Installation Guide

Avigilon H4 Video Intercom with Recessed Mount

H4VI-RO1-IR

Important Safety Information

This manual provides installation and operation information and precautions for the use of this device. 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 reference.

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

This 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.
- Installation of the device 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, 10 W min. or Power over Ethernet (PoE), rated 48 VDC, 10 W min.
- Do not connect directly to a mains power system for any reason.

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

- Do not expose the camera directly to high levels of x-ray, laser, or UV radiation. Direct exposure to high levels of x-ray, laser, or UV radiation may cause permanent damage to the image sensor.
- Do not install near any heat sources such as radiators, heat registers, stoves, or other sources of heat.
- Do not subject the device cables to excessive stress, heavy loads or pinching.
- Do not open or disassemble the device. There are no user serviceable parts.
- Refer all device 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.

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.

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

Avigilon Corporation
avigilon.com

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Overview

> **Note:** Be careful not to scratch the camera. The resulting marks or fingerprints may affect the overall image quality. Keep the protective covers on the camera dome until the installation is complete.

Cover View
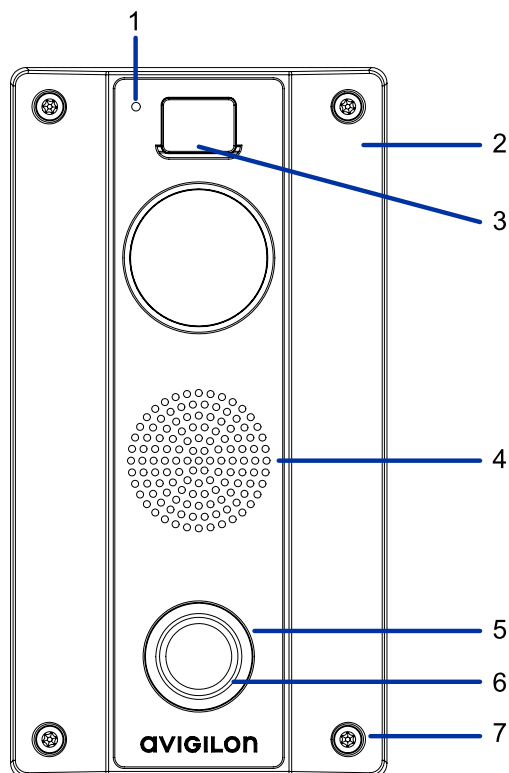
1. **Microphone**

   Used for communicating with the operator.

2. **Video Intercom body**

   The main body of the camera, including the internal mechanisms for aiming the camera.

3. **IR illuminator**

   Provides scene illumination in the IR spectrum.

4. **Speaker**

   Used to communicate with users at the Video Intercom.

5. **Call button**

   Button for user to initiate call with the operator.
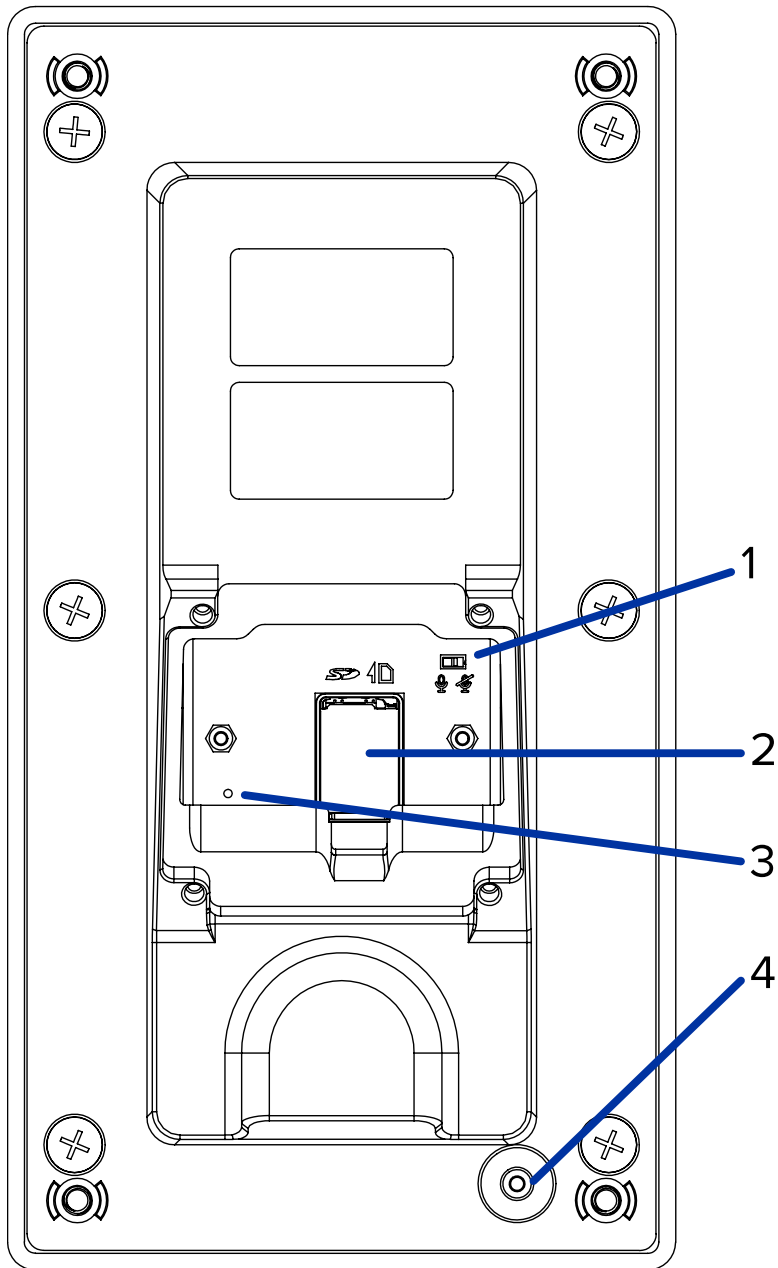
6. **LED ring**

