

Table of Contents

Get started	3
Choose lens	3
Find the device on the network	3
Access the device	3
Webpage overview	5
Additional settings	7
Adjust the image	7
View and record video	2
Set up rules and alerts	3
	8
	9
	9
	9
	9
	20
	20
Irouhleshooting	23
	23
Firmware options	23
Check the current firmware	23
Upgrade the firmware	23
	24
Performance considerations	25
Contact support	26
	27
Product overview	27
SD card slot	28
	20 28
Connectors 2	8

Get started

Get started

Choose lens

There is more than one lens option for your camera. Which lens to choose depends on the surveillance requirements. The lenses have different capabilities when it comes to light sensitivity and field of view. See the product's datasheet for lens alternatives.

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, go to How to assign an IP address and access your device.

Browser support

You can use the device with the following browsers:

	Chrome TM	Firefox [®]	Edge [®]	Safari [®]
Windows [®]	recommended	х	Х	
macOS [®]	recommended			х
Other operating systems	х	х		

If you need more information about recommended browsers, go to axis.com/browser-support.

Access the device

- 1. Open a browser and enter the IP address or host name of the Axis device.
 - 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 new password for the root account on page 3.
- 3. The live view page opens in your browser.

Verify that no one has tampered with the firmware

To make sure that the device has its original Axis firmware, or to take full control of the device after a security attack:

- 1. Reset to factory default settings. See Reset to factory default settings on page 23.
 - After the reset, secure boot guarantees the state of the device.
- 2. Configure and install the device.

Set a new 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.

Get started



To watch this video, go to the web version of this document.

www.axis.com/products/online-manual/66917

Support tip: Password security confirmation check

- 1. Type a password. Follow the instructions about secure passwords. See Secure passwords on page 4.
- 2. Retype the password to confirm the spelling.
- 3. Click Create login. The password has now been configured.

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.

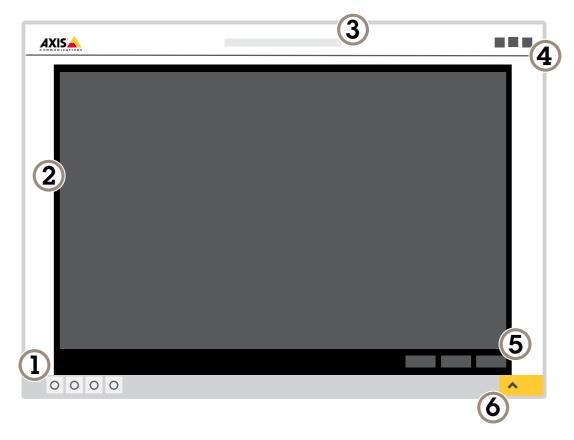
The device password is the primary protection for your data and services. Axis devices do not impose a password policy as they may be used in various types of installations.

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.

Get started

Webpage overview



- Live view control bar
- Live view
- Product name
- User information, color themes, and help
- 5 Video control bar6 Settings toggle

Get started



7 Settings tabs

Additional settings

Additional settings

Adjust the image

This section includes instructions about how to configure your device. If you want to learn more about how certain features function, go to Learn more on page 19.

Level the camera

To adjust the view in relation to a reference area or object, use the leveling guide in combination with a mechanical adjustment of the camera.





2. Adjust the camera mechanically until the position of the reference area or object, is aligned with the leveling guide.

Select scene profile

A scene profile is a set of predefined image appearance settings including color level, brightness, sharpness, contrast and local contrast. Scene profiles are preconfigured in the product for quick setup to a specific scenario, for example Forensic which is

optimized for surveillance conditions. For a description of each available setting, go to the help menu and click Help. You can select a scene profile during the initial setup of the camera. You can also select or change scene profile later.



- 1. Go to Settings > System.
- 2. Go to Plain config > Image source and select a scene profile.
- 3. Click Save.

