Canon

Network Camera

VB-M700F Installation Guide

Thank you for purchasing Canon Network Camera VB-M700F (hereafter referred to as the camera). The camera is for indoor use only.
Be sure to read "Installation Guide" (this document) and "VB-M700F/VB-M600D/VB-M600VE Operation Guide" (included in the Setup CD-ROM) before use.
This Installation Guide explains the mounting 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 "VB-M700F/VB-M600D/VB-M600VE Operation Guide". Read these guides carefully before using the camera to ensure correct use.

* For the latest information (firmware and bundled software, User's 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 by yourself. Doing so may result in unforeseen accidents such as dropping the camera or electric shock.

Check Bundled Items

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

1. VB-M700F main unit
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 No. _____

MAC Address _____

European Union (and EEA) only.

These symbols indicate that this product is not to be disposed of with your household waste, according to the WEEE Directive (2002/96/EC), the Battery Directive (2006/66/EC) and/or our national laws 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/environment.
(EEA: Norway, Iceland and Liechtenstein)

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. Canon shall have no liability whatsoever in this regard.
Reference
• Obtain consent from the Administrator before installing the camera to film specific buildings or rooms.

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.

User's Manuals

• VB-M700F Installation Guide (This document)
    This guide provides notes on camera installation and explains the main camera specifications.
• VB-M700F/VB-M600D/VB-M600VE Operation Guide (Included in the Setup CD-ROM)
    This document explains the initial camera settings, Admin Tools settings, viewer operations and troubleshooting, etc.

Options

Options can be bought separately as necessary.

AC Adapter PA-V17

A dedicated AC adapter for this camera.

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, etc.)
• Humid or dusty places
• Places subject to lamp black 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 mounting bracket and screws for rust and loose material to prevent injuries and 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.
Failure to do so may result in the camera falling or other accidents.

• Do not insert your finger in spaces when installing 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.
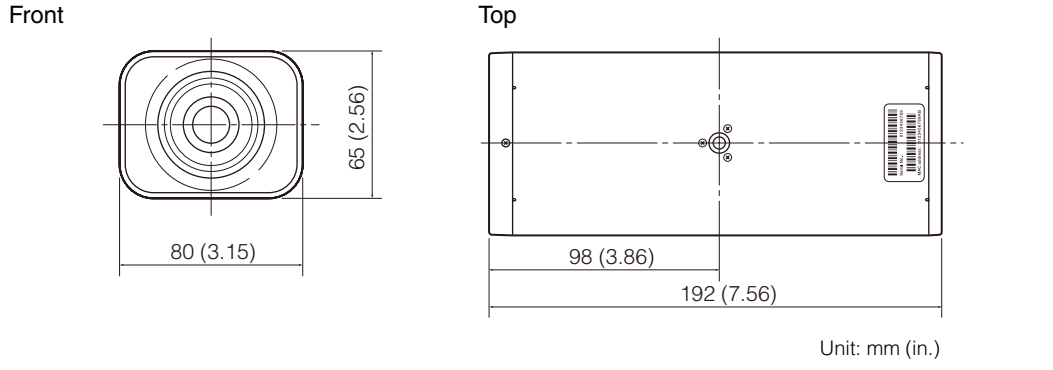Continued use of the product may cause fire or electric shock.

• Do not disassemble or modify the camera.
• Do not damage the connecting cable and others.
• Do not spill water or other liquid inside the camera, spray the camera with water, or otherwise wet it.
• 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 (optional) 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.

External Dimensions

VB-M700F

Front

Top

65 (2.56)

80 (3.15)

98 (3.86)

192 (7.56)

Unit: mm (in.)

Notes on Power Supply

⚠ **Warning**

• Only use the dedicated AC adapter PA-V17 (optional) 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 (optional) with cloth or blankets.
Fire or electric shock may result.
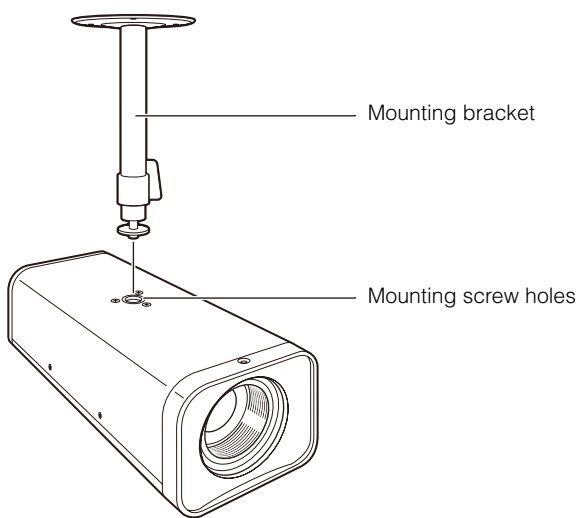Be sure to read the User's Manual for the PA-V17 (optional) before use.

