

AXIS FA54 Main Unit

User Manual

AXIS FA54 Main Unit

Table of Contents

Solution overview	3
Product overview	4
Connect sensor units	4
Find the device on the network	6
Access the device	6
Secure passwords	6
Additional settings	7
Webpage overview	7
Monitor long and narrow areas	8
View live video stream on a monitor	9
Maximize details in an image	9
Reduce bandwidth and storage	10
Bitrate control	10
Handle scenes with strong backlight	12
Applications	13
Troubleshooting	14
Reset to factory default settings	14
Check the current firmware	14
Upgrade the firmware	14
Technical issues, clues and solutions	15
Performance considerations	16
Specifications	17
LED Indicators	17
SD card slot	17
Buttons	17
Connectors	18

AXIS FA54 Main Unit

Solution overview

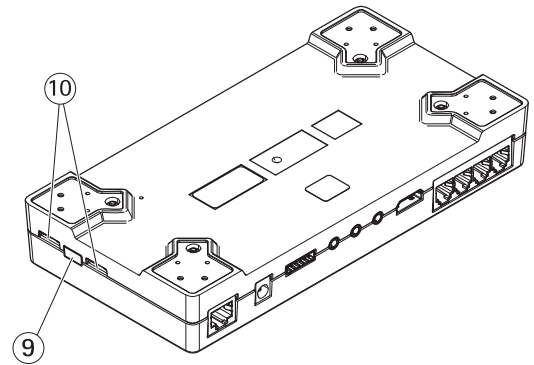
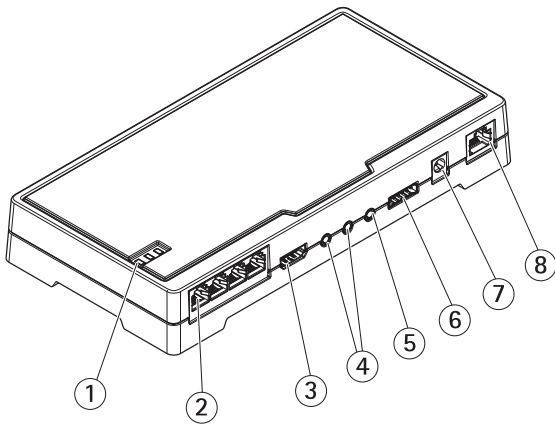
Solution overview



AXIS FA54 Main Unit

Product overview

Product overview



- 1 Status LED
- 2 RJ12 connector (4x)
- 3 HDMI
- 4 Audio in (2x)
- 5 Audio out
- 6 I/O connector
- 7 Power connector
- 8 Network connector (DC input)
- 9 Control button
- 10 microSD card slot

Connect sensor units

When you connect a sensor unit to a main unit, we recommend that you make the connection before you power up the main unit. If you disconnect a sensor unit and connect a different one, it may be necessary to restart the main unit.

Shorten the sensor unit cable

Note

- The sensor unit cable cannot be extended or split.
- When routing the sensor unit cable, the minimum bending radius is 40 mm.

The sensor unit is delivered with a cable. To shorten the cable follow these steps:

1. Cut the cable to the desired length. Measure from the sensor unit.
2. Strip the plastic outer coating from the end of the cable.
3. Peel back the shield.
4. Flatten the colored wires in the order described below.

1	Brown
2	White/brown
3	Not used
4	Not used

AXIS FA54 Main Unit

Product overview

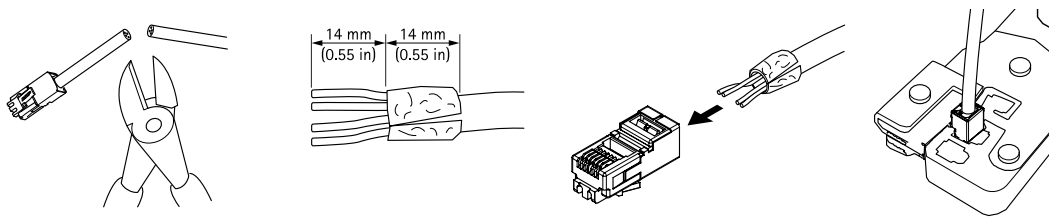
5	White/blue
6	Blue

5. Insert the wires all the way into a shielded 6P6C RJ12 connector.

NOTICE

Make sure that the wires stay in the correct order and that the cable shield makes good contact with the connector shield.

6. Use a crimping tool to fasten the connector to the cable.



AXIS FA54 Main Unit

Find the device on the network

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 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 new password for the root account* on page 6.
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 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.

1. Type a password. Follow the instructions about secure passwords. See *Secure passwords* on page 6.
2. Retype the password to confirm the spelling.
3. Click **Create login**. The password has now been configured.

