if specific buildings or rooms are to be monitored. Canon shall have no liability whatsoever in this regard.

### Legal Notice

In some cases, camera monitoring may be prohibited by law or regulation, the details of which differ by country or region. Before using the camera, check the laws or regulations of the country or region where the camera is used.

## Accessories

Accessories can be purchased separately as necessary.

### Canon AC Adapter PA-V17/PA-V18

A dedicated AC adapter for this camera.

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## Symbols Indicating Safety Precautions

This Installation Guide uses the following marks to indicate important information the user should know in order to use the product safely. Be sure to observe these items.

| | |
|---|---|
| ⚠️ **Warning** | Inappropriate handling against the instruction accompanied by this sign may result in death or serious injury. Be sure to observe these warnings to ensure safety. |
| ⚠️ **Caution** | Inappropriate handling against the instruction accompanied by this sign may result in injury. Be sure to observe these precautions to ensure safety. |
| **Caution** | Inappropriate handling against the instruction accompanied by this sign may result in property damage. Be sure to observe these precautions. |
| **Important** | This symbol indicates important or restricted items. Be sure to read this section. |
| **Note** | Contains reference information for operation or additional explanations. |

## Safety Precautions

This section explains precautions that must be observed when using the camera. If they are not observed, injury, death and/or property damage may occur. Read the following information carefully and be sure to observe the precautions.

### Installation Precautions

#### ⚠️ Warning

Do not install in the following places:
• Places in strong direct sunlight, near heat-generating objects, or subject to high temperatures
• Places near fire sources or flammable solvents (alcohol, thinner, fuel, etc.)
• Humid or dusty places
• Places subject to oily smoke or steam
• Places subject to sea air
• Confined or enclosed places
**Fire or electric shock may result.**

#### ⚠️ Caution

For installation or inspection of this camera, consult the dealer where you purchased the product.
• This installation should be made by a qualified service person and should conform to all local codes.
• When installing on a ceiling, make sure the surface is capable of withstanding the total weight of the camera and mounting bracket and is sufficiently reinforced if necessary.
• Periodically check the parts and screws for rust and to see if they have loosened, in order to prevent injuries and equipment damage due to falling items.

• Do not install in unstable places, places subject to significant vibration or impact, or places subject to salt damage or corrosive gas, as this may result in malfunction.
**Failure to do so may result in the camera falling or other accidents.**

• Be careful not to trap your fingers during installation of the camera.
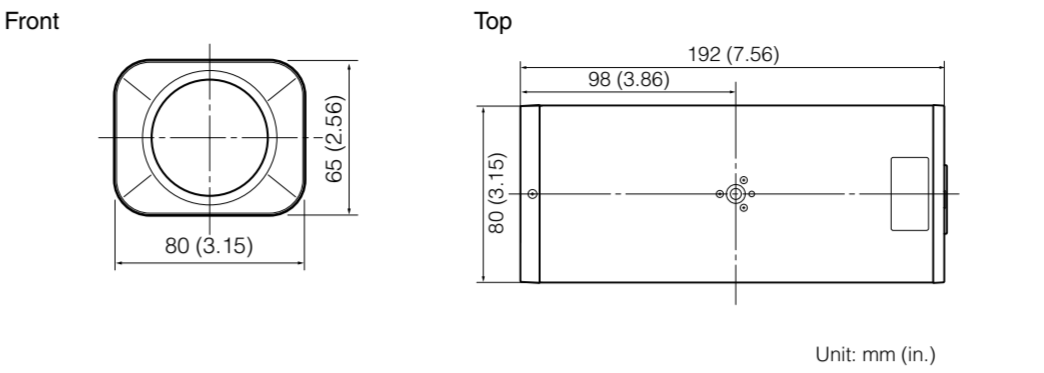**Injury may result.**

#### Caution

• Do not install the camera on an unstable or inclined surface.
**Malfunction may result.**

• Take care not to damage wiring or pipes in the room.
**Damage to peripheral items may result.**

### Precautions for Use

#### ⚠️ Warning

• If you discover defective conditions such as smoke, strange sounds, heat or strange odors, immediately stop using the camera and contact your closest dealer.
**Fire or electric shock may result from continued use of the product.**

• Do not disassemble or modify the camera.
• Do not damage the connecting cable.
• Do not spill water or other liquid inside the camera, spray the camera with water, or otherwise make it wet.
• Do not insert foreign objects into the camera.
• Do not use flammable sprays near the camera.
• Do not leave LAN cables, external power supplies or AC adapter (sold separately) power connectors connected when the camera is not in use for long periods.
• Do not use flammable solvents such as alcohol, paint thinner or benzine when cleaning the camera.
**Fire or electric shock may result.**

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## External Dimensions

### VB-H710F/VB-M700F



Unit: mm (in.)