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.
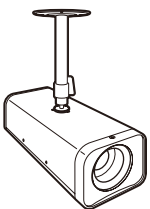

Main Specifications

Camera

Image Sensor	1/3 type CMOS (primary color filter)
Number of Effective Pixels	Approx. 1.3 million pixels
Scanning Method	Progressive
Lens	3x Optical Zoom Lens (Electric Drive)
Focal Length	f=2.8 (W) – 8.4mm (T)
F-number	F1.2(W) – F2.0 (T)
Viewing Angle	Horizontal: 102.5° (W) – 34.2° (T)/Vertical: 75.6° (W) – 25.6° (T)
Day/Night Switch	Auto or Manual. In "Auto" mode, it switches automatically according to "Switching Brightness" and "Response" settings.
Min. Subject Illumination	
Day Mode (color):	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):	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: 0.3m (12 in.) – ∞ / Night Mode: 1.0 m (3.3 ft.) – ∞
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 sec.
Exposure	Auto/Flickerless/Shutter-Priority AE, Manual (Shutter Speed/Aperture/Gain)
White Balance	Auto / Select Light Source (Warm Fluorescent, White Fluorescent, Daylight Fluorescent, Mercury Lamp, Sodium Lamp, Halogen Lamp) / Lock (One-shot WB) / Manual
Metering Mode	3 options (Center-weighted/Average/Spot)
Exposure Compensation	7 levels
Smart Shade Control	7 levels (function for increasing the brightness of shaded subjects in a high-contrast image)

Server

Video Compression Method	H.264, JPEG
Image Size	JPEG: 160 x 120, 320 x 240, 640 x 480, 1280 x 960
	H.264: 320 x 240, 640 x 480, 1280 x 960
Image Quality	JPEG/H.264: 5 levels
Frame Rate	JPEG: 30 – 0.1 fps
	H.264: 30/15/10 fps
Max. Frame Rate	Max. 30 fps (1280 x 960) *1
Simultaneous Client Access	JPEG: Max. 30 Clients + 1 Admin Client
	H.264: Max. 10 Clients
Audio Compression Method	G.711 μ-law (64 kbps)
Audio Communication Method	Full-duplex (two-way) - Echo cancellation function compliant
Audio Playback	available *2
Protocol	IPv4: TCP/IP, UDP, HTTP, FTP, SNMP (MIB2), SMTP (Client), DHCP (Client), DNS (Client), ARP, ICMP, POP3, NTP, SMTP authentication, WV-HTTP (from Canon), ONVIF
	IPv6: TCP/IP, UDP, HTTP, FTP, SMTP (Client), DNS (Client), ICMPv6, POP3, NTP, SMTP authentication, WV-HTTP (from Canon), ONVIF
On-Screen Display	available
Encrypted Communications	SSL/TLS, IPsec (Auto Key Exchange/Manual)
Camera Control	3 user levels available (Administrator/Authorized user/Guest user) Up to 50 users' user names and passwords can be set for Authorized users.
Privacy Mask	Number of registration: Max. 8 places, Number of mask colors: 1 (select from 9 colors)
Access Control	Access control (user name and password)/Host-based access control (IPv4, IPv6)
Intelligent Function	\<Image\> Detection types: Moving Object Detection, Abandoned Object Detection, Removed Object Detection, and Camera Tampering Detection Detection areas: Max. 15 places \<Volume\> Volume Detection
Event Trigger Type	External Device Input 1/2, Intelligent Function (Image), Intelligent Function (Volume), Timer
Image Upload	FTP/HTTP/SMTP (e-mail) Temporary storage memory in camera: Max. approx 4MB, Frame Rate: Max. 10 fps
Event Notification	HTTP/SMTP (e-mail)
Language	English / French / German / Italian / Spanish / Japanese

*1) The frame rate may be reduced due to Viewer PC's specs, the number of clients accessing at the same time, network loads, type or movement of the subject, image quality setting or other reasons.
*2) A separately-sold amplifier speaker is necessary for playing audio files.
"ONVIF" is a trademark of ONVIF Inc.

