

## **AXIS P12 Thermal Network Camera Series**

**AXIS P1280–E Thermal Network Camera**

**AXIS P1290–E Thermal Network Camera**

# AXIS P12 Thermal Network Camera Series

## Table of Contents

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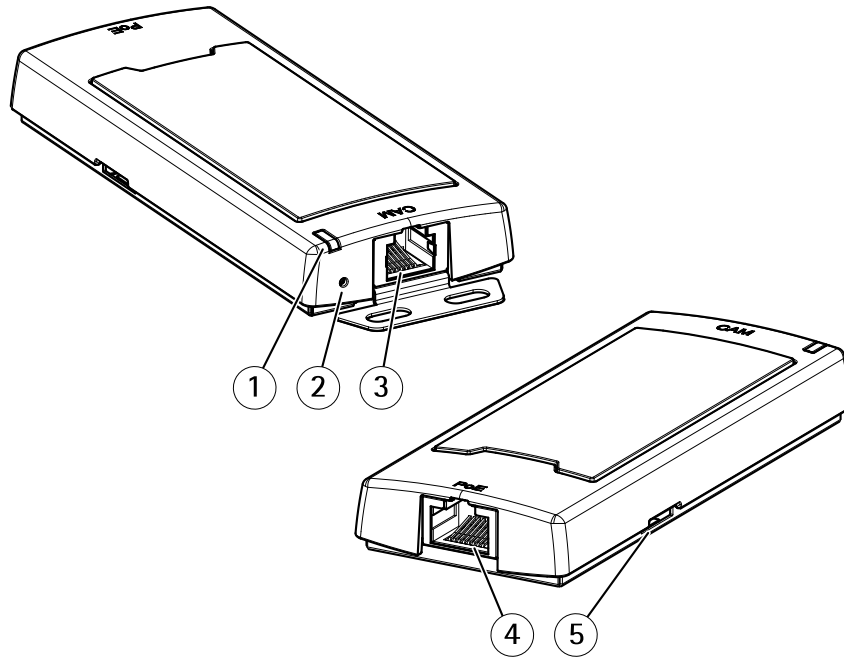
Product overview AXIS P1280-E .....	3
Product overview AXIS P1290-E .....	4
Sensor units .....	6
About sensor units .....	6
Find the device on the network .....	7
Access the device .....	7
About secure passwords .....	7
Setup .....	8
Product webpage overview .....	8
Image quality .....	9
Privacy masks .....	10
Overlays .....	10
Streaming and storage .....	11
Events .....	13
Applications .....	14
Troubleshooting .....	15
How to reset to factory default settings .....	15
How to check the current firmware .....	15
How to upgrade the firmware .....	15
Technical issues, clues and solutions .....	16
Performance considerations .....	17
Specifications .....	18
SD card slot .....	18
Buttons .....	18
Connectors .....	18

# AXIS P12 Thermal Network Camera Series

## Product overview AXIS P1280-E

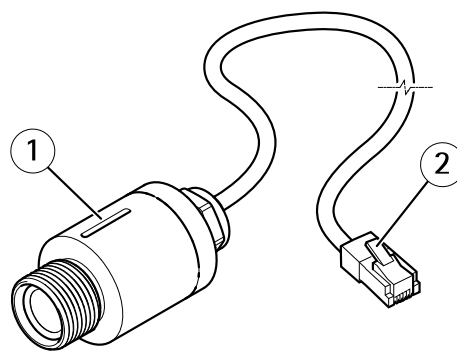
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### Product overview AXIS P1280-E



#### AXIS P12 Mk II Main Unit

- 1 Status LED
- 2 Control button
- 3 RJ12 connector
- 4 Network connector (PoE)
- 5 SD card slot (microSD card)



#### AXIS FA1080 Thermal Sensor unit

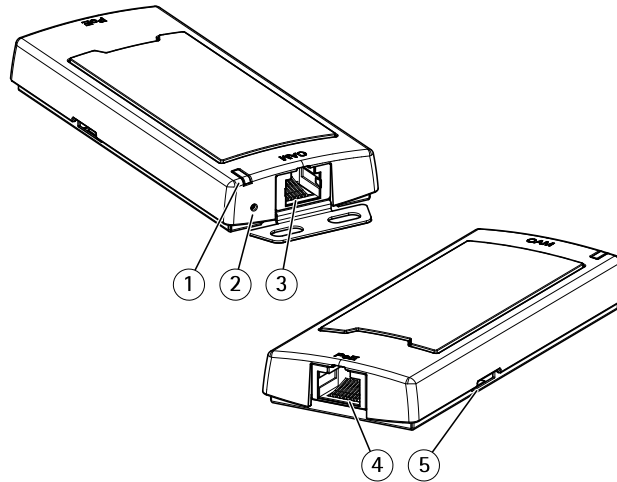
- 1 Sensor unit
- 2 RJ12 connector

# AXIS P12 Thermal Network Camera Series

## Product overview AXIS P1290-E

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### Product overview AXIS P1290-E