Reduce image processing time with low latency mode

You can optimize the image processing time of your live stream by turning on low latency mode. The latency in your live stream is reduced to a minimum.

- 1. Go to Settings > System.
- 2. Go to Plain config > Image source.
- 3. Go to Low latency mode and select On.
- 4. Click Save.

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.

Additional settings

• To lock the current exposure settings, select Hold current.

Optimize IR illumination

In most cases, the exposure of the image is automatically adjusted to obtain optimal image quality. If the camera is placed close to a wall or a corner, it can sometimes result in saturation of parts of the image. When this happens, the LED's closest to the wall or corner are automatically dimmed to avoid saturating the image.

Depending on the installation environment and the conditions around the camera, for example external light sources in the scene, you can sometimes improve the IR illumination if you manually adjust the intensity of the LED's.

- 1. Go to Settings > Image > Day and night, and turn on Allow illumination.
- 2. Turn on Live view control.
- 3. Minimize Settings.
- 4. In the live view control bar, click the Illumination button, turn on IR light and select Manual.
- 5. Adjust the intensity.

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.
- 2. To determine at what light level you want the camera to shift to night mode, move the Threshold slider toward Bright or Dark.

Note

If you set the shift to night mode to occur when it's brighter, the image remains sharper as there will be less low-light noise. If you set the shift to occur when it's darker, the image colors are maintained for longer, but there will be more image blur due to low-light noise.

Reduce noise in low-light conditions

To reduce noise in low-light conditions, you can adjust one or more of the following settings:

- Adjust the trade-off between noise and motion blur. Go to Settings > Image > Exposure and move the Blur-noise trade-off slider toward Low noise.
- 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.

Note

When you reduce the max gain, the image can become darker.

- Set the max gain to a lower value.
- Open the aperture.

Additional settings

Reduce motion blur in low-light conditions

To reduce motion blur in low-light conditions, adjust one or more of the following settings in Settings > Image > Exposure:

• Move the Blur-noise trade-off slider toward Low motion blur.

Note

When you increase the gain, image noise also increases.

• Set Max shutter to a shorter time, and Max gain to a higher value.

If you still have problems with motion blur:

- Increase the light level in the scene.
- Mount the camera so that objects move toward it or away from it rather than sideways.

Note

If you use a lens with a larger aperture, the depth of field gets shallower.

• Change to a lens with a larger aperture.

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.



Image without WDR.



Image with WDR.

Note

- WDR can cause artifacts in the image.
- WDR may not be available for all capture modes.

Additional settings

- 1. Go to Settings > Image > Wide dynamic range.
- 2. Turn on WDR.
- 3. Use the Local contrast slider to adjust the amount of WDR.
- 4. Use the Tone mapping slider to adjust the amount of WDR.
- 5. If you still have problems, go to Exposure and adjust the Exposure zone to cover the area of interest.

Find out more about WDR and how to use it at axis.com/web-articles/wdr.

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.

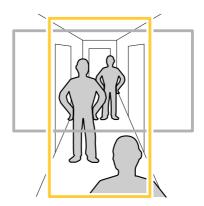
Note

When EIS is turned on the image is cropped slightly, lowering the maximum resolution.

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

Monitor long and narrow areas

Use corridor format to better utilize the full field of view in a long and narrow area, for example a staircase, hallway, road, or tunnel.



- 1. Depending on your device, turn the camera or the 3-axis lens in the camera 90° or 270°.
- 2. If the device doesn't have automatic rotation of the view, log in to the webpage and go to Settings > System > Orientation.
- 3. Click
- 4. Rotate the view 90° or 270°.

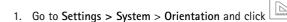
Find out more at axis.com/axis-corridor-format.

Improve license plate recognition

To better recognize the license plate of a car passing by the camera, you can apply and adjust a number of things.

One option is to use the pixel counter in your camera to set the optimal pixel resolution:

Additional settings



2. Adjust the size and placement of the rectangle in the camera's live view around the area of interest, for example where the license plates of passing cars are expected to appear. You can then see the number of pixels represented by the sides of the rectangle.

