TRUSTED SECURITY SOLUTIONS™

Installation Guide

Avigilon™ High Definition H.264 IP Dome Camera Models:

H3-DP1, H3-DP2, H3A-DP1 and H3A-DP2

Important Safety Information

This manual provides installation and operation information and precautions for the use of this camera. Incorrect installation could cause an unexpected fault. Before installing this equipment read this manual carefully. Please provide this manual to the owner of the equipment for future use.

⚡ The Warning symbol indicates the presence of dangerous voltage within and outside the product enclosure that may constitute a risk of electric shock, serious injury or death to persons if proper precautions are not followed.

⚠ The Caution symbol alerts the user to the presence of hazards that may cause minor or moderate injury to persons, damage to property or damage to the product itself if proper precautions are not followed.

⚡ **WARNING —** Failure to observe the following instructions may result in severe injury or death.

- Installation must be performed by qualified personnel only, and must conform to all local codes.
- This product is intended to be supplied by a UL Listed Power Unit marked "Class 2" or "LPS" or "Limited Power Source" with output rated 12 VDC or 24 VAC, 10 W min. or Power over Ethernet (PoE), rated 48 VDC, 10 W min.
- Any external power supply connected to this product may only be connected to another Avigilon product of the same model series. External power connections must be properly insulated.
- Do not connect directly to mains power for any reason.

⚠ **CAUTION —** Failure to observe the following instructions may result in injury or damage to the device.

- Do not install near any heat sources such as radiators, heat registers, stoves, or other sources of heat.
- Do not subject the cables to excessive stress, heavy loads or pinching.
- Do not open or disassemble the device. There are no user serviceable parts.
- Refer all servicing to qualified personnel. Servicing may be required when the device has been damaged (such as from a liquid spill or fallen objects), has been exposed to rain or moisture, does not operate normally, or has been dropped.
- Do not use strong or abrasive detergents when cleaning the device body.
- Use only accessories recommended by Avigilon.
- This product should be installed by a trained professional and should beinstalled in restricted access locations.

Regulatory Notices

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.

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

FCC Notice

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Changes or modifications made to this equipment not expressly approved by Avigilon Corporation or parties authorized by Avigilon Corporation could void the user's authority to operate this equipment.

Disposal and Recycling Information

When this product has reached the end of its useful life, please dispose of it according to your local environmental laws and guidelines.

Risk of fire, explosion, and burns. Do not disassemble, crush, heat above 100 °C (212 °F), or incinerate.

European Union:

This symbol means that according to local laws and regulations your product should be disposed of separately from household waste. When this product reaches its end of life, take it to a collection point designated by local authorities. Some collection points accept products for free. The separate collection and recycling of your product at the time of disposal will help conserve natural resources and ensure that it is recycled in a manner that protects human health and the environment.

Legal Notices

Disclaimer

Table of Contents

Overview

Cover View

1. **Dome cover**

   Vandal resistant dome cover.

2. **Tamper resistant screws**

   Torx captive screws to fix the dome cover to the base.

Bottom View
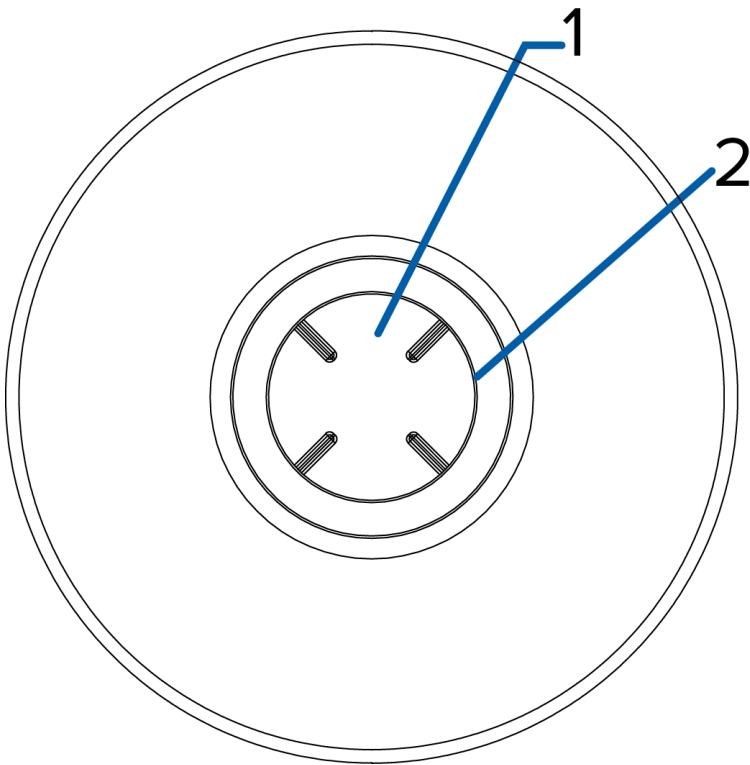
1. **Cable entry hole**

   An entry hole for the cables required for camera operation.