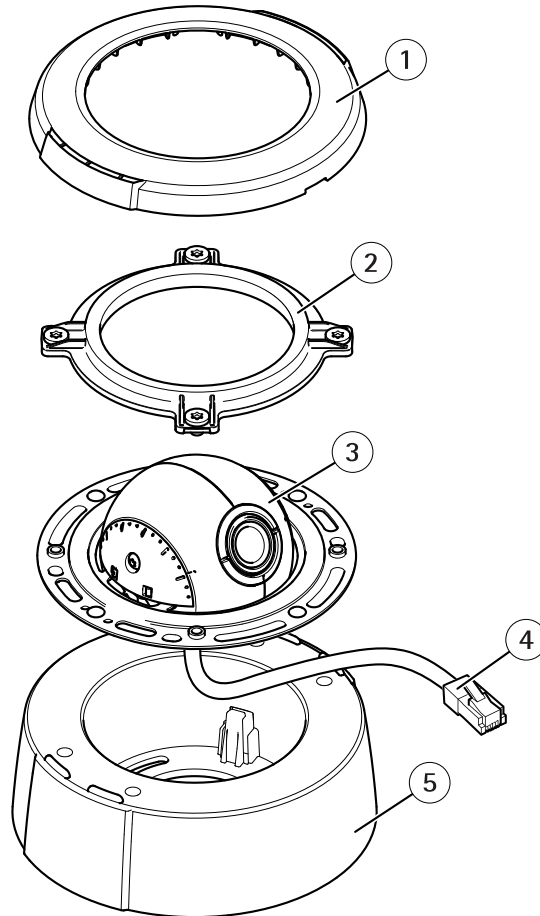
#### AXIS P12 Thermal Main Unit

- 1 Status LED
- 2 Control button
- 3 RJ12 connector
- 4 Network connector (PoE)
- 5 SD card slot (microSD card)

# AXIS P12 Thermal Network Camera Series

## Product overview AXIS P1290-E

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### *AXIS FA4090-E Thermal Sensor unit*

- 1 *Dome cover*
- 2 *Lock ring*
- 3 *Sensor unit*
- 4 *RJ12 connector*
- 5 *Hard ceiling mount (use as required)*

# AXIS P12 Thermal Network Camera Series

## Sensor units

### Sensor units

#### About sensor units

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

#### How to shorten the sensor unit cable

##### Note

This cable can only be shortened, not extended or modified in any other way.

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

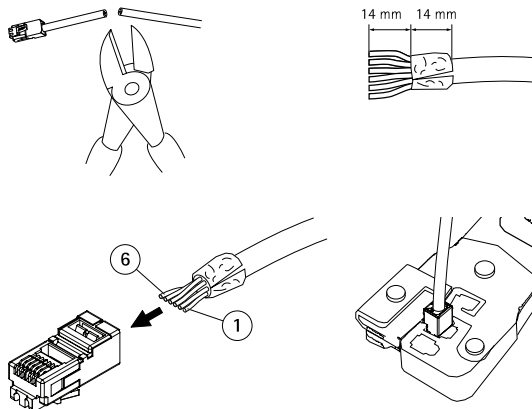
1. Cut the cable to the desired length. Measure from the sensor unit.
2. Strip the plastic outer coating from the end of the cable.
3. Peel back the shield.
4. Flatten the colored wires in the order described below.

1	Brown
2	White/brown
3	Not used
4	Not used
5	White/blue
6	Blue

##### NOTICE

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

5. Insert the wires all the way into a shielded 6P6C RJ12 connector.
6. Use a crimping tool to fasten the connector to the cable.



# AXIS P12 Thermal Network Camera Series

## Find the device on the network

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### 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](http://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](http://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.

### About 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:

- Change the default password that comes with each device.
- 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 *About secure passwords on page 7*.
2. Retype the password to confirm the spelling.
3. Click **Create login**. The password has now been configured.