## Notes on Power Supply

#### ⚠️ Warning

• Only use the dedicated AC Adapter PA-V17/PA-V18 (sold separately) for AC power.
• Do not set any heavy objects on the power cable.
• Do not pull, forcibly bend, scratch, or modify the power cable.
• Do not cover or wrap the AC adapter (sold separately) with cloth or blankets.
**Fire or electric shock may result.**
Be sure to read the user manual for the PA-V17/PA-V18 (sold separately) before use.

#### Caution

• After turning off the power, wait for at least five seconds before turning the power on again. If the power is turned on again too quickly, the camera may operate poorly.

## User Manuals

• Installation Guide (This document)
  This guide provides notes on camera installation and explains the main camera specifications.
• Operation Guide (Included in the Setup CD-ROM)
  This document explains the initial camera settings, Admin Tools settings, viewer operations and troubleshooting, etc.

### Symbols Indicating Camera Model

Camera specific functions will be listed using the icons below.
**H710** : VB-H710F   **M700** : VB-M700F

## Main Specifications

### Camera

| | |
|---|---|
| Image Sensor | 1/3 type CMOS (primary color filter) |
| Number of Effective Pixels | **H710** Approx. 2.1 million pixels |
| | **M700** Approx. 1.3 million pixels |
| Scanning Method | Progressive |
| Lens | **H710** 3x optical (4x digital) zoom lens (electric drive) |
| | **M700** 3x optical zoom lens (electric drive) |
| Focal Length*1 | 2.8 (W) – 8.4 mm (T) |
| F-number | F1.2 (W) – F2.0 (T) |
| Viewing Angle | **H710** Horizontal: 112.6° (W) – 36.7° (T) |
| | Vertical: 60.8° (W) – 20.6° (T) |
| | **M700** Horizontal: 102.5° (W) – 34.2° (T) |
| | Vertical: 75.6° (W) – 25.6° (T) |
| Day/Night Switch | Auto/Manual |
| Min. Subject Illumination | |
| Day Mode (color) | **H710** 0.3 lux (F1.2, shutter speed 1/30 sec., when smart shade control is off, 50IRE) |
| | 0.02 lux (F1.2, shutter speed 1/2 sec., when smart shade control is off, 50IRE) |
| | 0.008 lux (F1.2, shutter speed 1/2 sec., when smart shade control is on, 50IRE) |
| | **M700** 0.25 lux (F1.2, Shutter Speed 1/30 sec., when Smart Shade Control is off) |
| | 0.07 lux (F1.2, Shutter Speed 1/8 sec., when Smart Shade Control is off) |
| | 0.018 lux (F1.2, Shutter Speed 1/8 sec., when Smart Shade Control is on) |
| Night Mode (monochrome) | **H710** 0.015 lux (F1.2, shutter speed 1/30 sec., when smart shade control is off, 50IRE) |
| | 0.001 lux (F1.2, shutter speed 1/2 sec., when smart shade control is off, 50IRE) |
| | 0.0005 lux (F1.2, shutter speed 1/2 sec., when smart shade control is on, 50IRE) |
| | **M700** 0.008 lux (F1.2, Shutter Speed 1/30 sec., when Smart Shade Control is off) |
| | 0.002 lux (F1.2, Shutter Speed 1/8 sec., when Smart Shade Control is off) |
| | 0.001 lux (F1.2, Shutter Speed 1/8 sec., when Smart Shade Control is on) |
| Focus | One-shot AF/Manual/Fixed at infinity |
| Shooting Distance (from front of lens) | Day Mode: 0.3 m (12 in.) – infinity |
| | Night Mode: 1.0 m (3.3 ft.) – infinity |
| Shutter Speed | 1, 1/2, 1/4, 1/8, 1/15, 1/30, 1/60, 1/100, 1/120, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/8000, 1/10000*4, 1/16000*4 sec. |
| Exposure | Auto/Auto (Flickerless)/Auto (Shutter-priority AE)/Manual (Shutter Speed, Aperture, Gain) |
| White Balance | Auto/Light Source (Daylight Fluorescent/White Fluorescent/Warm Fluorescent/Mercury Lamp/Sodium Lamp/Halogen Lamp)/Lock (One-shot WB)/Manual |
| Metering Mode | Center-Weighted/Average/Spot |
| Exposure Compensation | **H710** 9 levels   **M700** 7 levels |
| Smart Shade Control | 7 levels (increases the brightness of shaded subjects in a video) |
| AGC Limit | **H710** 5 levels |