   Provides information about device status. For more information, see *Call Button LED Blink Patterns* on page 28.

7. **Tamper resistant screws**

   Captive star-shaped screws used for mounting Video Intercom to adapter plate or surface mount adapter (accessory sold separately).

Rear View

1. **Microphone switch**

   Enables or disables the microphone. For more information, see *(Optional) Enabling the Microphone* on page 12.

2. **MicroSD card slot**

   Accepts a microSD card for onboard storage. For more information, see *(Optional) Configuring microSD Card Storage* on page 12.
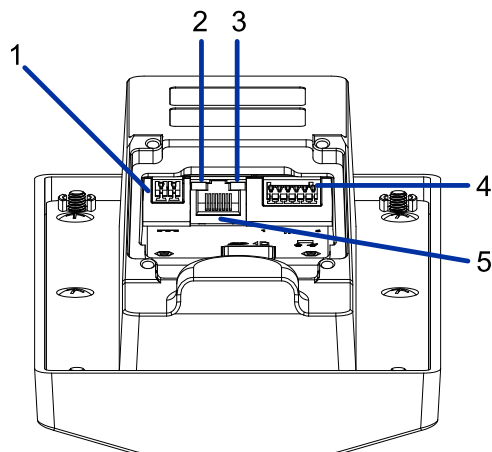
3. **Firmware revert button**

   Resets the Video Intercom. For more information, see *Resetting to Factory Default Settings* on page 29.

4. **Tamper detection switch**

   Detects whether the camera has been tampered with. Used with optional accessory Safety Relay.

Bottom View

> **Note:** The parts labeled 1, 2, 3, 4 and 5 are protected by a rear cover that is not shown in the above view.

1. **External power**

   Accepts an external DC power connection when Power over Ethernet (PoE) is not available.

2. **Connection status LED indicator**

   Provides information about device operation. For more information, see *Connection Status LED Indicator* on page 27.

3. **Link LED**

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

4. **External I/O**

   Provides connections to external input/output.

5. **Ethernet port**

   Accepts power and Ethernet connection to the network.

   The camera can be powered by PoE. Server communication and image data transmission also occur over this connection.

Required Tools and Materials

The following tools are required to complete the installation but are not included in the package:

- No. 2 Phillips screwdriver — for attaching camera to an electrical box or mounting surface.
- No. 1 Phillips screwdriver — for attaching the rear cover plate to the Video Intercom.
- Drill — for drilling mounting holes and cable access hole into the mounting surface, if required.

Camera Package Contents

Ensure the camera package contains the following:

- Avigilon H4 Video Intercom (H4VI-RO1)
- Mounting template sticker
- 4 screws and anchors for solid walls
- Grommet piercing tool
- T20 security star-shaped key
- Recessed Mounting Plate
- Rear Cover Plate

Installation

(Optional) Enabling the Microphone

The video intercom camera features a switch to physically enable or disable the microphone. The microphone switch is set to ⌇ by default.

It is recommended that you enable the microphone before installing the camera in its final location.