Note

You can use an object of a known size in the view as a reference to decide how much resolution is needed for recognition.

In addition, you can try to adjust the following to optimize license plate recognition:

- Shutter speed
- Gain
- Zoom

Hide parts of the image with privacy masks

You can create one or several privacy masks to hide parts of the image.



To watch this video, go to the web version of this document.

www.axis.com/products/online-manual/66917

How to create a privacy mask

- 1. Go to Settings > Privacy mask.
- 2. Click New.
- 3. Adjust the size, color, and name of the privacy mask according to your needs.



To watch this video, go to the web version of this document.

www.axis.com/products/online-manual/66917

How to change the appearance of the mask

Show an image overlay

To add an image as an overlay in the video stream:

- 1. Go to Settings > Overlay.
- 2. Click Image list.

Additional settings

- 3. Upload an image and click Done.
- 4. Click Create overlay.
- 5. Select Image and click Create.
- 6. Select Image and click Ok.
- 7. Select Import and upload an image.
- 8. Select the image from the drop-down list.
- 9. To position the image overlay, choose **Custom** or one of the presets.
- 10. Click Create.

View and record video

This section includes instructions about how to configure your device. To learn more about how streaming and storage works, go to *Streaming and storage on page 20*.

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:

Note

The zipstream settings are used for both H.264 and H.265.

- Turn on dynamic GOP and set a high GOP length value.
- Increase the compression.
- Turn on dynamic FPS.

Note

Web browsers do not support H.265 decoding. Use a video management system or application supporting H.265 decoding.

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.

Additional settings

Record and watch video

To record video you must first set up network storage, see Set up network storage on page 12, or have an SD card installed.

Record video

- 1. Go to the live view.
- 2. To start a recording, click Record. Click again to stop the recording.

Watch video

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

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 while the device is recording.

Trigger an action

- 1. Go to Settings > System > Events to set up a rule. The rule defines when the device will perform certain actions. Rules can be setup as scheduled, recurring, or for example, triggered by motion detection.
- 2. Select the Condition that must be met to trigger the action. If you specify more than one condition for the rule, all of the conditions must be met to trigger the action.
- 3. Select which **Action** the device should perform when the conditions are met.

Note

If you make changes to an active rule, you have to restart the rule for the changes to take effect.

Note

If you change the definition of a stream profile that is used in a rule, you have to to restart all the rules that use that stream profile.

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.



To watch this video, go to the web version of this document.

www.axis.com/products/online-manual/66917

How to record a video stream when the camera detects motion

Make sure that AXIS Video Motion Detection is running:

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

Additional settings

- 2. Start the application if it is not already running.
- 3. Make sure you have set up the application according to your needs. If you need help, see the user manual for AXIS Video Motion Detection 4.

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

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.



To watch this video, go to the web version of this document.

www.axis.com/products/online-manual/66917

How to show text overlay when the camera detects motion

Make sure that AXIS Video Motion Detection 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.

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:

Additional settings

- 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.

Direct the camera to a preset position when the camera detects motion

This example explains how to set up the camera to go to a preset position when it detects motion in the image.

Make sure that AXIS Video Motion Detection 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. If you need help, see the user manual for AXIS Video Motion Detection 4.

Add a preset position:

Go to Settings > PTZ and set where you want the camera to be directed by creating a preset position.

Create a rule:

- 1. Go to Settings > System > Events > Rules and add a rule.
- 2. Type a name for the rule.
- 3. In the list of conditions, select a video motion detection condition under **Application**.
- 4. From the list of actions, select Go to preset position.
- 5. Select the preset position you want the camera to go to.
- 6. Click Save.



To watch this video, go to the web version of this document.

www.axis.com/products/online-manual/66917

Additional settings

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.