Interface

Network Terminal	LAN x 1 (RJ45, 100Base-TX (Auto/full-duplex/half-duplex))
Audio Input Terminal (common for LINE IN & MIC IN)	∅3.5 mm (∅0.14 in.) mini-jack connector (monaural) LINE IN/MIC IN can be switched 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)	∅3.5 mm (∅0.14 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 Compatible. Max. approx. 32 GB, Frame Rate: Max. 1fps

Others

Operating Environment	Temperature: -10 – 50°C (14 – 122°F)/Humidity: 5 – 85% (without condensation)
Power Supply	PoE: PoE power supply via LAN connector (IEEE802.3af compliant) AC adapter: PA-V17 (AC 100-240 V) External power source: AC 24 V/DC 12 V
Power Consumption	PoE Input : Max. approx. 5.9 W When using AC adapter PA-V17 : Max. approx. 6.9 W DC Input : Max. approx. 5.7 W AC Input : 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	Main unit Approx. 700 g (1.55 lb.)

AC Adapter (optional)

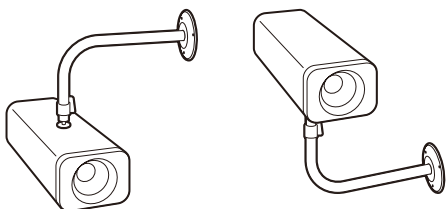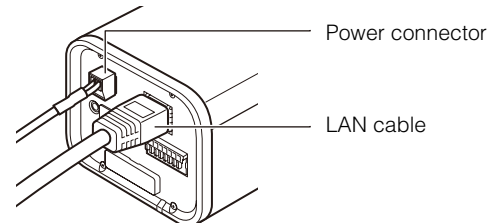|	
Model	PA-V17
Input	100-240 VAC 50/60 Hz
Output	13 VDC 1.0 A (MAX), temperature -10°C – 45°C (14 – 113°F) humidity 20 – 85% (non-condensing)
Polarity	Black line side (-), White line side (+)
Dimensions	(H x W x D) 25 x 58 x 118 mm (0.98 x 2.28 x 4.65 in.) (excluding projections)
Weight	Approx. 215 g (7.6 oz.) (excluding cables)

1

- Mounting bracket
- Mounting screw holes

Example installations

Using a ceiling mounting bracket

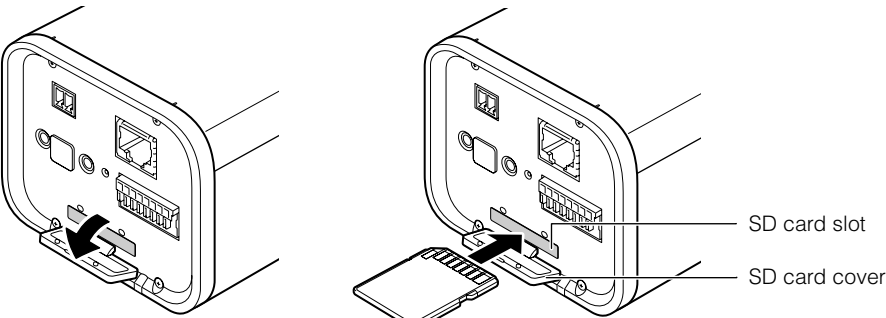Using a wall mounting bracket

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

- Make sure the SD memory card isn't 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 "Memory Card" in "Setting Page" in the "VB-M700F/VB-M600D/VB-M600VE Operation Guide").
- Insert the SD memory card before installing the camera.

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 "VB-M700F/VB-M600D/VB-M600VE 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.

