AXIS Q35 Series

AXIS Q3517–LV Network Camera

AXIS Q3517–LVE Network Camera

User Manual
### AXIS Q35 Series

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This user manual describes multiple products. Some of the instructions may not be relevant for your product.
Solution overview
AXIS Q35 Series

Product overview

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Product overview

AXIS Q3517-LV

1 Network connector
2 Control button
3 I/O connector
4 Audio out
5 Audio in
6 DC connector
7 SD card slot
8 Status LED (2x)
9 Function button
10 IR LED (2x)

AXIS Q3517-LVE, AXIS Q3527-LVE

1 Network connector
2 Control button
3 I/O connector
4 Audio out
5 Audio in
## AXIS Q35 Series

### Product overview

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<td>IR LED (2x)</td>
</tr>
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</table>

**CAUTION**

The heater may be hot.
**AXIS Q35 Series**

**Setup**

**Find the device on the network**

To find Axis devices on the network and assign them IP addresses in Windows®, use AXIS IP Utility or AXIS Device Manager. Both applications are free and can be downloaded from axis.com/support.

For more information about how to find and assign IP addresses, see the document *How to assign an IP address and access your device* on the device page at axis.com.

**Access the device**

1. Open a browser and enter the IP address or host name of the Axis device.
   - If you have a Mac computer (OS X), go to Safari, click on Bonjour and select the device from the drop-down list. To add Bonjour as a browser bookmark, go to Safari > Preferences.
   - If you do not know the IP address, use AXIS IP Utility or AXIS Device Manager to find the device on the network.
2. Enter the username and password. If you access the device for the first time, you must set the root password. See *Set a secure password for the root account* on page 7.
3. The live view page opens in your browser.

**Secure passwords**

*Important*

Axis devices send the initially set password in clear text over the network. To protect your device after the first login, set up a secure and encrypted HTTPS connection and then change the password.

The device password is the primary protection for your data and services. Axis devices do not impose a password policy as they may be used in various types of installations.

To protect your data we strongly recommend that you:

- Use a password with at least 8 characters, preferably created by a password generator.
- Don’t expose the password.
- Change the password at a recurring interval, at least once a year.

**Set a secure password for the root account**

*Important*

The default administrator username is root. If the password for root is lost, reset the device to factory default settings.

1. Type a password. Follow the instructions about secure passwords. See *Secure passwords on page* 7.
2. Retype the password to confirm the spelling.
3. Click Create login. The password has now been configured.

**Need more help?**

You can access the built-in help from the device's webpage. The help provides more detailed information on the device's features and their settings.
**AXIS Q35 Series**

**Setup**

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**Image quality**

**Capture modes**

Capture mode defines the maximum frame rate available in the Axis product. Depending on which capture mode you select, you may not be able to use WDR.

A capture mode consists of a resolution and the corresponding frame rate available in the product. The capture mode setting affects the camera's field of view and aspect ratio.

The lower resolution capture mode is cropped out from the highest resolution.

![Image showing field of view and aspect ratio change between two different capture modes.](image)

*The image shows how the field of view and aspect ratio can change between two different capture modes.*

Which capture mode to choose depends on the requirements of frame rate and resolution for the specific surveillance setup. For specifications about available capture modes, see the product's datasheet at axis.com.

**Select capture mode**

Which capture mode to choose depends on the requirements of frame rate and resolution for the specific surveillance setup. For specifications about available capture modes, see the product's datasheet. To find the latest version of the datasheet, go to axis.com

**Remote focus and zoom**

The remote focus and zoom functionality allows you to make focus and zoom adjustments to your camera from a computer. It is a convenient way to ensure that the scene's focus, viewing angle and resolution are optimized without having to visit the camera's installation location.
Left: no focus. Right: remote focus applied.

Left: no zoom. Right: remote zoom applied.