1. Remove the rear cover plate.
2. Locate the microphone switch on the rear of the camera body.
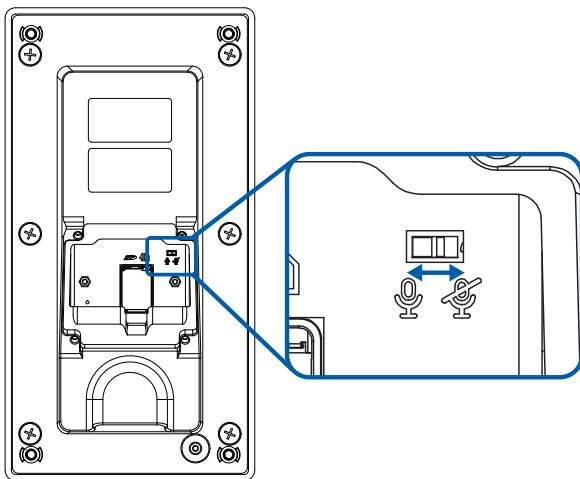
3. Slide the switch from the default ⌇ position to ⌇ to enable the microphone.

(Optional) Configuring microSD Card Storage

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

It is recommended that the microSD 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. Using the T10 star Key, unscrew and open the microSD cover at the rear of the camera.

   For more information about the location of the rear cover and the microSD card slot, see *Rear View* on page 8 and on page 9.

2. Insert a microSD card into the camera.

> ⚠ **CAUTION —** Do not force the microSD card into the camera or you may damage the card and the camera.

3. 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*.
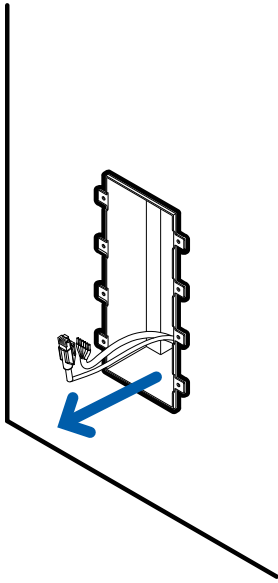
Using the Recessed Mounting Plate

For recessed mount installations the H4 Video Intercom must be installed using the mounting plate. There are two sets of holes on the mounting plate depending on how the Video Intercom is being mounted.

> ⚠ **CAUTION —** If using the optional safety relay accessory, ensure that the intercom is installed against a smooth wall surface to reduce false alarms.

If installing into a vertically mounted 4-gang electrical box (not provided):

1. Pull cables through the electrical box.

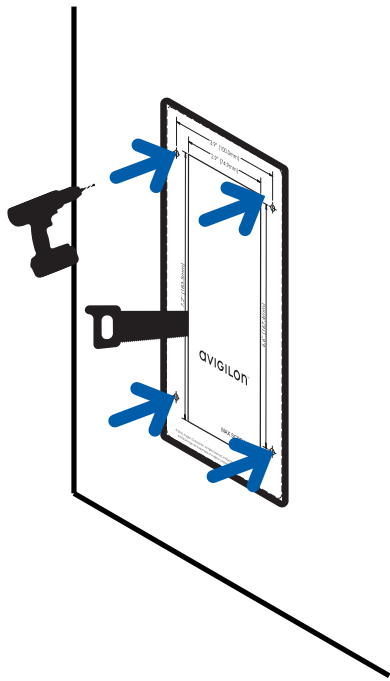2. Install screws into the 4 inner mounting holes. Ensure that the arrow on the recessed mounting plate is facing towards you and upwards.
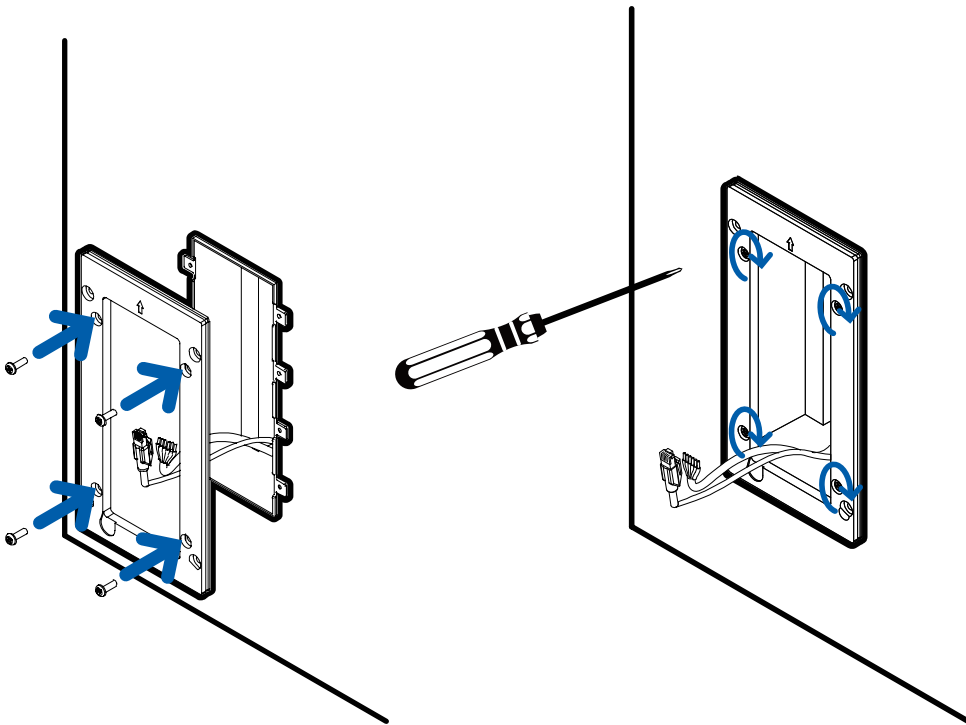
If installing recessed mounting plate onto a flat surface:

1. Use mounting template to drill 4 holes in the correct locations and install the screw anchors.

2. Cut a hole in the wall at least as large as the dashed lines on the mounting template.

3. Pull cables through the mounting plate.
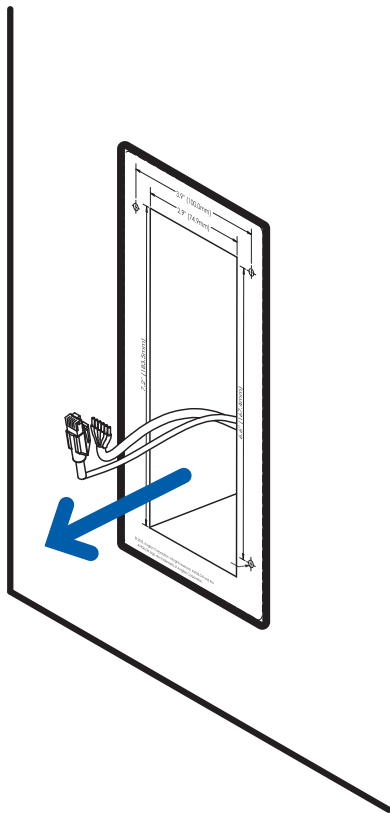
4. Install the mounting plate to the wall using the 4 outer mounting holes and the provided screws. Ensure that the arrow on the mounting plate is facing towards you and upwards.
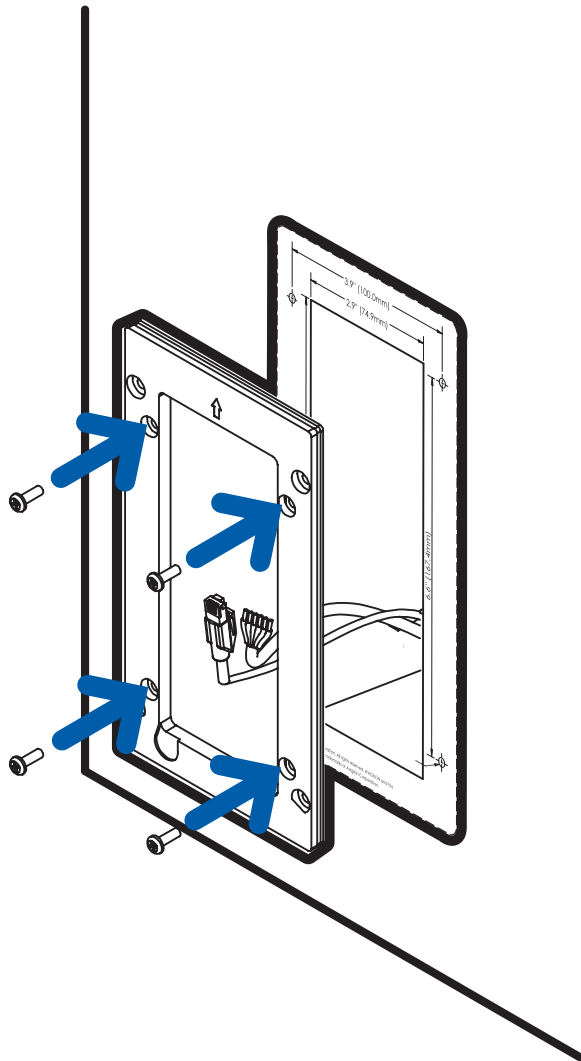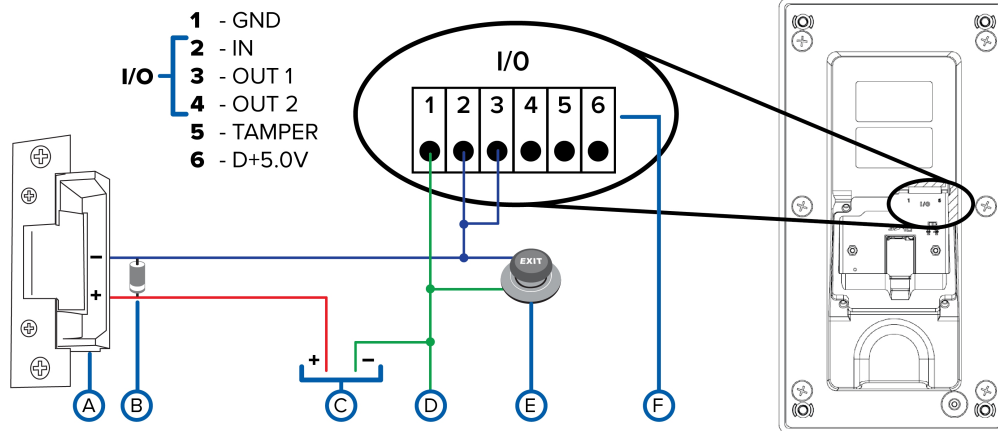
Wiring the Video Intercom to a Door Strike