2. **1-1/2" NPT thread mount**

   Standard female 1-1/2" NPT thread mount for mounting the dome camera to a pole or bracket.

Front View
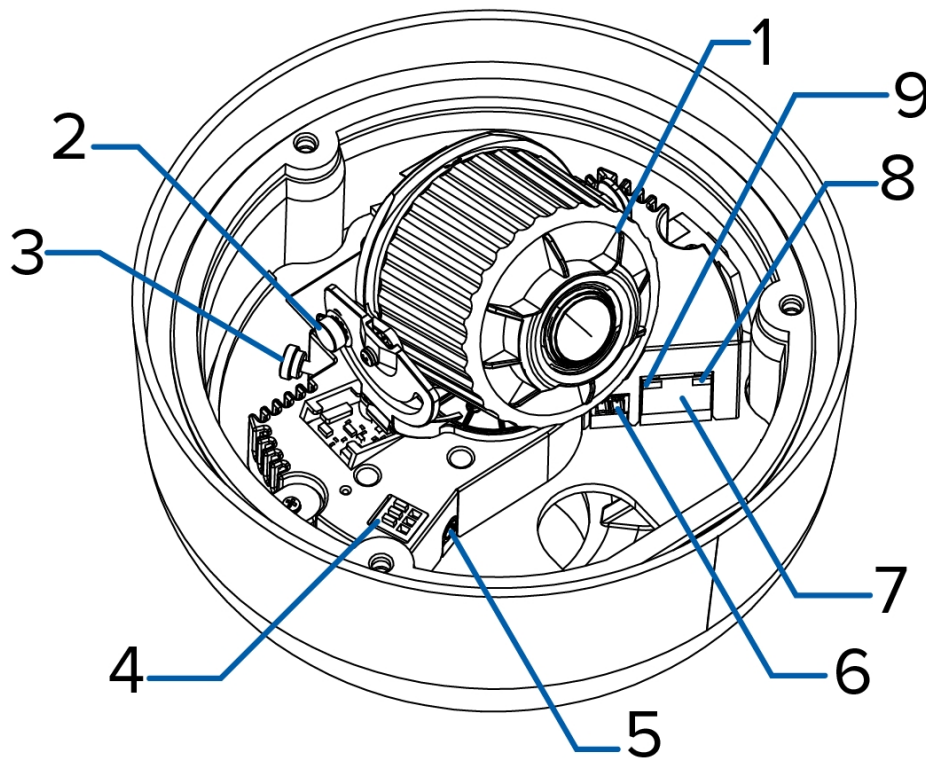
1. **Azimuth control**

   Provides control of the image angle.

2. **Tilt lock thumb screw**

   Provides a locking mechanism for the image tilt adjustment.

3. **Pan lock thumb screw**

   Provides a locking mechanism for the image pan adjustment

4. **I/O connector block**

   Provides connections to external input/output devices.

5. **Audio/video connector**

   Accepts a mini-jack connector (3.5 mm).

6. **Power connector block**

   Accepts a terminal block with either an AC or DC power connection. DC input can be either polarity. Only required when Power over Ethernet is not available.

7. **Ethernet port**

Accepts an Ethernet connection to a network. Server communication and image data transmission occurs over this connection. Also receives power when it is connected to a network that provides Power over Ethernet.

8. **Connection status LED**

   Provides information about device operation. For more information, see *Connection Status LED Indicators* on page 16.

9. **Link LED**

   Indicates if there is an active connection in the Ethernet port.