Provide visual indication of an ongoing event

You have the option to connect the AXIS I/O Indication LED to your network camera. This LED can be configured to turn on whenever certain events occur in the camera. For example, to let people know that video recording is in progress.

Required hardware

- AXIS I/O Indication LED
- An Axis network video camera

Note

For instructions on how to connect the AXIS I/O Indication LED, see the installation guide provided with the product.

The following example shows how to configure a rule that turns on the AXIS I/O Indication LED to indicate that camera is recording.

- 1. Go to Settings > System > I/O Ports.
- 2. Go to Settings > System > Events.
- 3. Create a new rule.
- 4. Select the **Condition** that must be met to trigger the camera to start recording. It can, for example, be a time schedule or motion detection.
- 5. In the list of actions, select **Record video**. Select a stream profile or create a new. Also set the **Prebuffer** and **Postbuffer** as required.

Additional settings

- 6. Save the rule.
- 7. Create a second rule and select the same **Condition** as in the first rule.
- 8. In the list of actions, select Toggle I/O while the rule is active, and then select the port the AXIS I/O Indication LED is connected to. Set the state to Active.
- 9. Save the rule.

Other scenarios where AXIS I/O Indication LED can be used are for example:

- Configure the LED to turn on when the camera starts, to indicate the presence of the camera. Select System ready as a condition.
- Configure the LED to turn on when live stream is active to indicate that a person or a program is accessing a stream from the camera. Select Live stream accessed as a condition.

Send an email automatically if someone spray paints the lens



To watch this video, go to the web version of this document.

www.axis.com/products/online-manual/66917

How to send an email notification if someone spray paint the lens

- 1. Go to Settings > System > Detectors.
- 2. Turn on Trigger on dark images. This will trigger an alarm if the lens is sprayed, covered, or rendered severely out of focus.
- 3. Set a duration for Trigger after. The value indicates the time that must pass before an email is sent.

Create a rule:

- 1. Go to Settings > System > Events > Rules and add a rule.
- 2. Type a name for the rule.
- 3. In the list of conditions, select Tampering.
- 4. In the list of actions, select Send notification to email.
- 5. Select a recipient from the list or go to Recipients to create a new recipient.

To create a new recipient, click + . To copy an existing recipient, click .

- 6. Type a subject and a message for the email.
- 7. Click Save.

Cleaning recommendations

Cleaning recommendations

You can clean this device with detergent and high-pressure water. Maximum water temperature is 80 °C (176 °F).

- 1. Apply detergent with a cloth.
- 2. Rinse the device using a water hose or high-pressure water.
- 3. Wipe dry with a clean cloth.

Learn more

Learn more

View area

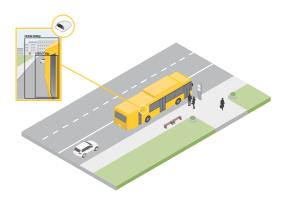
A view area is a cropped part of the full view. You can stream and store view areas instead of the full view to minimize bandwidth and storage needs. If you enable PTZ for a view area, you can pan, tilt and zoom within it. By using view areas you can remove parts of the full view. for example, the sky.

When you set up a view area, we recommend you to set the video stream resolution to the same size as or smaller than the view area size. If you set the video stream resolution larger than the view area size it implies digitally scaled up video after sensor capture, which requires more bandwidth without adding image information.

Capture modes

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.



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.

Privacy masks

A privacy mask is a user-defined area that prevents users from viewing a part of the monitored area. In the video stream, privacy masks appear as blocks of solid color.

A privacy mask is a user-defined area that covers a part of the monitored area. In the video stream, privacy masks appear either as blocks of solid color or with a mosaic pattern.

You'll see the privacy mask on all snapshots, recorded video, and live streams.

You can use the VAPIX® application programming interface (API) to turn off the privacy masks.

Important

If you use multiple privacy masks it may affect the product's performance.

Learn more

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.

The video streaming indicator is another type of overlay. It shows you that the live view video stream is live.

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.