CAUTION — If you are installing the optional Safety Relay device to enable lockout when tampering with the Video Intercom is detected, refer to the wiring diagrams in the *Installation Guide — Avigilon Safety Relay for Video Intercom*.

Parts

- A. Door strike
- B. 60V freewheel diode (cathode is connected to the + wire, and anode is connected to the – wire)
- C. Power supply
- D. GND
- E. REX sensor
- F. 6-pin digital I/O connector of the Video Intercom

Wiring

1. Connect a 60V freewheel diode between the wires connected to the + (diode cathode) and – (diode anode) terminals of the door strike.
2. Connect terminal 1 (GND) to the – terminal of the power supply and the REX sensor.
3. Connect terminals 2 and 3 to the REX sensor, and the – terminal on the door strike.
4. Connect the + terminal on the power supply to the + terminal on the door strike.

Preparing the Cables

1. Remove the rear cover plate and the grommet piercing tool from the accessory kit.
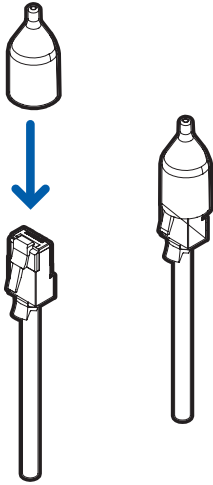
2. Place the grommet piercing tool over the end of the RJ45 Ethernet cable.

3. Push the cable through the grommet in the rear cover plate. If using external power or I/O then pull the tabs out of the grommets and feed the cables through the smaller grommet holes. Silicone sealant is recommended to seal any wires through the smaller grommet holes.
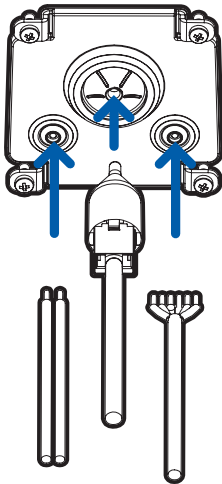
4. If using external power or I/O, connect the provided terminal blocks onto the wires after they are pulled through the grommets.
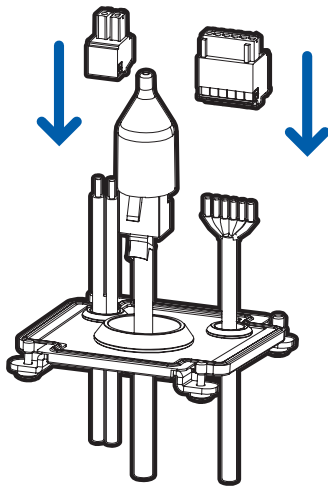
5. After the procedure is complete, remove the grommet piercing tool.
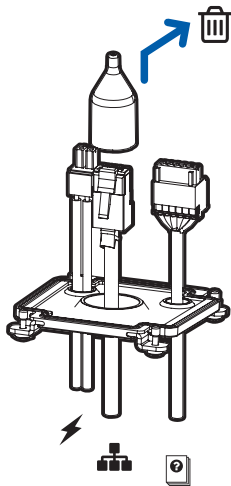
Installing the Video Intercom to the Mounting Plate

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.