Rear View

1
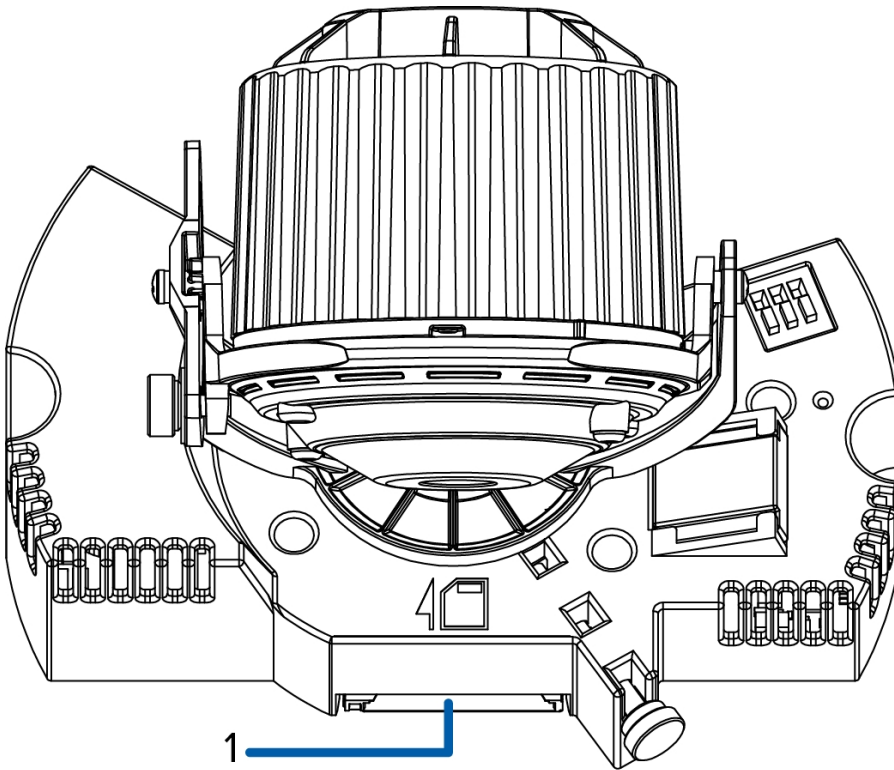
1. **SD card slot**

   Accepts an SD card for onboard storage.

Installation

Required Tools and Materials

- Small slotted screwdriver with 5/64" or 2 mm blade width — for connecting power when not using Power over Ethernet.

Camera Package Contents

Ensure the package contains the following:

- Avigilon™ High Definition IP Dome Camera
- Terminal block
- T20 Torx key
- Rubber Grommet
- Teflon Sealing Tape

Installation Steps

Complete the following sections to install the camera.

Removing the Dome Cover

Remove the dome cover by loosening the screws that fix the cover to the base. The Torx key included with the dome camera can be used to loosen the screws.

NOTE: Be careful not to scratch or touch the dome bubble. The resulting marks or fingerprints may affect the overall image quality. Keep the protective covers on the outside of the dome bubble until the installation is complete.

Mounting the Dome Camera

> ⚠ **CAUTION —** The dome camera must be mounted as instructed below or problems with moisture may arise and will not be covered by the dome camera warranty.

The dome camera must be mounted on a 1-1/2" NPT male threaded wall or ceiling mounting bracket. The mounting bracket is not included in the camera package.

Perform the following steps to mount the dome camera to a ceiling or wall:

1. If installing outdoors, make sure the camera is sealed to prevent excessive moisture from entering the dome.
   - If installing on a wall or overhang, use silicone sealant to seal the cable entry hole.
   - If installing with a pole mount adapter (MNT-AD-POLE-B), use silicone sealant to seal the cable entry hole on the pole mount adapter.
   - Wrap the thread of the mounting bracket with the supplied Teflon sealing tape to create a water tight seal around the camera connection.
   - When applying the Teflon sealing tape, be sure to wrap in the same direction that the mount will be tightened. This will ensure the tape does not unravel when installing the mating parts together.

2. Pull the required cables through the mounting bracket then the grommet.
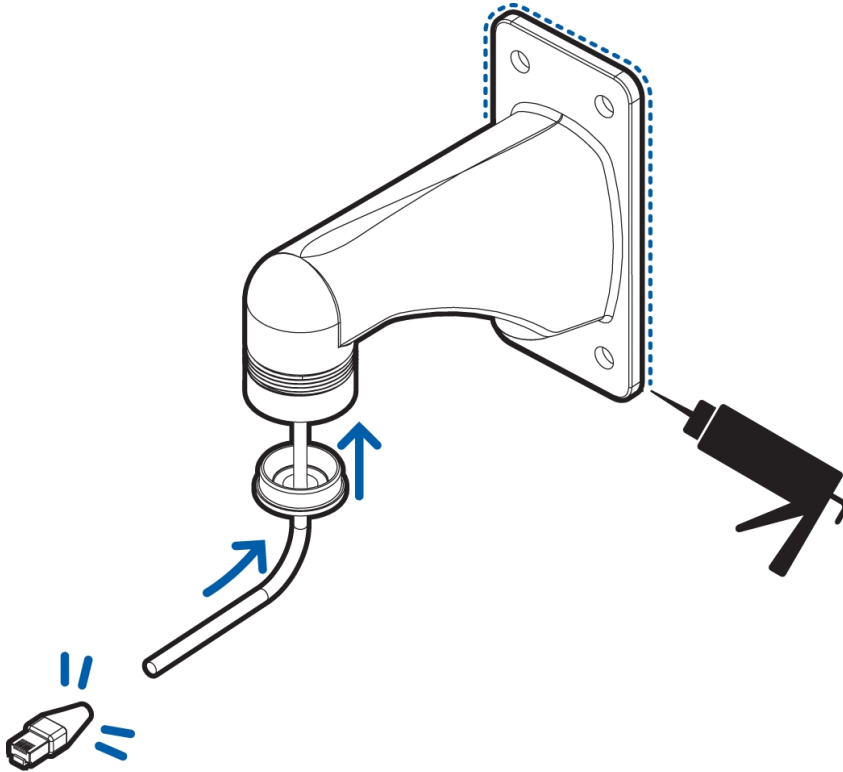
3. Install grommet in the mounting bracket cable entry hole.