AXIS FA54 Main Unit

Additional settings

Additional settings

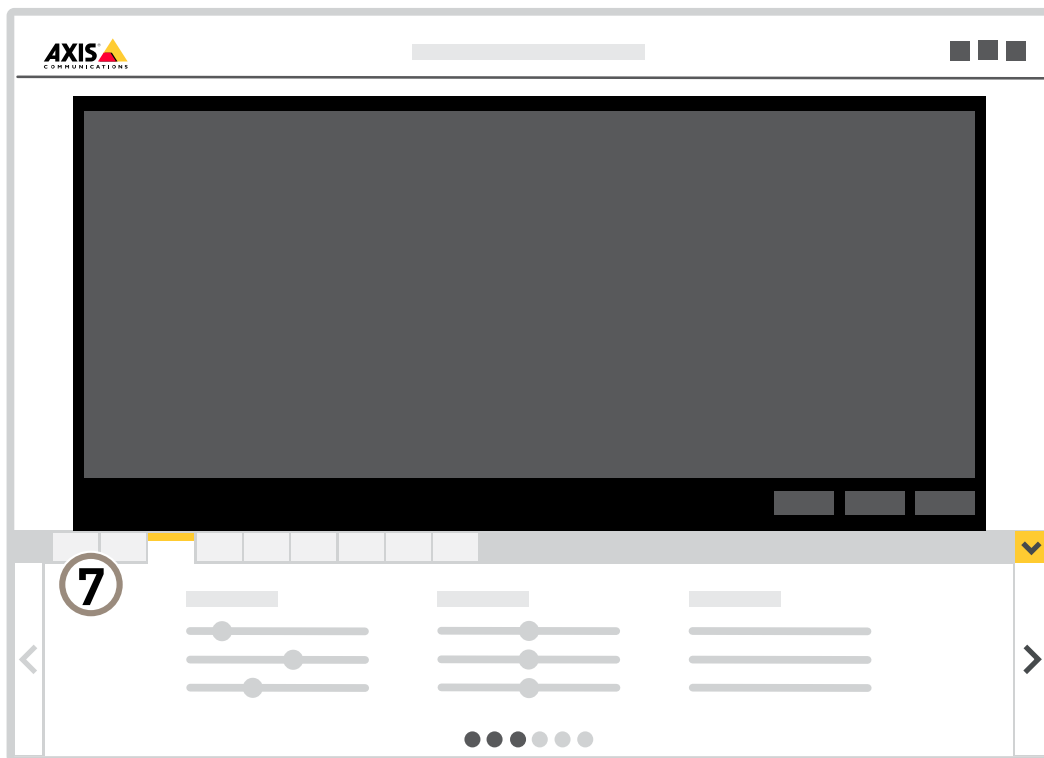
Webpage overview



- 1 Live view control bar
- 2 Live view
- 3 Product name
- 4 User information, color themes, and help
- 5 Video control bar
- 6 Settings toggle

AXIS FA54 Main Unit

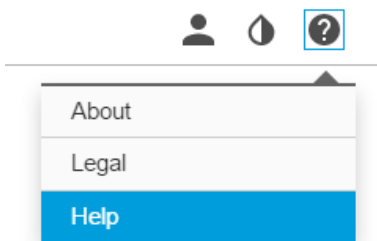
Additional settings



7 Settings tabs

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.

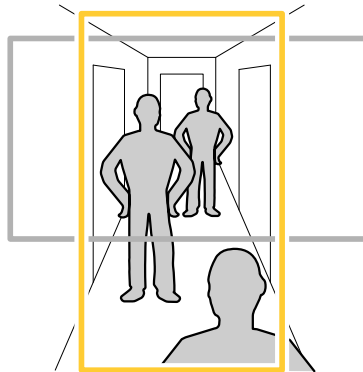



Monitor long and narrow areas

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.

AXIS FA54 Main Unit

Additional settings



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 rotate the view automatically, 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.

View live video stream on a monitor

The camera can transmit a live video stream to an HDMI monitor without the need for a network connection. The monitor can be used for surveillance purposes, or for public viewing, e.g. in a store.

1. Connect an external monitor using the HDMI connector.
2. Open the HDMI settings, under **Settings > System > HDMI**.
3. Select what to view on the HDMI output. To use **Single source** – select the required camera.

NOTICE

- The options available to show over HDMI will vary depending on the connected sensor units (optical, thermal or a combination of these).
- Please restart the main unit after changing the combination of connected sensors.

Note

The overlay feature is not supported for the quad stream, only for the individual video streams.

Note

Image and text overlay will not be displayed on video stream over HDMI.

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.

Maximize details in an image

Important

If you maximize details in an image, the bitrate will probably increase and you might get a reduced frame rate.

- Make sure to select the capture mode that has the highest resolution.