After you install the mounting plate and prepare the cables, mount the camera body to the mounting plate using the following steps:

1. Connect cables pulled through the rear cover plate to their respective camera ports.
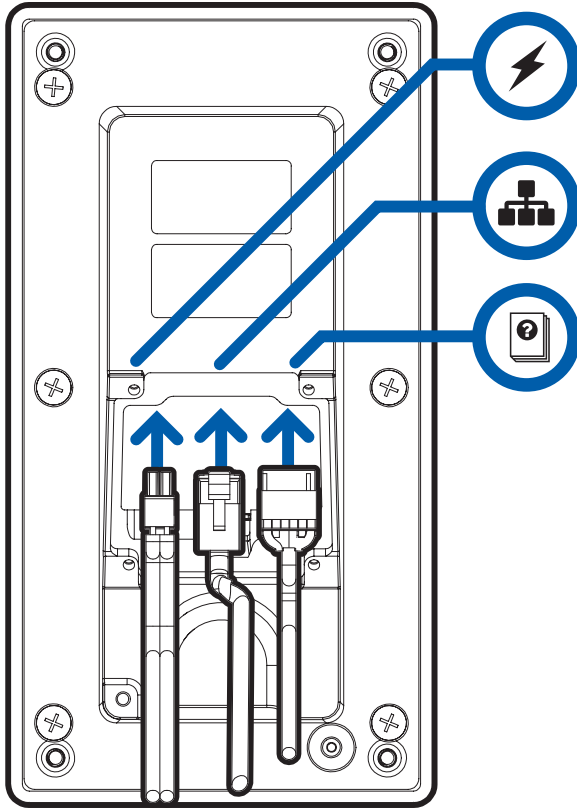
The connection status LED indicator will turn on once a network link has been established. For more information, see *Connection Status LED Indicator* on page 27.