4. Remove the camera module from the pendant mount by loosening the 2 side screws holding it in place.
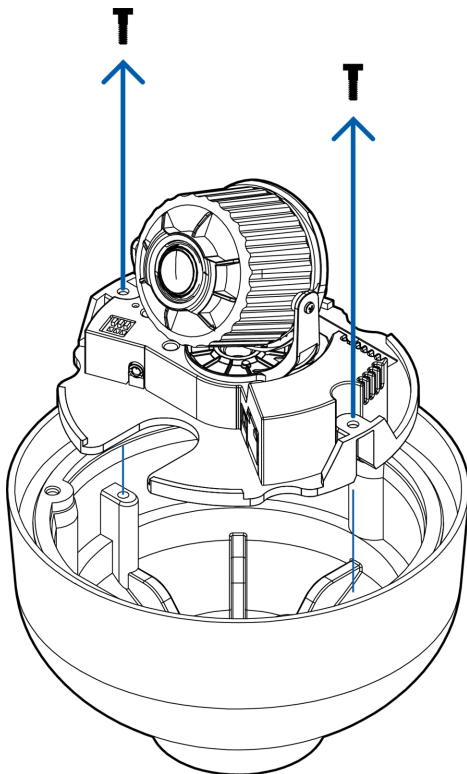
5. Screw the pendant mount onto the wall or ceiling mounting bracket until tight.
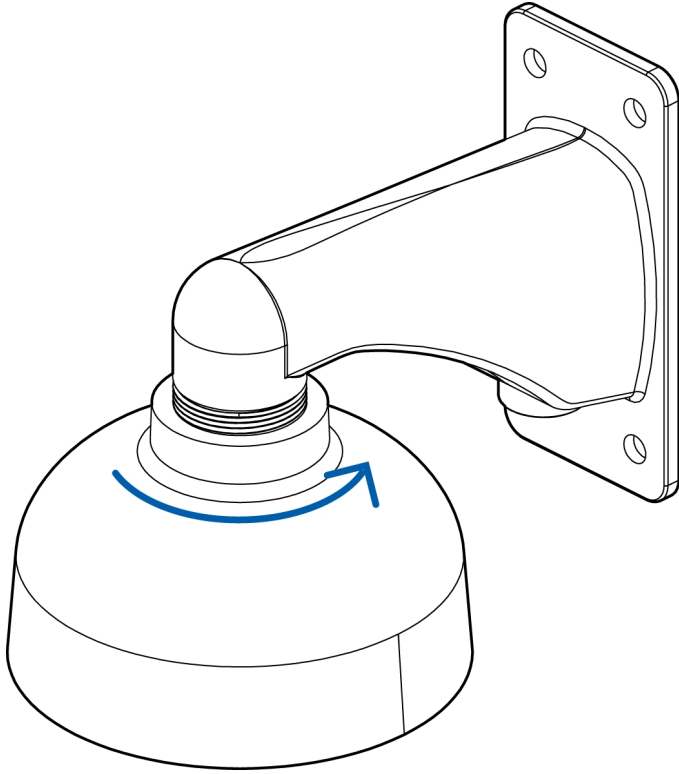
6. Apply a bead of silicone sealant between the mounting bracket and the top of the pendant mount.
7. Pull the cables through the pendant mount.