### Server

| | |
|---|---|
| Video Compression Method | JPEG, H.264 |
| Video Size | **H710** JPEG: 1920 x 1080, 960 x 540, 480 x 270, 320 x 240 |
| | H.264: 1920 x 1080, 960 x 540, 480 x 270 |
| | **M700** JPEG: 1280 x 960, 640 x 480, 320 x 240, 160 x 120 |
| | H.264: 1280 x 960, 640 x 480, 320 x 240 |
| Video Quality | JPEG, H.264: 5 levels |
| Frame Rate*2 | JPEG: 0.1 – 30 fps |
| | **H710** H.264: 1/2/3/5/6/10/15/30 fps |
| | **M700** H.264: 10/15/30 fps |
| Max. Frame Rate | **H710** 1920 x 1080 (when streaming): 30 fps |
| | **M700** 1280 x 960 (when streaming): 30 fps |
| I-Frame Interval | **H710** 0.5/1/1.5/2/3/4/5 sec. |

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| | |
|---|---|
| Simultaneous Client Access | Max. 30 Clients + 1 Admin Client |
| | H.264: Max. 10 Clients |
| Camera Control | Administrator, Authorized user, Guest user (level of control varies depending on user) |
| | Max. 50 user names and passwords registered for authorized users. |
| Access Control | User authority (user name and password), Host Access Restrictions (IPv4, IPv6) |
| Encrypted Communications | SSL/TLS, IPsec (Auto Key Exchange/Manual) |
| Protocol | IPv4: TCP/IP, UDP, HTTP, FTP, SNMP (MIB2), SMTP (Client), DHCP (Client), DNS (Client), ARP, ICMP, POP3, NTP, SMTP authentication, RTSP, WV-HTTP (Canon proprietary), ONVIF |
| | IPv6: TCP/IP, UDP, HTTP, FTP, SMTP (Client), DHCPv6 (Client)*4, DNS (Client), ICMPv6, POP3, NTP, SMTP authentication, RTSP, WV-HTTP (Canon proprietary), ONVIF |
| AutoIP | **H710** Available |
| Audio Compression Method | G.711 μ-law (64 kbps) |
| Audio Communication Method | Full-duplex (two-way)   Echo cancellation function compliant |
| | Sound Transfer Protocol by Canon |
| Audio File Playback*3 | Available (audio files can be played back when an event is triggered by the intelligent function or external device input.) |
| Privacy Mask | Number of registration: Max. 8 places, Number of mask colors: 1 (select from 9 colors) |
| Preset | **H710** Max. 20 positions (Preset Tour capable) |
| Intelligent Function | <Video> |
| | Detection Types: moving object detection, abandoned object detection, removed object detection, camera tampering detection, and passing detection*4 |
| | Detection Settings: Max. 15 |
| | <Volume> |
| | Volume Detection |
| Event Trigger Type | External Device Input, Intelligent Function (Video), Intelligent Function (Volume), Timer |
| Image Upload | FTP/HTTP/SMTP (e-mail) |
| | Temporary storage memory in camera: **H710** Max. approx. 5 MB |
| | **M700** Max. approx. 4 MB |
| Event Notification | Frame Rate: Max. 10 fps |
| | HTTP/SMTP (e-mail) |
| Image Cropping Function | **H710** Digital PTZ   Cropping sizes: 640 x 360/512 x 288/ 384 x 216/256 x 144/128 x 72 |
| On-Screen Display | Available |
| Daylight Saving Time | **H710** Available |
| Language | English/German/French/Italian/Spanish/Japanese |