AXIS FA54 Main Unit

Additional settings

- Set the compression as low as possible.
- Select MJPEG streaming.
- Turn off Zipstream functionality.

Reduce bandwidth and storage

Important

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

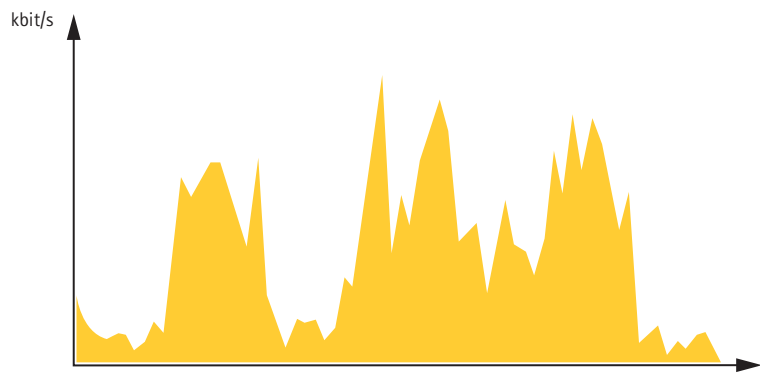
1. Go to live view and select H.264.
2. Go to Settings > Stream.
3. Do one or more of the following:
 - Turn on the Zipstream functionality and select the desired level.
 - Turn on dynamic GOP and set a high GOP length value.
 - Increase the compression.
 - Turn on dynamic FPS.

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.

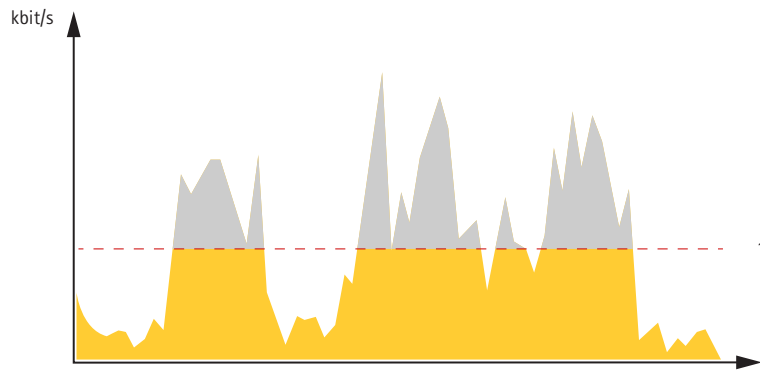


Maximum bitrate (MBR)

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.

AXIS FA54 Main Unit

Additional settings

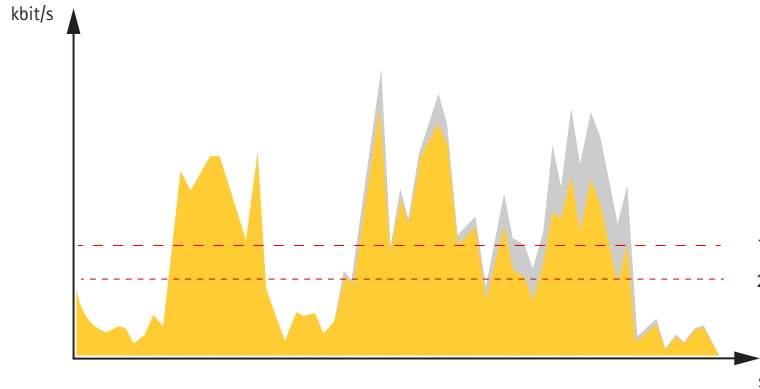


1 Target bitrate

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.

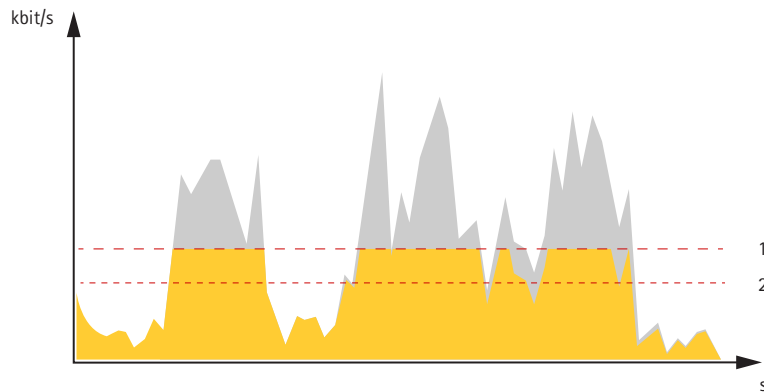


1 Target bitrate
2 Actual average bitrate

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

AXIS FA54 Main Unit

Additional settings



- 1 Target bitrate
- 2 Actual average bitrate

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.
3. Use the Contrast slider to adjust the amount of WDR.