8. Install the camera module back inside the pendant mount by tightening the 2 side screws.
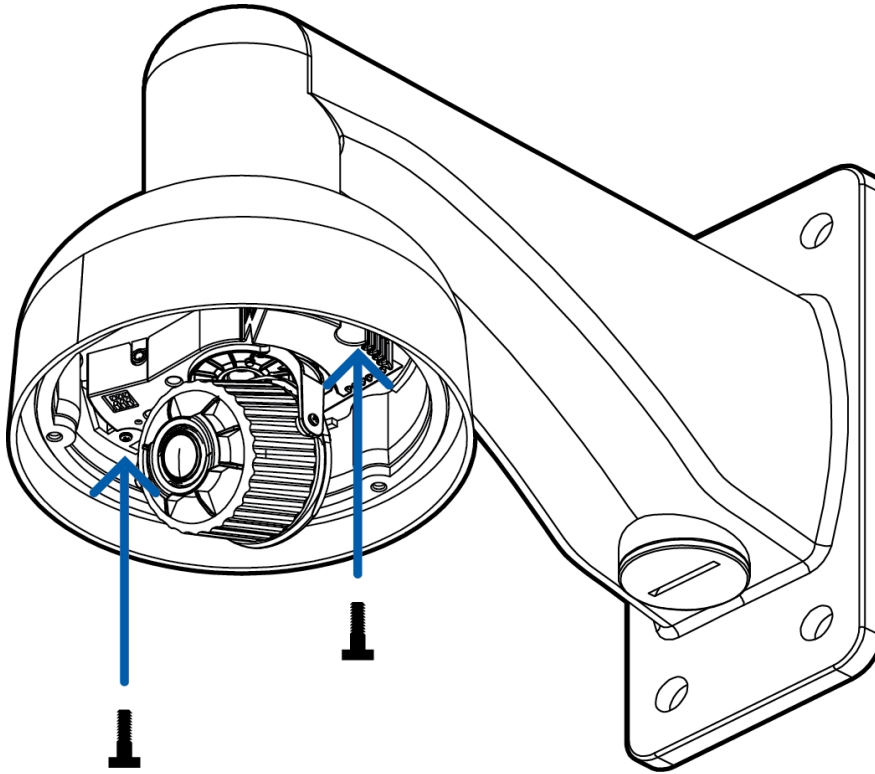
Connecting Cables

Refer to the diagrams in the Overview section for the location of the different connectors.

To connect the cables required for proper operation, complete the following:

1. If external input or output devices are part of the installation (for example: door contacts, relays, etc.), connect the devices to the I/O connector block.

2. If an external microphone or external video monitor needs to be connected to the camera, connect the devices to the camera Audio/Video Connector.

3. Connect a network cable to the camera's Ethernet port (RJ-45 connector).

   ○ Wrap the cable once around the interior base of the dome housing before you make the connection. This will ensure the cable connector is not over-stressed and cause poor video performance.

   ○ The Link LED will turn on once a network link has been established.

4. Connect power using one of the following methods:

   ○ Power over Ethernet (PoE) Class 3 — If PoE is available, the LEDs will turn on.

   ○ External Power — Connect an external 12 V DC or 24 V AC power source to the power connector block.

5. Check that the Connection Status LED indicates the correct state. For more information, see *Connection Status LED Indicators* on page 16.

Assigning an IP Address

The camera automatically obtains an IP address when it is connected to a network.

NOTE: If the camera cannot obtain an IP address from a DHCP server, it will use Zero Configuration Networking (Zeroconf) to choose an IP address. When set using Zeroconf, the IP address is in the 169.254.0.0/16 subnet.

The IP address settings can be changed using one of the following methods:

- Camera's web browser interface: http://*<camera IP address>*/
- Network video management software application (for example, Avigilon Control Center (ACC)™ software).
- ARP/Ping method. For more information, see *Setting the IP Address Using the ARP/Ping Method* on page 18.

NOTE: The default camera username is `admin` and the default password is `admin`.

NOTE: The default camera username is `administrator` with no password.

Accessing the Live Video Stream

Live video stream can be viewed using one of the following methods:

- Web browser interface: http://*<IP address>*/
- Network video management software application (for example, the Avigilon Control Center software).

NOTE: The default camera username is `admin` and the default camera password is `admin`.

NOTE: The default camera username is `administrator` with no password.

Aiming the Dome Camera

1. Loosen the pan and tilt lock screws on the camera.
2. Turn the lens to the desired direction by panning and tilting the lens.
3. Once satisfied, tighten the pan and tilt lock screws to secure the dome camera's position.
4. Rotate the azimuth control ring to set the image to the correct angle.
5. In the Camera Installation Tool or camera web browser interface, adjust the camera's Image and Display settings. From either applications, you can set the desired zoom position, and change the image rotation.

(Optional) Configuring SD Card Storage

To use the camera's SD card storage feature, you must insert an SD card into the card slot.

It is recommended that the SD card have a capacity of 8 GB or more and a write speed of class 6 or better. If the SD card does not meet the recommended capacity or write speed, the recording performance may suffer and result in the loss of frames or footage.

1. Insert an SD card into the camera.

   ⚠️ **CAUTION —** Do not force the SD card into the camera or you may damage the card and the camera. The SD card can only be inserted in one direction.