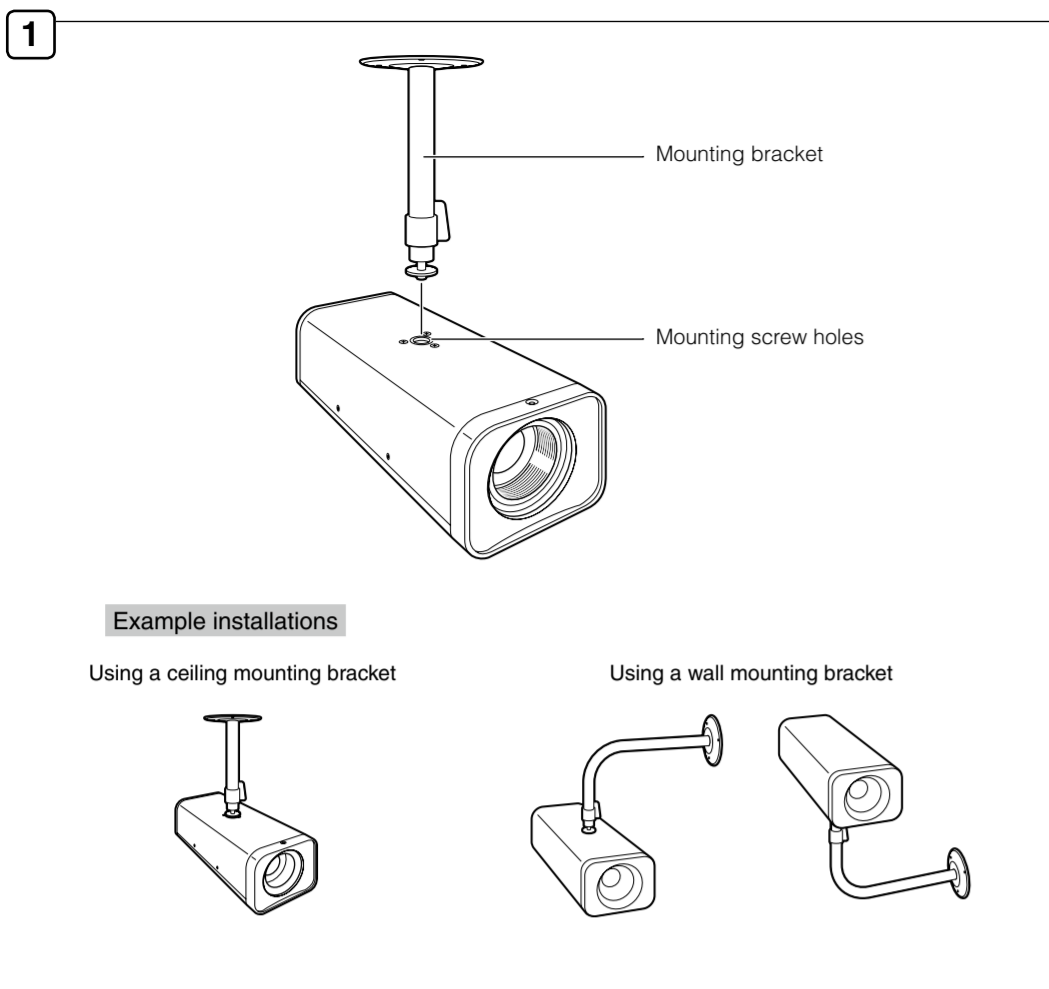"ONVIF" is a trademark of ONVIF Inc.

### Interface

| | |
|---|---|
| Network Terminal*5 | LAN x 1 (RJ45, 100Base-TX (auto/full-duplex/half-duplex)) |
| Audio Input Terminal (common for LINE IN & MIC IN) | φ3.5 mm (φ0.14 in.) mini-jack connector (monaural) |
| | Switch LINE IN/MIC IN in the setting page. |
| | LINE IN x 1 (connect to an amplifier microphone) or MIC IN x 1 (connect to a microphone w/o amplifier) |
| Audio Output Terminal (LINE OUT) | φ3.5 mm (φ0.14 in.) mini-jack connector (monaural) |
| | LINE OUT x 1 (connect to an amplifier speaker) |
| External device I/O Terminal | Input x 2, Output x 2 |
| Memory Card | SD Memory Card, SDHC Memory Card, SDXC Memory Card*4 Compatible. |
| | Capacity: **M700** Max. approx. 32 GB |
| | Frame Rate: Max. 1 fps |

### Others

| | |
|---|---|
| Operating Environment | Temperature: -10°C – +50°C (+14°F – +122°F), Humidity: 5% – 85% (without condensation) |
| Power Supply | PoE: PoE power supply via LAN connector (IEEE802.3af compliant) |
| | AC Adapter: PA-V17/PA-V18 (100 – 240 V AC) (sold separately) |
| | External power source: 24 V AC/12 V DC |
| Power Consumption | When using PoE: **H710** Max. approx. 6.9 W   **M700** Max. approx. 5.9 W |
| | When using AC Adapter PA-V17: **H710** Max. approx. 8.5 W (100 V AC) |
| | Max. approx. 8.7 W (240 V AC) |
| | **M700** Max. approx. 6.9 W (100 V AC) |
| | Max. approx. 6.8 W (240 V AC) |
| | When using AC Adapter PA-V18: **H710** Max. approx. 7.5 W (100 V AC) |
| | Max. approx. 7.8 W (240 V AC) |
| | **M700** Max. approx. 6.8 W (100 V AC) |
| | Max. approx. 7.0 W (240 V AC) |
| | When using DC: **H710** Max. approx. 7.0 W   **M700** Max. approx. 5.7 W |
| | When using AC: **H710** Max. approx. 6.5 W   **M700** Max. approx. 5.4 W |
| Dimensions | (H x W x D) 65 x 80 x 192 mm (2.56 x 3.15 x 7.56 in.) |
| Weight | **H710** Approx. 670 g (1.48 lb.) (camera only) |
| | **M700** Approx. 700 g (1.55 lb.) (camera only) |