2. Slide the rear cover plate towards the Video Intercom and attach using the 4 captive screws.
   Note: Orient the rear cover plate so the smaller grommet holes are at the bottom before mounting the rear cover.
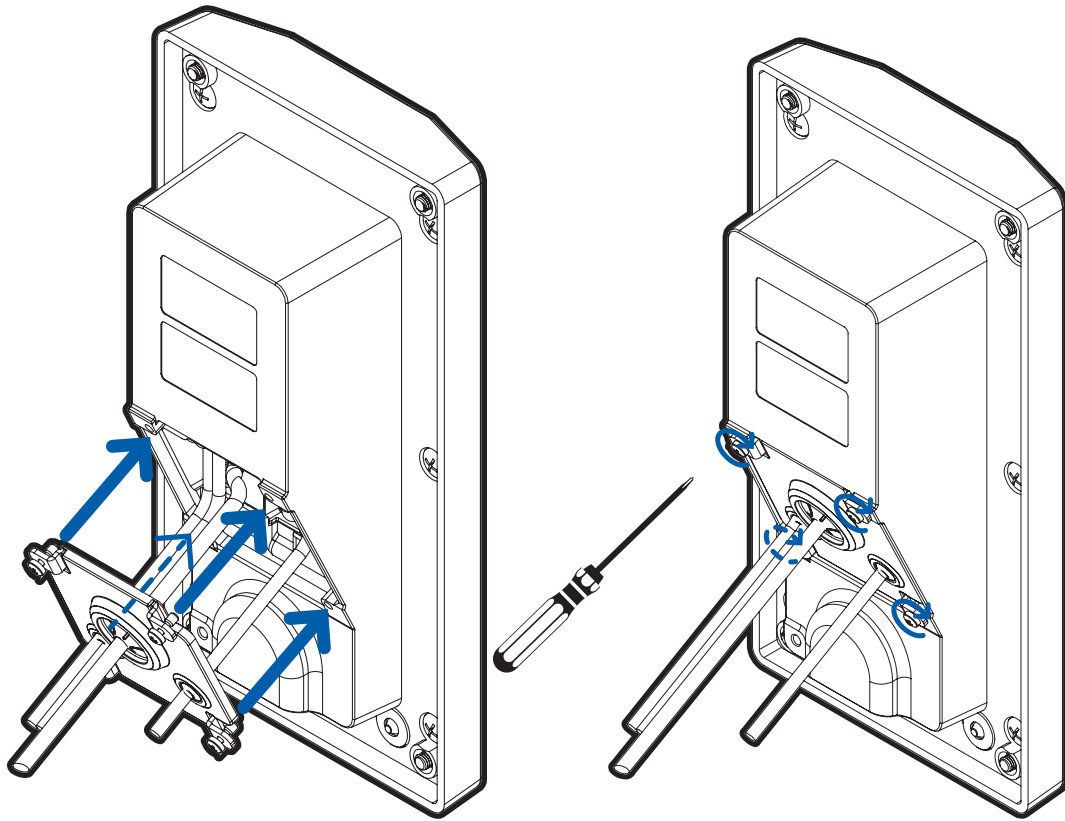
3. Align the Video Intercom body with the mounting plate and place against the wall. Ensure that no wires are pinched during installation.
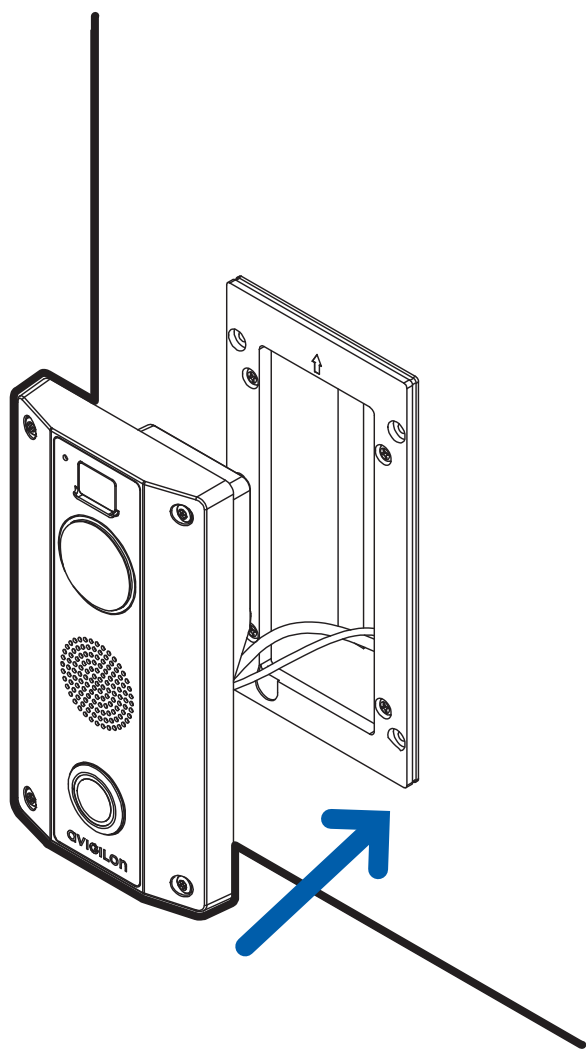
4. Attach the Video Intercom to the wall using the 4 captive security star-shaped screws.
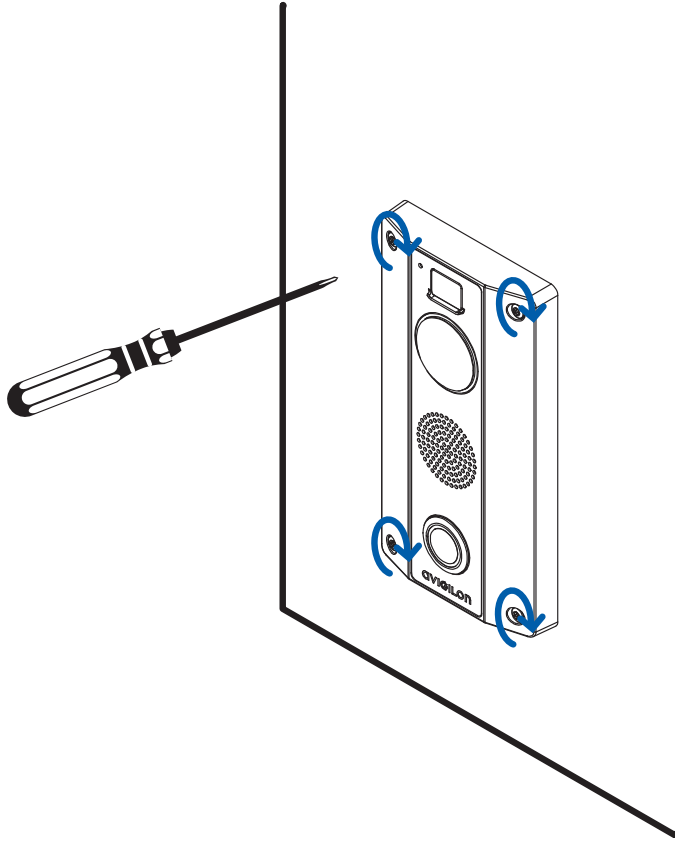
5. Remove the protective film on the outside of dome bubble.

Initializing a Camera Username and Password

Cameras manufactured after January 1, 2020, do not have a default username or password and will be in a factory default state.

> **Important:** You must create a user with *administrator* privileges before the camera is operational.

The first user can be created using any of the following methods:

- Camera's Web Interface: enter the camera's IP address in a web browser to access the web interface. If the camera is in the factory default state you will be redirected to the Add a new user page to create the first user. For more information, see the *Avigilon High Definition H4 and H5 IP Camera Web Interface User Guide.*
- Camera Configuration Tool version 1.4.4 or later: cameras discovered in the factory default state will be identified by ⚠️. Select the **Admin Users** tab to create the first user. For more information, see the *Avigilon Camera Configuration Tool User Guide*.

- USB Wi-Fi Adapter: when connecting a camera in the factory default state, you will be redirected to the Create Administrator User page to create the first user. For more information, see *Avigilon USB Wi-Fi Adapter System User Guide*.