2. Access the camera's web interface to enable the onboard storage feature. For more information, see the *Avigilon High Definition H.264 Camera Web Interface User Guide*.

Installing the Dome Cover

1. Rotate the black shield located inside the dome bubble so that it does not block the camera's field of view.

2. Attach the dome cover to the base by tightening the screws with the provided Torx key.

3. Remove the plastic cover on the dome bubble.

Focusing the Dome Camera

NOTE: Ensure this procedure is performed after the dome cover is installed, so the focus shift caused by the dome bubble's refraction can be accomodated.

- In the Camera Installation Tool or camera web browser interface, use the camera's Image and Display settings to focus the camera lens.

   a. Click the Auto Focus button to focus the lens.

   b. If the preferred focus was not achieved, use the focus near and far buttons to adjust the focus.

> ⚠ **CAUTION —** Do not attempt to adjust the focus and zoom on the camera manually or the camera lens may become damaged

For More Information

Additional information about setting up and using the device is available in the following guides:

- *Avigilon Control Center Client User Guide*
- *Avigilon High Definition H.264 Web Interface User Guide*
- *Avigilon Camera Configuration Tool User Guide*

The manuals are available on the Avigilon website: avigilon.com/support-and-downloads.

Cable Connections

Connecting External Power

If PoE is not available, the camera needs to be powered through the removable power connector block. Refer to the diagrams in this guide for the location of the power connector block.

The power consumption information is listed in the product specifications.

To connect power to the power connector block, complete the following steps:

1. Remove the power connector block from the camera.
2. Remove the insulation from ¼" (6 mm) of the power wires. Do not nick or damage the wires.
3. Insert the two power wires into the two terminals on the power connector block. The connection can be made with either polarity.

    Use a small slotted (5/64" or 2 mm blade width) screwdriver to loosen and tighten the terminals.

4. Attach the power connector block back into the camera.

> **WARNING —** This product is intended to be supplied by a UL Listed Power Unit marked "Class 2" or "LPS" or "Limited Power Source" with output rated 12 VDC or 24 VAC, 10 W min. or PoE rated 48 VDC, 10 W min.

Connecting to External Devices

External devices are connected to the camera through the I/O terminal block. The pinout for the I/O terminal block is shown in the following diagram:
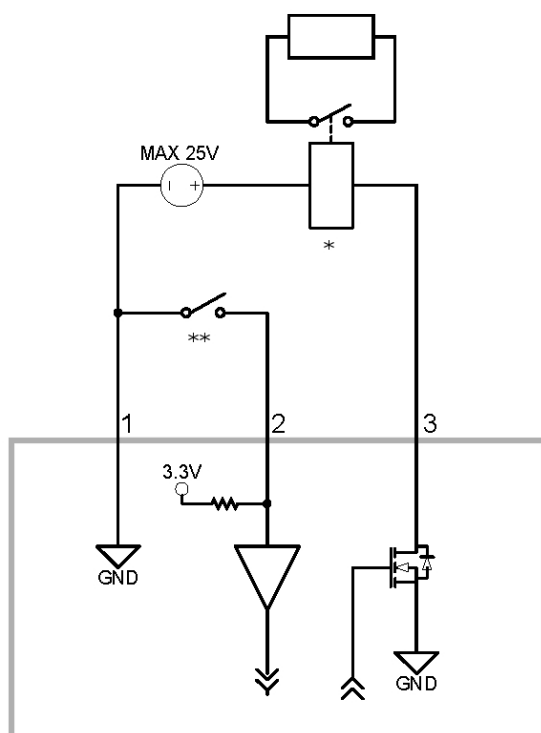
Figure 1: Example application.

1. Ground
2. Input — To activate, connect the Input to the Ground pin. To deactivate, leave disconnected or apply between 3-15 V.
3. Output — When active, Output is internally connected with the Ground pin. Circuit is open when inactive. Maximum load is 25 VDC, 120 mA.

- * — Relay
- ** — Switch

Connecting to Microphones, Speakers and Video Monitors

The camera can be connected to an external microphone, speaker and video monitor through the audio/video connector. The connector is a mini-jack (3.5 mm), and the pinout for it is shown in the following diagram.

NOTE: The camera only supports line level mono audio input and an NTSC or PAL video output.