**How to straighten image**

Straighten image straightens the image horizontally by rotating and cropping it digitally. Due to the cropping, a part of the original image is lost. The functionality is ideally used to straighten the image during installation. The illustration shows before and after straighten image has been used.
Setup

1. Go to Settings > Image > Image correction.
2. Enable Straighten image.

Hide parts of the image with privacy masks
Create a privacy mask to hide a part of the image:
1. Go to Settings > Privacy mask.
2. Click New.

Reduce noise in low-light conditions
To reduce noise in low-light conditions, you can adjust one or more of the following settings:
• Set the exposure mode to automatic.

Note
A high max shutter value can result in motion blur.
• To slow down the shutter speed, set max shutter to the highest possible value.
• Reduce sharpness in the image.

Benefit from IR light in low-light conditions using night mode
Your camera uses visible light to deliver color images during the day. As the available light diminishes, you can set the camera to automatically shift to night mode, in which the camera uses both visible light and near-infrared light to deliver black-and-white images. Since the camera uses more of the available light it can deliver brighter, more detailed, images.

1. Go to Settings > Image > Day and night, and make sure that the IR cut filter is set to Auto.

Select exposure mode
There are different exposure mode options in the camera that adjusts aperture, shutter speed, and gain to improve image quality for specific surveillance scenes. Go to Settings > Image > Exposure and select between the following exposure modes:
• For most use cases, select Automatic exposure.
• For environments with certain artificial lighting, for example fluorescent lighting, select Flicker-free.
  Select the same frequency as the power line frequency.
• For environments with certain artificial light and bright light, for example outdoors with fluorescent lighting at night and sun during daytime, select Flicker-reduced.
  Select the same frequency as the power line frequency.
• To lock the current exposure settings, select Hold current.

Stabilize a shaky image with Electronic Image Stabilization (EIS)
Electronic Image Stabilization (EIS) can be used in environments where the product is mounted in an exposed location and subject to vibrations, for example, wind or passing traffic. Turn on EIS to get a smoother and steadier image without blur.

EIS also reduces the file size of the compressed image and lowers the bitrate of the video stream.

Note
When EIS is turned on the image is cropped slightly, lowering the maximum resolution.
**AXIS Q35 Series**

**Setup**

1. Go to Settings > Image > Image correction.
2. Turn on EIS.

**Handle scenes with strong backlight**

Dynamic range is the difference in light levels in an image. In some cases the difference between the darkest and the brightest areas can be significant. The result is often an image where either the dark or the bright areas are visible. Wide dynamic range (WDR) makes both dark and bright areas of the image visible.

1. Go to Settings > Image > Wide dynamic range.
2. If required, turn on WDR.

*Image without WDR.*

*Image with WDR.*

**Note**

WDR may cause artifacts in the image.

Find out more about WDR and how to use it at [axis.com/web-articles/wdr](http://axis.com/web-articles/wdr).

**Overlays**

Overlays are superimposed over the video stream. They are used to provide extra information during recordings, such as a timestamp, or during product installation and configuration. You can add either text or an image.

**Show a text overlay in the video stream when the device detects motion**

This example explains how to display the text “Motion detected” when the device detects motion:

Make sure the AXIS Video Motion Detection application is running:

1. Go to Settings > Apps > AXIS Video Motion Detection.
AXIS Q35 Series

Setup

2. Start the application if it is not already running.
3. Make sure you have set up the application according to your needs.

Add the overlay text:

4. Go to Settings > Overlay.
5. Select Create overlay and select Text overlay.
6. Enter #D in the text field.
7. Choose text size and appearance.
8. To position the text overlay, choose Custom or one of the presets.

Create a rule:

9. Go to System > Events > Rules and add a rule.
10. Type a name for the rule.
11. In the list of conditions, select AXIS Video Motion Detection.
12. In the list of actions, select Use overlay text.
13. Select a view area.
14. Type "Motion detected".
15. Set the duration.
16. Click Save.

Note: If you update the overlay text it will be automatically updated on all video streams dynamically.