H.265 or MPEG-H Part 2/HEVC

Note

H.265 is licensed technology. The Axis product includes one H.265 viewing client license. To install additional unlicensed copies of the client is prohibited. To purchase additional licenses, contact your Axis reseller.

How do Image, Stream, and Stream profile settings relate to each other?

The **Image** tab contains camera settings that affect all video streams from the product. If you change something in this tab, it immediately affects all video streams and recordings.

The **Stream** tab contains settings for video streams. You get these settings if you request a video stream from the product and don't specify for example resolution, or frame rate. When you change the settings in the **Stream** tab, it doesn't affect ongoing streams, but it will take effect when you start a new stream.

The **Stream profiles** settings override the settings from the **Stream** tab. If you request a stream with a specific stream profile, the stream contains the settings of that profile. If you request a stream without specifying a stream profile, or request a stream profile that doesn't exist in the product, the stream contains the settings from the **Stream** tab.

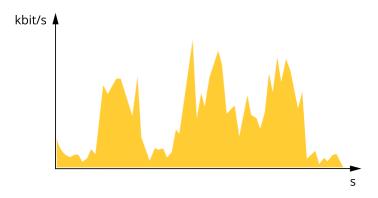
Bitrate control

With bitrate control, you can manage the bandwidth consumption of your video stream.

Variable bitrate (VBR)

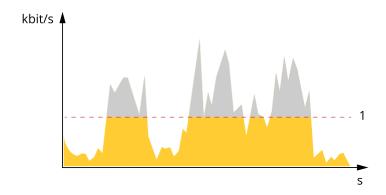
With variable bitrate, the bandwidth consumption varies based on the level of activity in the scene. The more activity in the scene, the more bandwidth you need. You are guaranteed constant image quality but it requires storage margins.

Learn more



Maximum bitrate (MBR)

With maximum bitrate, you can set a target bitrate to handle bitrate limitations in your system. You may see a decline in image quality or frame rate when the instantaneous bitrate is kept below the specified target bitrate. You can choose to either prioritize image quality or frame rate. We recommend that you configure the target bitrate to a higher value than the expected bitrate. This gives you a margin for additional complexity that needs to be captured.



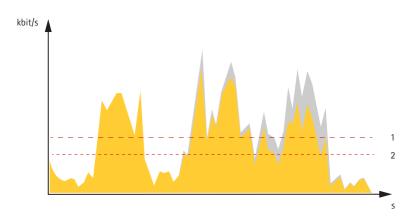
1 Target bitrate

Average bitrate (ABR)

With average bitrate, the bitrate is automatically adjusted over a longer timescale. This is so you can meet the specified target and provide the best video quality based on your available storage. Bitrate is higher in scenes with a lot of activity, compared to static scenes. You are more likely to get better image quality when needed when using the average bitrate option. You can 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:

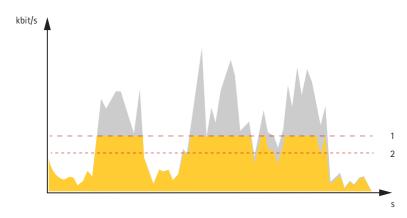
- To calculate the estimated storage need, set the target bitrate and the retention time.
- To calculate the average bitrate, based on available storage and required retention time, use the target bitrate calculator.

Learn more



- Target bitrate Actual average bitrate

You can also turn on maximum bitrate and specify a target bitrate within the average bitrate option.



- Target bitrate
- Actual average bitrate

Troubleshooting

Troubleshooting

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 27.
- 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. The product has been reset to the factory default settings. If no DHCP server is available on the network, the default IP address is 192.168.0.90.
- 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

Firmware options

Axis offers product firmware management according to either the active track or the long-term support (LTS) tracks. Being on the active track means continuously getting access to all the latest product features, while the LTS tracks provide a fixed platform with periodic releases focused mainly on bug fixes and security updates.