The video output signal is determined by the camera flicker control setting. When the camera flicker control is set to 60 Hz, the video output signal is NTSC. When the flicker control is set to 50 Hz, the video output signal is PAL. Use the Camera Installation Tool to configure the camera's flicker control in the Image and Display setup.
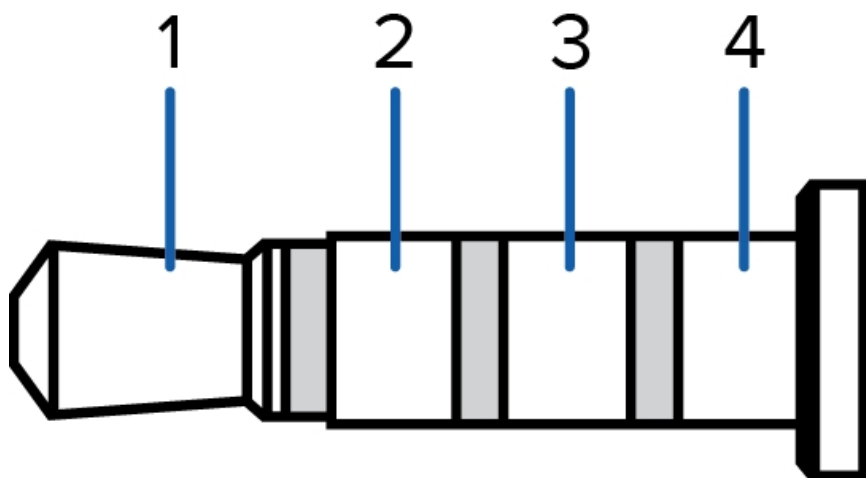
Figure 2: Mini-jack audio video connector.

1. Audio IN
2. Composite Video OUT
3. GND
4. Audio OUT

NOTE: Composite Video OUT is not available for 3.0 MP video analytics camera models.

Connection Status LED Indicators

Once connected to the network, the Connection Status LED will display the progress in connecting to the Network Video Management software.

The following table describes what the LEDs indicate:

Connection State	Connection Status LED	Description
Obtaining IP Address	One short flash every second	Attempting to obtain an IP address.
Discoverable	Two short flashes every second	Obtained an IP address but is not connected to the Network Video Management software.
Upgrading Firmware	Two short flashes and one long flash every second	Updating the firmware.
Connected	On	Connected to the Network Video Management software or an ACC™ Server. The default setting can be changed to "Off" using the camera's web user interface. For more information see the *Web User Interface Guide*.

Resetting to Factory Default Settings

If the deviceno longer functions as expected, you can choose to reset the device to its factory default settings.

Use the firmware revert button to reset the device. The firmware revert button is shown in the following diagram:

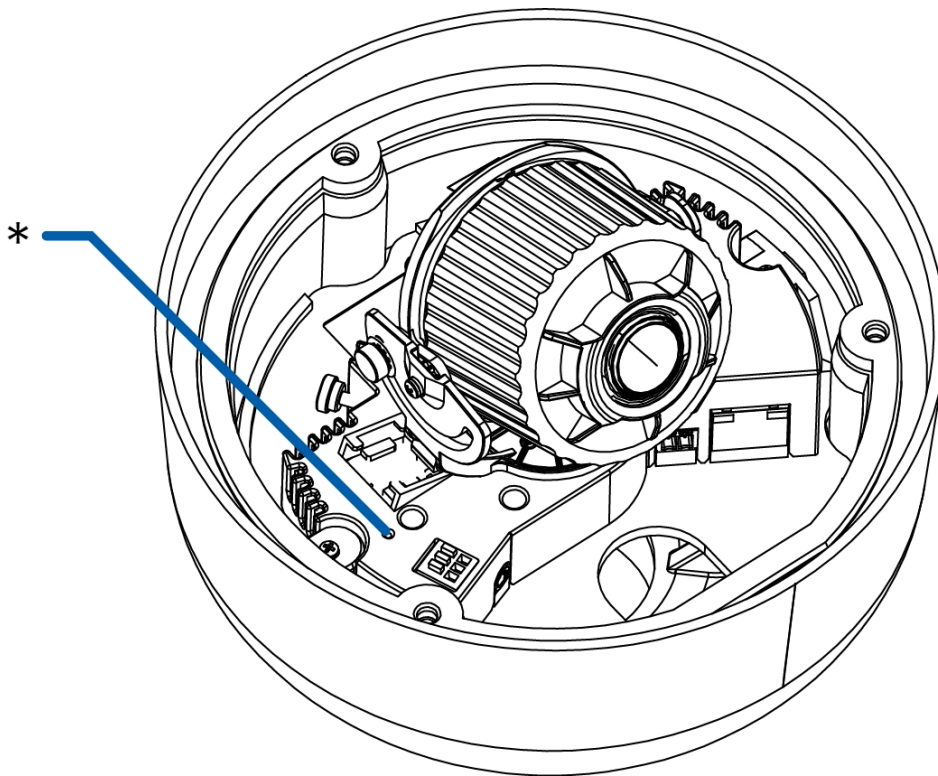**Figure 3:** The firmware revert button on the side of the dome camera.