Streaming and storage

Video compression formats

Decide which compression method to use based on your viewing requirements, and on the properties of your network. The available options are:

Motion JPEG

Motion JPEG, or MJPEG, is a digital video sequence that is made up of a series of individual JPEG images. These images are then displayed and updated at a rate sufficient to create a stream that shows constantly updated motion. For the viewer to perceive motion video the rate must be at least 16 image frames per second. Full motion video is perceived at 30 (NTSC) or 25 (PAL) frames per second.

The Motion JPEG stream uses considerable amounts of bandwidth, but provides excellent image quality and access to every image contained in the stream.

H.264 or MPEG-4 Part 10/AVC

Note: H.264 is a licensed technology. The Axis product includes one H.264 viewing client license. To install additional unlicensed copies of the client is prohibited. To purchase additional licenses, contact your Axis reseller.

H.264 can, without compromising image quality, reduce the size of a digital video file by more than 80% compared to the Motion JPEG format and by as much as 50% compared to the MPEG-4 standard. This means that less network bandwidth and storage space are required for a video file. Or seen another way, higher video quality can be achieved for a given bitrate.
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Setup

Bitrate control
By setting the bitrate control you can manage the bandwidth consumption for your video stream.

Variable bitrate (VBR)
With variable bitrate the bandwidth varies based on the level of activity in the scene. The more activity in the scene, the more bandwidth is required. This option guarantees that image quality is constant but requires storage margins.

Maximum bitrate (MBR)
The maximum bitrate option allows you to set a target bitrate value to be able to handle system bitrate limitations. To keep the instantaneous bitrate below the specified target bitrate, there may be a decrease in image quality or the frame rate may decrease. You have the option to prioritize either image quality or frame rate. It is recommended to configure the target bitrate higher than the expected bitrate to have margins for additional complexity that needs to be captured.

Average bitrate (ABR)
With average bitrate, the bitrate is automatically adjusted over a longer timescale to meet the specified target and provide the best quality on the video stream based on available storage. Image quality is decreased uniformly. You can still get good image quality when there is activity in the scene. The average bitrate option allows you to define the total storage required to store the video stream for a specified amount of time (retention time) when image quality is adjusted to meet the specified target bitrate. Specify the average bitrate settings in one of the following ways:

- Set the target bitrate and the retention time to calculate the estimated storage need.
- Use the target bitrate calculator to calculate the average bitrate, based on available storage and desired retention time.

You have also the option to turn on maximum bitrate to specify a bitrate limit.

Reduce bandwidth and storage

Important
If you reduce the bandwidth it can result in loss of details in the picture.

1. Go to live view and select H.264.
2. Go to Settings > Stream.
3. Do one or more of the following:
   - Turn on the Zipstream functionality and select the desired level.
   - Turn on dynamic GOP and set a high GOP length value.
   - Increase the compression.
   - Turn on dynamic FPS.

Set up network storage
To store recordings on the network, you need to set up network storage:

1. Go to Settings > System > Storage.
2. Click Setup under Network storage.
3. Enter the IP address of the host server.
4. Enter the name of the shared location on the host server.
5. Move the switch if the share requires a login, and enter username and password.
6. Click Connect.
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Add audio to your recording
Edit the stream profile which is used for the recording:

1. Go to Settings > Stream and click Stream profiles.
2. Select the stream profile and click Audio.
3. Select the checkbox and select Include.
4. Click Save.
5. Click Close.

Record and watch video
To record video you must first set up network storage, see Set up network storage on page 13, or have an SD card installed.

1. Go to the camera's live view.
2. Click on Record once to start recording and one more time to stop recording.

To watch your recording:

1. Click on Storage > Go to recordings.
2. Select your recording in the list and it will play automatically.

Events

Set up rules and alerts
You can create rules to make your device perform an action when certain events occur. A rule consists of conditions and actions. The conditions can be used to trigger the actions. For example, the device can start a recording or send an email when it detects motion, or show an overlay text when it records.