*1  (W): maximum wide angle, (T): maximum telephoto
*2  The frame rate may be reduced due to Viewer PC's specs, the number of clients accessing at the same time, network loads, image quality setting, type or movement of the subject or other reasons.
*3  A third-party amplifier speaker is necessary.
*4  VB-H710F specific function
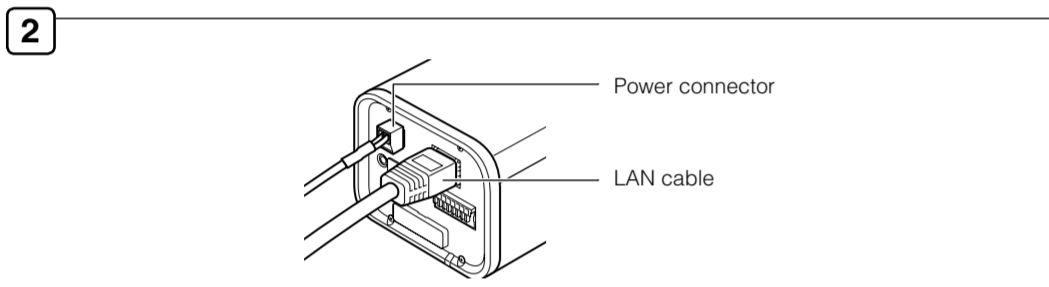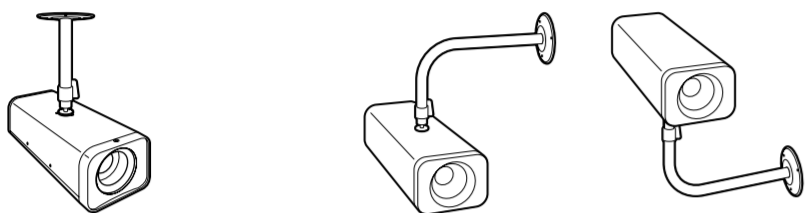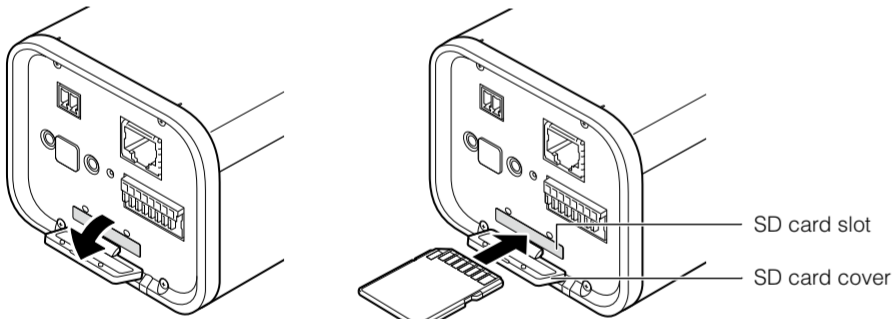*5  Use a category 5 or better LAN cable, 100 m (328 ft.) or less in length.

The contents of this guide are subject to change without any prior notice.

**1**

Mounting bracket

Mounting screw holes

Example installations

Using a ceiling mounting bracket    Using a wall mounting bracket

**2**

Power connector

LAN cable

## Using an SD Memory Card

Open the SD card cover as shown in the diagram to insert or remove the SD memory card.
Firmly shut the SD card cover after inserting or removing the SD memory card.

SD card slot

SD card cover

### Inserting the card

Push the SD memory card as far as possible into the SD card slot.

### Removing the card

Push the SD memory card in all the way until the card slightly pops out. Pinch the card and remove.

> **Important**
>
> • Insert the SD memory card before installing the camera.
> • Make sure the SD memory card is not write-protected.
> • When using an SD memory card with the camera for the first time, it is recommended to format the card after inserting it into the camera (see "Operation Guide" > "Setting Page" > "Memory Card").

## Using Camera Housing

When using the camera mounted in commercial camera housing, remove the camera's protection plate to reduce the effects of excess reflections within the housing.

• Remove the lock screw on the front cover and remove the front cover and protection plate. Then return only the front cover to its original position and fix in place with the lock screw.

Lock screw

Protection plate

Front cover

• When reattaching the protection plate, face the side with the cutout toward the lens.