Using firmware from the active track is recommended if you want to access the newest features, or if you use Axis end-to-end system offerings. The LTS tracks are recommended if you use third-party integrations, which are not continuously validated against the latest active track. With LTS, the products can maintain cybersecurity without introducing any significant functional changes or affecting any existing integrations. For more detailed information about Axis product firmware strategy, go to axis.com/support/firmware.

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.

Troubleshooting

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.

- 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.



To watch this video, go to the web version of this document.

www.axis.com/products/online-manual/66917

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

Firmware upgrade failure	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.	
Problems after firmware upgrade	If you experience problems after a firmware upgrade, roll back to the previously installed versi from the Maintenance page.	

Problems setting the IP address		
The device is located on a different subnet	on a If the IP address intended for the device and the IP address of the computer used to access th device are located on different subnets, you cannot set the IP address. Contact your network administrator to obtain an IP address.	
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.</ip>	

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.

for use with the Axis device. Check all cabling and reinstall the device.

If you receive: Request timed out, this means that the IP address is available

Troubleshooting

The device cannot be accessed from a browser

Cannot log in	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 23.
The IP address has been changed by DHCP	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.
Certificate error when using IEEE 802.1X	For authentication to work properly, the date and time settings in the Axis device must be synchronized with an NTP server. Go to Settings > System > Date and time.

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/vms.

Problems with streaming		
Multicast H.264 only accessible by local clients	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.	
No multicast H.264 displayed in the client	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.	
Poor rendering of H.264 images	Ensure that your graphics card is using the latest driver. The latest drivers can usually be downloaded from the manufacturer's website.	
Color saturation is different in H.264 and Motion JPEG	Modify the settings for your graphics adapter. Go to the adapter's documentation for more information.	
Lower frame rate than expected	 See Performance considerations on page 25. 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. 	
Can't select H.265 encoding in live view	Web browsers do not support H.265 decoding. Use a video management system or application supporting H.265 decoding.	

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:

Troubleshooting

- 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.

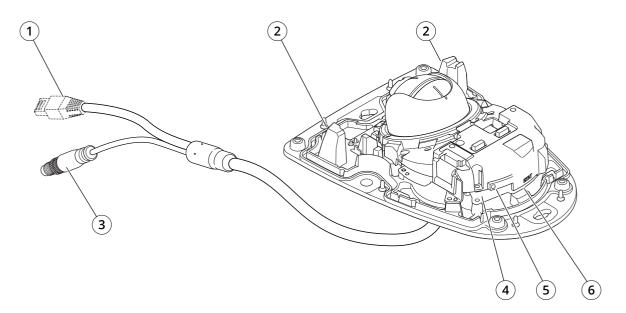
Contact support

Contact support at axis.com/support.

Specifications

Specifications

Product overview



- 1 Network connector: M12 or RJ45
- 2 IR illumination
- 3 DC connector
- 4 SD card slot
- 5 Control button
- 6 Status LED

Specifications

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.

microSD, microSDHC, and microSDXC Logos are trademarks of SD-3C LLC. microSD, microSDHC, microSDXC are trademarks or registered trademarks of SD-3C, LLC in the United States, other countries or both.

Buttons

Control button

The control button is used for:

- Resetting the product to factory default settings. See Reset to factory default settings on page 23.
- 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.

Connectors

Network connector

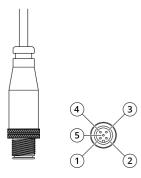
The Axis product is available in two variants with different network connectors:

RJ45 Ethernet connector with Power over Ethernet (PoE).

D-coded M12 connector with Power over Ethernet (PoE).

Power connector

DC power input:



5-pin DC connector

Pin	Function
1, 2	+24 V

Specifications

3, 4	GND
5	N.C.

The 5-pin DC connector powers up the heater.

User Manual AXIS P3925-LRE Network Camera © Axis Communications AB, 2021 Ver. M2.2

Date: March 2021

Part No. T10158511