Record video when the camera detects motion
This example explains how to set up the camera to start recording to the SD card five seconds before it detects motion and to stop one minute after.

Make sure the AXIS Video Motion Detection application is running:

1. Go to Settings > Apps > AXIS Video Motion Detection.
2. Start the application if it is not already running.
3. Make sure you have set up the application according to your needs.

Create a rule:

1. Go to Settings > System > Events and add a rule.
2. Type a name for the rule.
3. In the list of conditions, under Application, select AXIS Video Motion Detection (VMD).
4. In the list of actions, under Recordings, select Record video while the rule is active.
5. Select an existing stream profile or create a new one.
6. Set the prebuffer time to 5 seconds.
**AXIS Q35 Series**

**Setup**

7. Set the postbuffer time to 60 seconds.
8. In the list of storage options, select SD card.
9. Click Save.

**Detect tampering with input signal**

This example explains how to trigger an alarm when the input signal has been cut or short-circuited. For more information about the I/O connector, see page 21.

1. Go to Settings > System > I/O Ports and turn on Supervised I/O for one of the ports.

Create a rule:

1. Go to Settings > System > Events and add a rule.
2. Type a name for the rule.
3. In the list of conditions, select Digital input and then select a port.
4. In the list of actions, select Send notification to email and then select a recipient from the list. Go to Recipients to create a new recipient.
5. Type a subject and a message for the email.
6. Click Save.

**Record video when the camera detects impact**

Shock detection allows the camera to detect tampering caused by vibrations or shock. Vibrations due to the environment or to an object can trigger an action depending on the shock sensitivity range, which can be set from 0 to 100. In this scenario, someone is throwing rocks at the camera after hours and you would like to get a video clip of the event.

Turn on shock detection:

1. Go to Settings > System > Detectors.
2. Turn on shock detection, and set a value for the shock sensitivity.

Create a rule:

1. Go to Settings > System > Events and add a rule.
2. Type a name for the rule.
3. In the list of conditions, under Device status, select Shock detected.
4. Click + to add a second condition.
5. In the list of conditions, under Scheduled and recurring, select Scheduled event.
6. In the list of schedules, select After hours.
7. In the list of actions, under Recordings, select Record video while the rule is active.
8. Select a Camera.
9. Set the prebuffer time to 5 seconds.
10. Set the postbuffer time to 60 seconds.
11. Select where to save the recordings.
12. Click Save.
Applications

AXIS Camera Application Platform (ACAP) is an open platform that enables third parties to develop analytics and other applications for Axis products. To find out more about available applications, downloads, trials and licenses, go to axis.com/applications.

To find the user manuals for Axis applications, go to axis.com.

Note
- We recommended running one application at a time.
- Avoid running applications when the built-in motion detection is active.
Troubleshooting

If you can’t find what you’re looking for here, try the troubleshooting section at axis.com/support.

Reset to factory default settings

**Important**
Reset to factory default should be used with caution. A reset to factory default resets all settings, including the IP address, to the factory default values.

To reset the product to the factory default settings:

1. Disconnect power from the product.
2. Press and hold the control button while reconnecting power. See Product overview on page 5.
3. Keep the control button pressed for 15–30 seconds until the status LED indicator flashes amber.
4. Release the control button. The process is complete when the status LED indicator turns green.
5. Use the installation and management software tools to assign an IP address, set the password, and access the video stream.

   The installation and management software tools are available from the support pages on axis.com/support.

It is also possible to reset parameters to factory default through the web interface. Go to Settings > System > Maintenance and click Default.

Check the current firmware

Firmware is the software that determines the functionality of network devices. One of your first actions when troubleshooting a problem should be to check the current firmware version. The latest version may contain a correction that fixes your particular problem.

To check the current firmware:

1. Go to the product’s webpage.
2. Click on the help menu.
3. Click About.

Upgrade the firmware

**Important**
Preconfigured and customized settings are saved when the firmware is upgraded (provided that the features are available in the new firmware) although this is not guaranteed by Axis Communications AB.