Cutout

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# Installing the Camera

Before installing the camera, set the IP address and other network information on the camera using the "VB Initial Setting Tool" on the Setup CD-ROM.
For details on how to operate the "VB Initial Setting Tool", see "Operation Guide".

**1 Mount the camera to the mounting bracket**

Use the mounting screw holes on the camera to fix the camera to the mounting bracket.

> **Important**
>
> • You must consult your retailer or provide the mounting bracket yourself.
> • A tripod mounting screw (1/4-20 UNC) will fit the fixing screw hole.
> • Be sure to use a mounting bracket with a mounting screw shorter than 5.5 mm (0.22 in.). Using a mounting bracket with a mounting screw 5.5 mm (0.22 in.) or longer may damage the camera.

**2 Connect the cables to the camera**
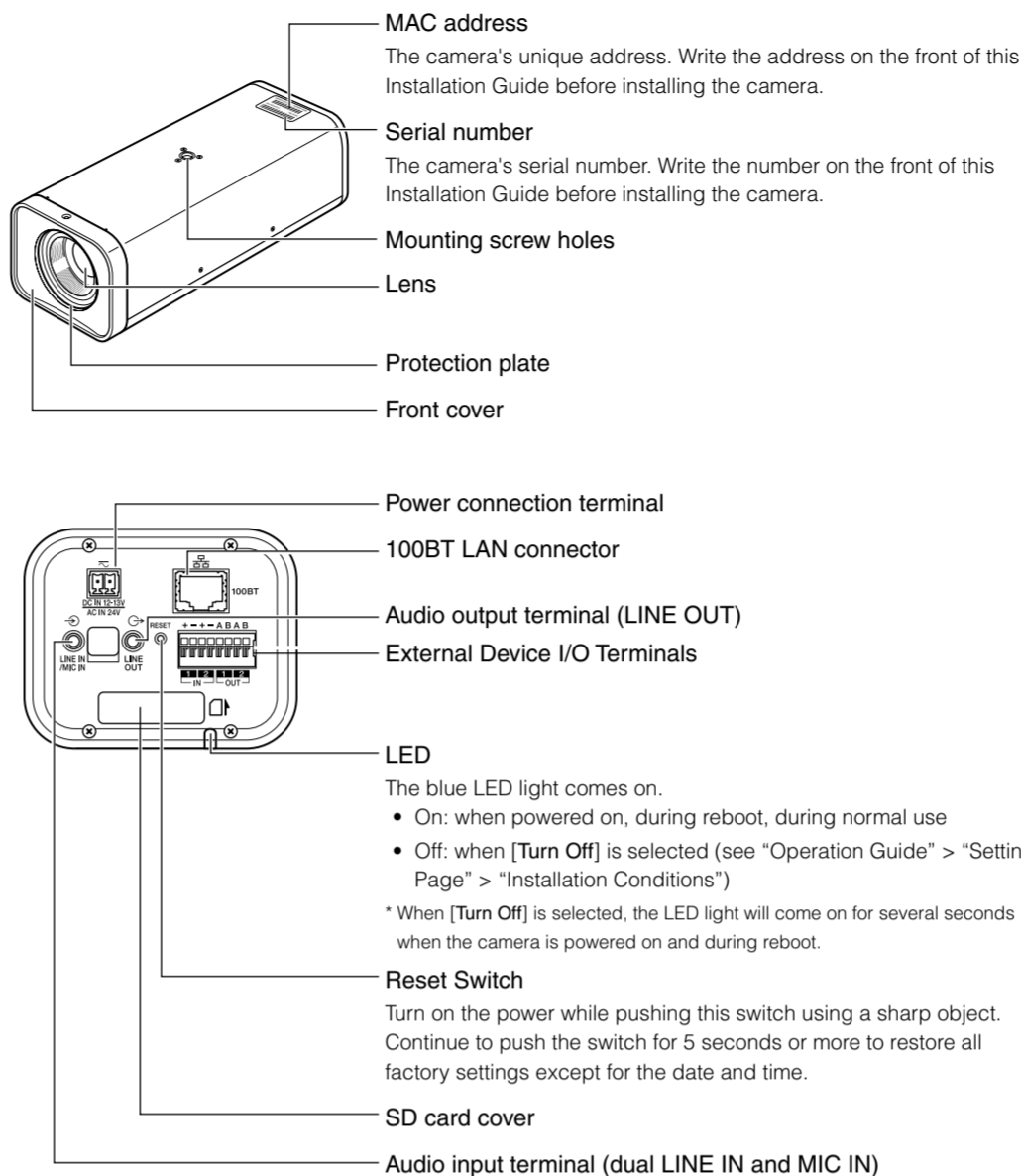
Connect the LAN cable.
If AC Adapter PA-V17/PA-V18 (sold separately) or an external power supply is used, connect the power connector to the camera.
Connect cables to the external device I/O terminals and audio input/output terminals as necessary.