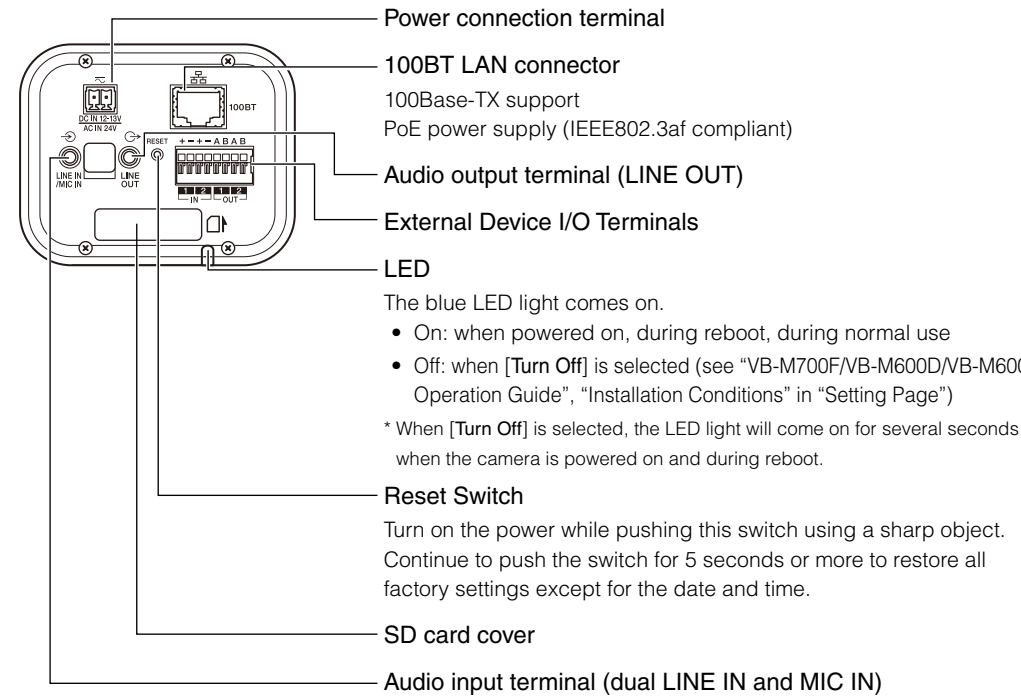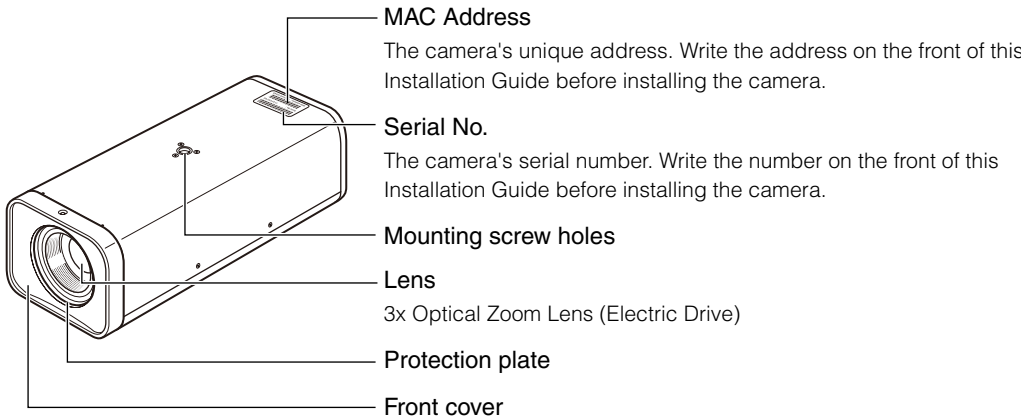### 2 Connect the cables to the camera

Connect the LAN cable.
If an AC adapter PA-V17 (optional) or 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 "Camera Angle Setting Tool" in "VB-M700F/VB-M600D/VB-M600VE Operation Guide").

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

Part Names

- **MAC Address**
  The camera's unique address. Write the address on the front of this Installation Guide before installing the camera.
- **Serial No.**
  The camera's serial number. Write the number on the front of this Installation Guide before installing the camera.
- **Mounting screw holes**
- **Lens**
  3x Optical Zoom Lens (Electric Drive)
- **Protection plate**
- **Front cover**

- **Power connection terminal**
- **100BT LAN connector**
  100Base-TX support
  PoE power supply (IEEE802.3af compliant)
- **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 "VB-M700F/VB-M600D/VB-M600VE Operation Guide", "Installation Conditions" in "Setting Page")
  * 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)**

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.
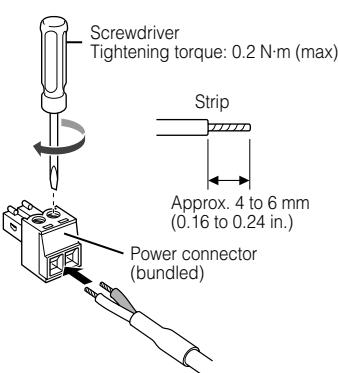
📑 Important

- Check with your Canon sales representative for more information about PoE HUB and Midspan technology.
- 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.
- Use a category 5 or higher cable 100 m (328 ft.) or less in length for the LAN cable that connects camera and the PoE HUB.
- When the camera is connected to a switching HUB, changing the connection 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 (optional) 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 (optional). When the PoE power supply is disconnected, power is supplied automatically from the AC adapter (optional). Midspan (a LAN cable power supply device) is a device that, like a PoE HUB, supplies power to the camera via a LAN cable.