Image without WDR.



Image with WDR.

Note

WDR may cause artifacts in the image.

AXIS FA54 Main Unit

Additional settings

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

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.

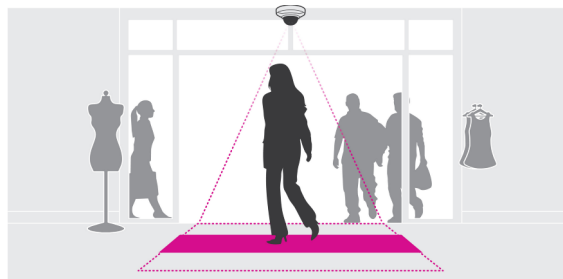
Note

- Several applications can run at the same time but some applications might not be compatible with each other. Certain combinations of applications might require too much processing power or memory resources when run in parallel. Verify that the applications work together before deployment.

AXIS People Counter

AXIS People Counter is an analytic application that can be installed on a network camera.

The counter is embedded in the camera which means you do not need a dedicated computer to run the application. AXIS People Counter is intended for retail environments, like stores or shopping malls, or other environments where you want to count people.



AXIS FA54 Main Unit

Troubleshooting

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 4*.
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**.

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.

AXIS FA54 Main Unit

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

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.
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Problems setting the IP address

The device is located on a different subnet	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.
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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 <code>ping</code> and the IP address of the device): <ul style="list-style-type: none">• If you receive: <code>Reply from <IP address>: bytes=32; time=10...</code> 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: <code>Request timed out</code>, this means that the IP address is available for use with the Axis device. Check all cabling and reinstall the device.
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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.
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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 <code>http</code> or <code>https</code> in the browser's address field.
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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 14*.

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).
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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 .
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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.

AXIS FA54 Main Unit

Troubleshooting

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	<ul style="list-style-type: none">• See <i>Performance considerations on page 16</i>.• 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.

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.

AXIS FA54 Main Unit

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

Status LED	Indication
Green	Steady green for normal operation.
Amber	Steady during startup. Flashes when restoring settings.
Red	Firmware upgrade failure.

Network LED	Indication
Green	Steady for connection to a 1 Gbit/s network. Flashes for network activity.
Amber	Steady for connection to a 10/100 Mbit/s network. Flashes for network activity.
Unlit	No network connection.

Power LED	Indication
Green	Normal operation.
Amber	Flashes green/amber during firmware upgrade.

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 14.

AXIS FA54 Main Unit

Specifications

Connectors

HDMI connector

Use the HDMI™ connector to connect a display or public view monitor.

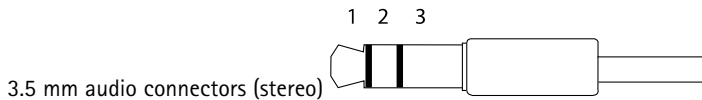
Network connector

RJ45 Ethernet connector.

Audio connector

The Axis product has the following audio connectors:

- **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.



	1 Tip	2 Ring	3 Sleeve
Audio Input	Microphone/Line in		Ground
Audio Output	Line out (mono)		Ground

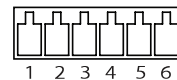
I/O connector

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.

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.

6-pin configurable terminal block

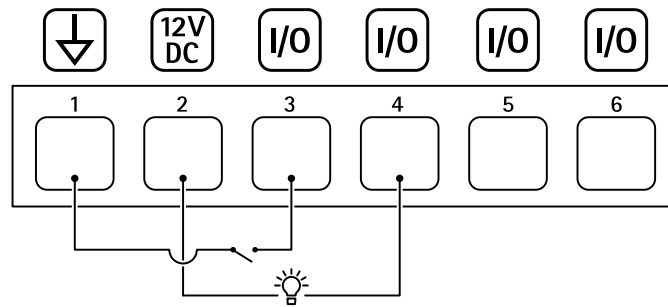


Function	Pin	Notes	Specifications
DC ground	1		0 V DC
DC output	2	Can be used to power auxiliary equipment. Note: This pin can only be used as power out.	12 V DC Max load = 50 mA
Configurable (Input or Output)	3–6	Digital input – Connect to pin 1 to activate, or leave floating (unconnected) to deactivate.	0 to max 30 V DC
		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.	0 to max 30 V DC, open drain, 100 mA

Example

AXIS FA54 Main Unit

Specifications



- 1 DC ground
- 2 DC output 12 V, max 50 mA
- 3 I/O configured as input
- 4 I/O configured as output
- 5 Configurable I/O
- 6 Configurable I/O

Power connector

DC connector. Use the supplied adapter.

RJ12 Connector

The RJ12 connector is used for connecting the sensor unit to the main unit.