**3 Set the camera angle**

When installation is complete, use the Camera Angle Setting Tool to check the image on the camera and manually adjust the camera angle. Zoom and focus can be adjusted with the Camera Angle Setting Tool (see "Operation Guide" > "Camera Angle Setting Tool").

# Connecting the Camera

## Power Connection

Power can be supplied to the camera in the three ways described below.

### ■ PoE (Power over Ethernet)

The camera supports PoE functions. Power can be supplied to the camera by using a LAN cable to connect it to a PoE HUB that conforms to the IEEE 802.3af standard.
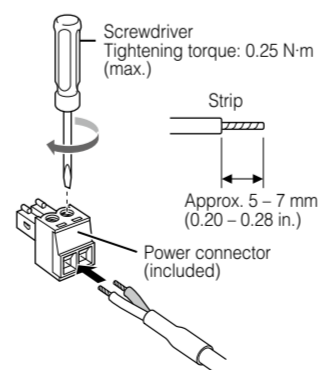
> **Important**
>
> • Check with your dealer for more information about PoE HUB and Midspan technology. Midspan (a LAN cable power supply device) is a device that, like a PoE HUB, supplies power to the camera via a LAN cable.
> • Some PoE HUBs allow current limits for each port, but applying limits may interfere with performance. If using this type of PoE HUB, do not limit the operating current.
> • Some PoE HUBs have total consumption current limits for ports, which can interfere with performance when multiple ports are in use. For more information, check the instruction guide for your PoE HUB.
> • When the camera is connected to a switching HUB, changing the settings while the camera is operating may cause the HUB learning function to interfere with communication. Do not change the connection when the camera is operating.
> • The camera can also be connected to an AC adapter (sold separately) while receiving power from a PoE HUB. In such cases, the PoE power supply is given priority, and the camera does not use the power supply from the AC adapter (sold separately). When the PoE power supply is disconnected, power is supplied automatically from the AC adapter (sold separately).

### ■ External Power Supply

12 V DC or 24 V AC input can be used.
Connect the included power connector as shown below.

Screwdriver
Tightening torque: 0.25 N·m (max.)

Strip

Approx. 5 – 7 mm (0.20 – 0.28 in.)

Power connector (included)

For 12 V DC and 24 V AC input, use a power supply insulated from 100 V AC.
12 V DC can be connected in a non-polar configuration.

> **Important**
>
> • The power supply should be within the following voltage range.
> • 24 V AC: Voltage fluctuation within ±10% of 24 V AC (50 Hz or 60 Hz ±0.5 Hz or less)
>    Current supply capacity of at least 1.0 A per camera
> • 12 V DC: Voltage fluctuation within ±10% of 12 V DC
>    Current supply capacity of at least 1.5 A per camera
> • When using a 12 V DC battery power supply, be sure to connect resistors of at least 0.5 – 1.0 Ω/20 W in series to the power line.
> • For an external power supply, use a double-insulated device.

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# Part Names



MAC address
The camera's unique address. Write the address on the front of this Installation Guide before installing the camera.

Serial number
The camera's serial number. Write the number on the front of this Installation Guide before installing the camera.

Mounting screw holes

Lens

Protection plate

Front cover

Power connection terminal

100BT LAN connector

Audio output terminal (LINE OUT)

External Device I/O Terminals

LED
The blue LED light comes on.
• On: when powered on, during reboot, during normal use
• Off: when [Turn Off] is selected (see "Operation Guide" > "Setting Page" > "Installation Conditions")
* When [Turn Off] is selected, the LED light will come on for several seconds when the camera is powered on and during reboot.

Reset Switch
Turn on the power while pushing this switch using a sharp object. Continue to push the switch for 5 seconds or more to restore all factory settings except for the date and time.

SD card cover

Audio input terminal (dual LINE IN and MIC IN)

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## Recommended Power Cables [Reference]

| Cable (AWG) | | 24 | 22 | 20 | 18 | 16 |
|---|---|---|---|---|---|---|
| Conductor diameter | mm | φ0.52 | φ0.65 | φ0.82 | φ1.03 | φ1.30 |
| | (in.) | (φ0.020) | (φ0.026) | (φ0.032) | (φ0.041) | (φ0.051) |
| 12 V DC maximum cable length | m | 5 | 9 | 14 | 23 | 32 |
| | (ft.) | (16.4) | (29.5) | (45.9) | (75.5) | (105.0) |
| 24 V AC maximum cable length | m | 11 | 18 | 29 | 46 | 64 |
| | (ft.) | (36.1) | (59.1) | (95.1) | (150.9) | (210.0) |

Use UL cable (UL-1015 or equivalent) for 12 V DC or 24 V AC wiring.