1. Disconnect power from the device.
2. Using a straightened paperclip or similar tool, gently press and hold the firmware revert button.
3. While continuing to hold the button, power the device.

   Release the button after three seconds.

⚠ **CAUTION —** Do not apply excessive force. Inserting the tool too far will damage the camera.

Setting the IP Address Using the ARP/Ping Method

Complete the following steps to configure the camera to use a specific IP address:

1. Locate and copy down the MAC Address (MAC) listed on the Serial Number Tag for reference.

2. Open a Command Prompt window and enter the following commands:

   a. `arp -s` *<New Camera IP Address> <Camera MAC Address>*

      For example: `arp -s 192.168.1.10 00-18-85-12-45-78`

   b. `ping -l 123 -t` *<New Camera IP Address>*

      For example: `ping -l 123 -t 192.168.1.10`

3. Reboot the camera.

4. Close the Command prompt window when you see the following message:

   `Reply from` *`<New Camera IP Address>`*`: ...`

Cleaning

Dome Bubble

If the video image becomes blurry or smudged in areas, it may be because the dome bubble requires cleaning.

To clean the dome bubble:

- Use hand soap or a non-abrasive detergent to wash off dirt or fingerprints.
- Use a microfiber cloth or non-abrasive fabric to dry the dome bubble.

Important: Failure to use the recommended cleaning materials may result in a damaged or scratched dome bubble. A damaged dome bubble may negatively impact image quality and cause unwanted IR light reflecting into the lens.

Body

- Use a dry or lightly dampened cloth to clean the camera body.
- Do not use strong or abrasive detergents.

Specifications

Camera

Audio Input	Line input, A/V mini-jack (3.5 mm)
Video Output	NTSC/PAL, A/V mini-jack (3.5 mm)
Lens	H3-DP1: 3-9mm, F1.2, P-iris H3-DP2: 9-22mm, F1.6, P-Iris
Onboard Storage	SD/SDHC/SDXC slot – minimum class 4; class 6 or better recommended

Network

Network	100Base-TX
Cabling Type	CAT5
Connector	RJ-45
ONVIF	ONVIF compliance version 1.02, 2.00, Profile S (www.onvif.org) H3A models are also compliant with version 2.2.0 of the Analytics Service Specification (bounding boxes and scene descriptions not available with third-party VMS)
Security	Password protection, HTTPS encryption, digest authentication, WS authentication, user access log, 802.1x port based authentication.
Streaming Protocols	IPv4, HTTP, HTTPS, SOAP, DNS, NTP, RTSP, RTCP, RTP, TCP, UDP, IGMP, ICMP, DHCP, Zeroconf, ARP RTP/UDP, RTP/UDP multicast, RTP/RTSP/TCP, RTP/RTSP/HTTP/TCP, RTP/RTSP/HTTPS/TCP, HTTP

Mechanical

Dimensions ØxH	167 mm x 157mm (6.6" x 6.2")
Weight	2.1 kg (4.6 lbs)
Dome Bubble	Polycarbonate, clear
Body	Aluminum
Housing	Pendant mount, vandal resistant
Finish	Powder coat, cool gray 2
Adjustment Range	360° pan, 180° tilt, 180° azimuth

Electrical

Power Consumption	9 W
Power Source	VDC: 12 V +/- 10%, 9 W min VAC: 24 V +/- 10%, 12 VA min PoE: IEEE802.3af Class 3 compliant
Power Connector	2-pin terminal block
RTC Backup Battery	3V Manganese Lithium (models with onboard storage only)

Environmental

Operating Temperature	-30 °C to +50 °C (-22 °F to 122 °F)
Storage Temperature	-40 °C to +70 °C (-40 °F to 158 °F)
Humidity	0-95% non-condensing

Certifications

Certifications	UL cUL CE ROHS WEEE RCM EAC KC
Safety	UL 60950-1 CSA 60950-1 IEC/EN 60950-1
Environmental	IK10 Impact Rating Meets IEC 60529 IP66 Weather Rating IEC/UL/CSA 60950-22
Electromagnetic Emissions	FCC Part 15 Subpart B Class B EN 55032 Class B IC ICES-003 Class B EN 61000-6-3 EN 61000-3-2 EN 61000-3-3
Electromagnetic Immunity	EN 55024 EN 61000-6-1

Limited Warranty and Technical Support

Avigilon warranty terms for this product is provided at avigilon.com/warranty.

Warranty service and technical support can be obtained by contacting Avigilon Technical Support:
avigilon.com/contact-us/.