**Important**
Make sure the product remains connected to the power source throughout the upgrade process.

**Note**
When you upgrade the product with the latest firmware in the active track, the product receives the latest functionality available. Always read the upgrade instructions and release notes available with each new release before upgrading the firmware. To find the latest firmware and the release notes, go to axis.com/support/firmware.
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Troubleshooting

1. Download the firmware file to your computer, available free of charge at axis.com/support/firmware.

2. Log in to the product as an administrator.

3. Go to Settings > System > Maintenance. Follow the instructions on the page. When the upgrade has finished, the product restarts automatically.

AXIS Device Manager can be used for multiple upgrades. Find out more at axis.com/products/axis-device-manager.

Technical issues, clues and solutions

If you can’t find what you’re looking for here, try the troubleshooting section at axis.com/support.

Problems upgrading the firmware

<table>
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<tr>
<th>Scenario</th>
<th>Description</th>
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</thead>
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<tr>
<td>Firmware upgrade failure</td>
<td>If the firmware upgrade fails, the device reloads the previous firmware. The most common reason is that the wrong firmware file has been uploaded. Check that the name of the firmware file corresponds to your device and try again.</td>
</tr>
</tbody>
</table>

Problems setting the IP address

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>The device is located on a different subnet</td>
<td>If the IP address intended for the device and the IP address of the computer used to access the device are located on different subnets, you cannot set the IP address. Contact your network administrator to obtain an IP address.</td>
</tr>
</tbody>
</table>
| The IP address is being used by another device | Disconnect the Axis device from the network. Run the ping command (in a Command/DOS window, type ping and the IP address of the device):

  - If you receive: Reply from 〈IP address>: bytes=32; time=10... this means that the IP address may already be in use by another device on the network. Obtain a new IP address from the network administrator and reinstall the device.
  - If you receive: Request timed out, this means that the IP address is available for use with the Axis device. Check all cabling and reinstall the device. |
| Possible IP address conflict with another device on the same subnet | The static IP address in the Axis device is used before the DHCP server sets a dynamic address. This means that if the same default static IP address is also used by another device, there may be problems accessing the device. |

The device cannot be accessed from a browser

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cannot log in</td>
<td>When HTTPS is enabled, ensure that the correct protocol (HTTP or HTTPS) is used when attempting to log in. You may need to manually type http or https in the browser’s address field. If the password for the user root is lost, the device must be reset to the factory default settings. See Reset to factory default settings on page 17.</td>
</tr>
<tr>
<td>The IP address has been changed by DHCP</td>
<td>IP addresses obtained from a DHCP server are dynamic and may change. If the IP address has been changed, use AXIS IP Utility or AXIS Device Manager to locate the device on the network. Identify the device using its model or serial number, or by the DNS name (if the name has been configured). If required, a static IP address can be assigned manually. For instructions, go to axis.com/support.</td>
</tr>
<tr>
<td>Certificate error when using IEEE 802.1X</td>
<td>For authentication to work properly, the date and time settings in the Axis device must be synchronized with an NTP server. Go to Settings &gt; System &gt; Date and time.</td>
</tr>
</tbody>
</table>

The device is accessible locally but not externally

To access the device externally, we recommend using one of the following applications for Windows®:

- AXIS Companion: free of charge, ideal for small systems with basic surveillance needs.
- AXIS Camera Station: 30-day trial version free of charge, ideal for small to mid-size systems.