■ External Power Supply

12 VDC or 24 VAC input can be used.
Connect the bundled power connector as shown below.

- Screwdriver
  Tightening torque: 0.2 N·m (max)
- Strip
  Approx. 4 to 6 mm (0.16 to 0.24 in.)
- Power connector (bundled)

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

📑 Important

- The power supply should be within the following voltage range.
- 24 VAC: Voltage fluctuation within 10% of 24 VAC (50 Hz or 60 Hz ± 0.5 Hz or less)
  Current supply capacity of at least 1.0 A per camera
- 12 VDC: Voltage fluctuation within 10% of 12 VDC
  Current supply capacity of at least 1.5 A per camera
- When using a 12-VDC 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.

Recommended Power Cables for VB-M700F [Reference]

Cable (AWG)		24	22	20	18	16
Conductor diameter	mm (in.)	Φ 0.52 (Φ 0.020)	Φ 0.65 (Φ 0.026)	Φ 0.82 (Φ 0.032)	Φ 1.03 (Φ 0.041)	Φ 1.30 (Φ 0.051)
12 VDC maximum cable length	m (ft.)	5 (16.4)	9 (29.5)	14 (45.9)	23 (75.5)	32 (105.0)
24 VAC maximum cable length	m (ft.)	11 (36.1)	18 (59.1)	29 (95.1)	46 (150.9)	64 (210.0)

Use UL cable (UL-1015 or equivalent) for 12 VDC or 24 VAC wiring.

■ AC Adapter

Use the dedicated AC adapter PA-V17 (optional).

📝 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 "Maintenance" in "Setting Page" of the "VB-M700F/VB-M600D/VB-M600VE Operation Guide").

External Device I/O Terminals

External device I/O terminals consist of two input and output systems each. VB-M700 Viewer and RM Viewer can be used to check external device input status and control output to an external device (see "Operating the External Device Output" and "Displaying Event Status" in the "VB-M700F/VB-M600D/VB-M600VE Operation Guide").

■ External Device Input Terminals (IN1, IN2)

External device input terminals consist of two sets (IN1, IN2) of two terminals, with the negative terminal connected to the camera interior GND. Connect two cables to the positive and negative terminals. When electrical continuity or insulation is created between the terminals, the viewer will be notified of either status.

📑 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.

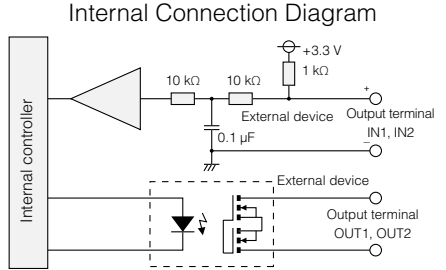### ■ External Device Output Terminals (OUT1, OUT2)

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 switch between electrical continuity and insulation from one terminal to the next. 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 VDC
    Continuous load current at or below 100 mA

📝 Note

Adaptive wiring for external device cables
Solid conductor AWG: No. 28 - 22
Conductor size: Φ 0.32 - Φ 0.65 mm (Φ 0.013 - Φ 0.026 in.)
Cable strip should be approx. 8 - 9 mm (0.31 - 0.35 in.)

Internal Connection Diagram

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 "Audio Input" in the "VB-M700F/VB-M600D/VB-M600VE Operation Guide"). LINE IN is selected by default.
Input terminal: Φ 3.5 mm (Φ 0.14 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 RM Viewer.
Output terminal: Φ 3.5 mm (Φ 0.14 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.
- Use RM Viewer to send audio to the speaker. VB-M700 Viewer cannot be used to send audio.
- Images and audio do not always synchronize properly.
- Audio may be interrupted depending on PC characteristics and network environment.
- Images and audio can be distributed to up to 30 clients. However, audio may be interrupted when distributing to many clients.
- Audio may be interrupted when using antivirus software.
- Connecting and disconnecting the LAN cable interrupts the audio. Use the viewer to reconnect.