### ■ AC Adapter

Use the dedicated AC Adapter PA-V17/PA-V18 (sold separately).

> **Note**
>
> • The camera does not have a power switch. Connecting and disconnecting the LAN cable (PoE power supply), AC adapter, or external power supply plug turns the power ON and OFF, respectively.
> • When the camera needs to be rebooted, perform the reboot operation from the camera setting page (see "Operation Guide" > "Setting Page" > "Maintenance").

## External Device I/O Terminals

External device I/O terminals consist of two input and output systems each. Viewer can be used to check external device input status and control output to an external device (see "Operation Guide" > "Selecting the External Device Output" and "Displaying Event Status").

### ■ External Device Input Terminals (IN1, IN2)

External device input terminals consist of two sets (IN1, IN2) of two terminals, with the negative terminals connected to the camera interior GND. Connecting cables to the positive and negative terminals and opening or closing the circuit notifies the Viewer.

> **Important**
>
> • When connecting sensors and switches, connect terminals that are electrically isolated from the respective power and GND.
> • Do not push the external device I/O terminal button with too much force. Doing so may cause the button to remain pushed-in.
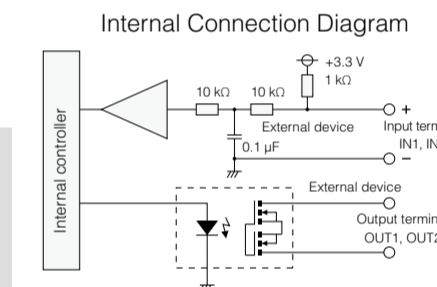
### ■ External Device Output Terminals (OUT1, OUT2)

External device output terminals consist of two sets (OUT1, OUT2) of two terminals. The sets have no polarity. Controls from the viewer can be used to open and close the circuit between the terminals. Using optical couplers, the output terminals are isolated from the camera's internal circuit.

The load connected to the output terminals should be within the following rating range.
Rating between output terminals:
   Maximum voltage 50 V DC
   Continuous load current at or below 100 mA
   On resistance: Max. 30 Ω

Internal Connection Diagram



> **Note**
>
> Adaptive wiring for external device cables
> Solid conductor AWG: No. 28 – 22
> Conductor size: φ0.32 – φ0.65 mm (φ0.013 – φ0.026 in.)
> Cable strip should be approx. 8 – 9 mm (0.31 – 0.35 in.)

## Audio Input/Output Terminals

Each audio input/output terminal has one input system and one output system.
Connecting the camera to an audio input/output device such as a microphone or a speaker with an amplifier allows you to send/receive audio through the viewer.

### ■ Audio Input Dual LINE IN/MIC IN (monaural input)

Although the camera has a single audio input system, it supports two types of microphone input: LINE IN and MIC IN. Before using the audio input, change the [Audio Input] on the Setting Page (see "Operation Guide" > "Audio Input"). LINE IN is selected by default.
Input terminal: φ3.5 mm (φ0.14 in.) mini-jack (monaural)
• Dynamic MIC IN
   Input impedance: 1.75 kΩ ±20%
   * Supported microphones: Output impedance: 400 Ω – 600 Ω
• Condenser MIC IN
   Input impedance (microphone bias resistance): 2.2 kΩ ±20%
   Microphone power supply: plug-in power (voltage: 1.8 V)
   * Supported microphones: Condenser microphones with plug-in power support
• LINE IN
   Input level: Max. 1 Vp-p
   * Use a microphone with an amplifier.

### ■ Audio Output Terminal LINE OUT (monaural output)

Connect the camera to a speaker with an amplifier. Audio can be sent to the speaker from Viewer.
Output terminal: φ3.5 mm (φ0.14 in.) mini-jack (monaural)
Output level: Max. 1 Vp-p
* Use a speaker with an amplifier.

> **Important**
>
> • Using incorrect settings for [Audio Input] may damage the camera and/or microphone. Be sure to configure the settings correctly.
> • Microphone characteristics may affect volume and sound quality.
> • Images and audio do not always synchronize properly.
> • Audio may be interrupted depending on PC characteristics and network environment.
> • Video and audio can be streamed to up to 30 clients. However, audio may be interrupted when streaming to many clients or using SSL.
> • Audio may be interrupted when using antivirus software.
> • Connecting and disconnecting the LAN cable interrupts the audio. Use the viewer to reconnect.