For instructions and download, go to axis.com/products/axis-companion.
Troubleshooting

Problems with streaming

<table>
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<tr>
<th>Problem</th>
<th>Solution</th>
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<tr>
<td>Multicast H.264 only accessible by local clients</td>
<td>Check if your router supports multicasting, or if the router settings between the client and the device need to be configured. The TTL (Time To Live) value may need to be increased.</td>
</tr>
<tr>
<td>No multicast H.264 displayed in the client</td>
<td>Check with your network administrator that the multicast addresses used by the Axis device are valid for your network. Check with your network administrator to see if there is a firewall preventing viewing.</td>
</tr>
<tr>
<td>Poor rendering of H.264 images</td>
<td>Ensure that your graphics card is using the latest driver. The latest drivers can usually be downloaded from the manufacturer's website.</td>
</tr>
<tr>
<td>Color saturation is different in H.264 and Motion JPEG</td>
<td>Modify the settings for your graphics adapter. Go to the adapter's documentation for more information.</td>
</tr>
<tr>
<td>Lower frame rate than expected</td>
<td>• See Performance considerations on page 19. • Reduce the number of applications running on the client computer. • Limit the number of simultaneous viewers. • Check with the network administrator that there is enough bandwidth available. • Lower the image resolution. • Log in to the device's webpage and set a capture mode that prioritizes frame rate. Changing the capture mode to prioritize frame rate might lower the maximum resolution depending on the device used and capture modes available. • The maximum frames per second is dependent on the utility frequency (60/50 Hz) of the Axis device.</td>
</tr>
</tbody>
</table>

Performance considerations

When setting up your system, it is important to consider how various settings and situations affect the performance. Some factors affect the amount of bandwidth (the bitrate) required, others can affect the frame rate, and some affect both. If the load on the CPU reaches its maximum, this also affects the frame rate.

The following factors are the most important to consider:

- High image resolution or lower compression levels result in images containing more data which in turn affects the bandwidth.
- Rotating the image in the GUI will increase the product’s CPU load.
- Access by large numbers of Motion JPEG or unicast H.264 clients affects the bandwidth.
- Simultaneous viewing of different streams (resolution, compression) by different clients affects both frame rate and bandwidth.
  Use identical streams wherever possible to maintain a high frame rate. Stream profiles can be used to ensure that streams are identical.
- Accessing Motion JPEG and H.264 video streams simultaneously affects both frame rate and bandwidth.
- Heavy usage of event settings affects the product’s CPU load which in turn affects the frame rate.
- Using HTTPS may reduce frame rate, in particular if streaming Motion JPEG.
- Heavy network utilization due to poor infrastructure affects the bandwidth.
- Viewing on poorly performing client computers lowers perceived performance and affects frame rate.
- Running multiple AXIS Camera Application Platform (ACAP) applications simultaneously may affect the frame rate and the general performance.
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Specifications

Specifications

To find the latest version of the product’s datasheet, go to the product page at axis.com and locate Support & Documentation.

LED Indicators

Note

• The Status LED can be configured to flash while an event is active.

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<th>Indication</th>
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<tr>
<td>Unlit</td>
<td>Connection and normal operation.</td>
</tr>
<tr>
<td>Green</td>
<td>Steady green for 10 seconds for normal operation after startup completed.</td>
</tr>
<tr>
<td>Amber</td>
<td>Steady during startup. Flashes during firmware upgrade or reset to factory default.</td>
</tr>
<tr>
<td>Amber/Red</td>
<td>Flashes amber/red if network connection is unavailable or lost.</td>
</tr>
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Status LED behavior and buzzer signal for leveling assistant

For information on the function button used for leveling the image, see page 20.

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<th>Buzzer</th>
<th>Camera position</th>
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<td>Level</td>
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<tr>
<td></td>
<td>beep</td>
<td></td>
</tr>
<tr>
<td>Flashing green</td>
<td>Fast beeps</td>
<td>Almost level</td>
</tr>
<tr>
<td>Flashing orange</td>
<td>Medium beeps</td>
<td>Not level</td>
</tr>
<tr>
<td>Flashing red</td>
<td>Slow beeps</td>
<td>Far from level</td>
</tr>
</tbody>
</table>

SD card slot

Notice

• Risk of damage to SD card. Do not use sharp tools, metal objects, or excessive force when inserting or removing the SD card. Use your fingers to insert and remove the card.