- Avigilon Control Center software version 7.4 or later, or version 6.14.12 or later: when connecting a camera in the factory default state, the client software will ask you to create a new user. For more information, see the *Avigilon Control Center Client User Guide*.

- Avigilon Blue service v3.0 or later: when adding a camera you will be asked to create a new user for cameras in the factory default state. For more information, see the *Avigilon Blue Subscriber or Dealer User Guides*.

> **Tip:** If you are connecting your Avigilon camera to a 3rd party VMS, you will need to set up the first user through the camera's Web Interface, Camera Configuration Tool, or USB Wifi Adapter before you connect to the 3rd party VMS.

Assigning an IP Address

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

> **Note:** If the device 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:

- Device's web browser interface: http://*<camera IP address>*/.

- Network Video Management software application (for example, the Avigilon Control Center™ software).

- ARP/Ping method. For more information, see *Setting the IP Address Using the ARP/Ping Method* on page 30.

Accessing the Live Video Stream

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

- Web browser interface: http://*< camera IP address>*/.

- Network Video Management software application (for example, the Avigilon Control Center™ software).

Configuring the Camera

Once installed, use one of the following methods to configure the camera:

- If you have installed multiple cameras, you can use the Avigilon Camera Configuration Tool to configure common settings. For more information, see the *Avigilon Camera Configuration Tool User Guide*.

- If the camera is connected to the Avigilon Control Center system, you can use the client software to configure the camera. For more information, see the *Avigilon Control Center Client User Guide*.

- If the camera is connected to a third-party network management system, you can configure the camera's specialty features in the camera's web browser interface. For more information, see the *Web Interface User Guide — Avigilon High Definition H.264 IP Cameras*.

For More Information

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

- *Avigilon Control Center Client User Guide*
- *Web Interface User Guide — Avigilon High Definition H4 and H5 IP Cameras*
- *Avigilon Camera Configuration Tool User Guide*
- *Designing a Site with Avigilon Video Analytics*
- *Installation Guide — Avigilon Safety Relay for Video Intercom*

These guides are available on **help.avigilon.com** and on the Avigilon website: **avigilon.com/support-and-downloads**.

Connection Status LED Indicator

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

The following table describes what the LED indicator shows:

| Connection State	Connection Status LED Indicator	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 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 connected setting can be changed to Off using the camera's web user interface. For more information see the *Avigilon High Definition H4 and H5 IP Camera Web Interface User Guide*.

Call Button LED Blink Patterns

State	Blink Pattern
Calling	Pulses two times followed by a brief pause. This is repeated until the call is accepted or times out.
Call Not Answered	Two short flashes every second for three seconds.
Call Disconnected (ACC software ends call after accepting)	Three short flashes followed by a brief pause, repeats for one second.
Door Grant	Quick pulse lasting for four seconds.
Not Connected (button pressed when Video Intercom not connected to the ACC software)	Rapid blinking lasting for four seconds.
In Call	Slow pulse lasting for the duration of the call.

Resetting to Factory Default Settings

If the device no 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:
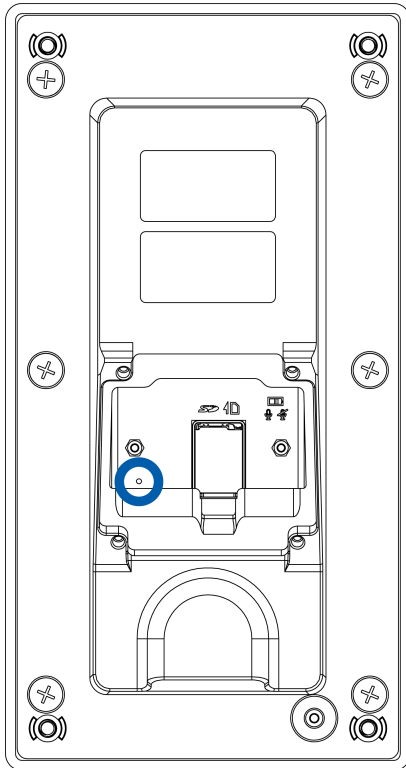
1. Ensure the device is powered on.

2. Remove the rear cover plate to gain access to the firmware revert button.

3. Using a straightened paperclip or similar tool, gently press and hold the firmware revert button for three seconds.

> ⚠️ **CAUTION —** Do not apply excessive force. Inserting the tool too far may 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:

> **Note:** The ARP/Ping Method will not work if the **Disable setting static IP address through ARP/Ping method** check box is selected in the camera's web browser interface. For more information, see the *Avigilon High Definition H4 and H5 IP Camera Web Interface User Guide*.

1. Locate and make note of 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>*`: ...`

Limited Warranty and Technical Support

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

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