• Risk of data loss and corrupted recordings. Do not remove the SD card while the product is running. Unmount the SD card from the product’s webpage before removal.

This product supports microSD/microSDHC/microSDXC cards.

For SD card recommendations, see axis.com.

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Buttons

Control button

The control button is used for:

• Resetting the product to factory default settings. See Reset to factory default settings on page 17.
AXIS Q35 Series
Specifications

• Connecting to an AXIS Video Hosting System service. To connect, press and hold the button for about 3 seconds until the status LED flashes green.

Function Button
The function button has multiple functions:

• As leveling Assistant – This function helps to ensure the image is level. Press the button for about 2 seconds to start the leveling assistant and press again to stop. The status LED (see) and buzzer signal assist leveling of the image. The image is level when the buzzer beeps continuously.

• To view the Status LED – Press the button once to light up the Status LEDs. Press again to turn them off. The LEDs will turn off automatically after 10 seconds.

Connectors

Network connector
RJ45 Ethernet connector with Power over Ethernet (PoE).

Audio connector

• Audio in – 3.5 mm input for a mono microphone, or a line-in mono signal (left channel is used from a stereo signal).

• Audio out – 3.5 mm output for audio (line level) that can be connected to a public address (PA) system or an active speaker with a built-in amplifier. A stereo connector must be used for audio out.

<table>
<thead>
<tr>
<th>1 Tip</th>
<th>2 Ring</th>
<th>3 Sleeve</th>
</tr>
</thead>
<tbody>
<tr>
<td>Audio Input</td>
<td>Microphone/Line in</td>
<td>Microphone bias voltage</td>
</tr>
<tr>
<td>Audio Output</td>
<td>Line out, mono</td>
<td>Line out, mono</td>
</tr>
</tbody>
</table>

For audio in, the left channel is used from a stereo signal.

I/O connector

Use the I/O connector with external devices in combination with, for example, motion detection, event triggering, and alarm notifications. In addition to the 0 V DC reference point and power (DC output), the I/O connector provides the interface to:

Digital input – For connecting devices that can toggle between an open and closed circuit, for example PIR sensors, door/window contacts, and glass break detectors.

Supervised input – Enables possibility to detect tampering on a digital input.

Digital output – For connecting external devices such as relays and LEDs. Connected devices can be activated by the VAPIX® Application Programming Interface or from the product’s webpage.

4-pin terminal block
## AXIS Q35 Series

### Specifications

<table>
<thead>
<tr>
<th>Function</th>
<th>Pin</th>
<th>Notes</th>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>DC ground</td>
<td>1</td>
<td></td>
<td>0 V DC</td>
</tr>
<tr>
<td>DC output</td>
<td>2</td>
<td>Can be used to power auxiliary equipment.</td>
<td>12 V DC Max load = 50 mA</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Note: This pin can only be used as power out.</td>
<td></td>
</tr>
<tr>
<td>Configurable (Input or Output)</td>
<td>3–4</td>
<td>Digital input or Supervised input – Connect to pin 1 to activate, or leave floating (unconnected) to deactivate. To use supervised input, install end-of-line resistors. See connection diagram for information about how to connect the resistors.</td>
<td>0 to max 30 V DC</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Digital output – Internally connected to pin 1 (DC ground) when active, and floating (unconnected) when inactive. If used with an inductive load, e.g., a relay, connect a diode in parallel with the load, to protect against voltage transients.</td>
<td>0 to max 30 V DC, open drain, 100 mA</td>
</tr>
</tbody>
</table>

### Example

![Connection Diagram](image)

1. DC ground
2. DC output 12 V, max 50 mA
3. I/O configured as supervised input
4. I/O configured as output

### Power connector

2-pin terminal block for DC power input. Use a Safety Extra Low Voltage (SELV) compliant limited power source (LPS) with either a rated output power limited to ≤100 W or a rated output current limited to ≤5 A.