# AXIS P12 Thermal Network Camera Series

## Setup

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### Setup

#### Product webpage overview

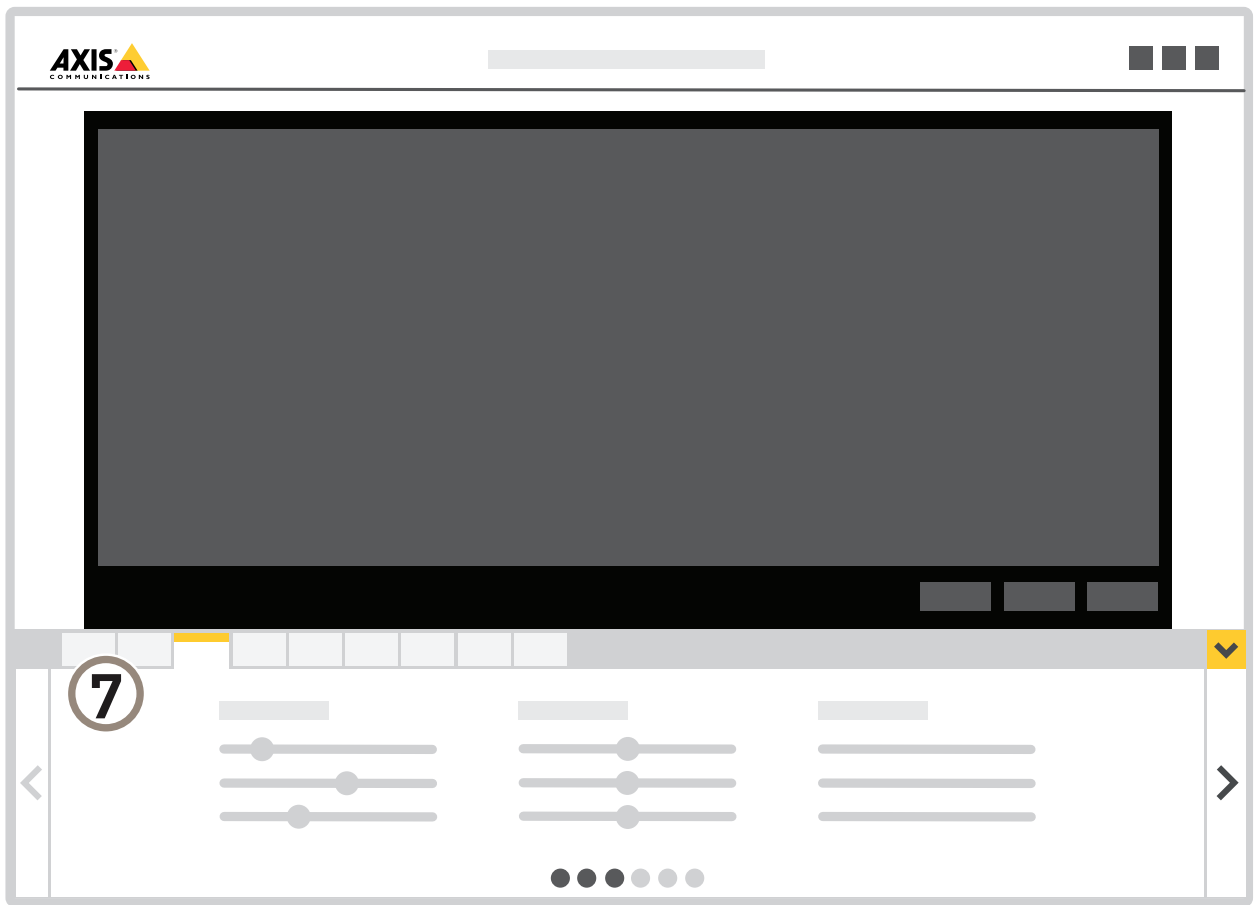


- 1 Live view control bar
- 2 Live view
- 3 Product name
- 4 Controls
- 5 Video control bar
- 6 Settings toggle



# AXIS P12 Thermal Network Camera Series

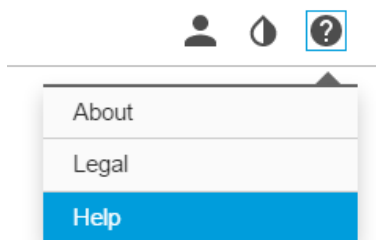
## Setup



7 Settings tabs

### About the product's built-in help

You can access the built-in help from the product's webpage. The help provides more detailed information on the product's features and their settings.



### Image quality

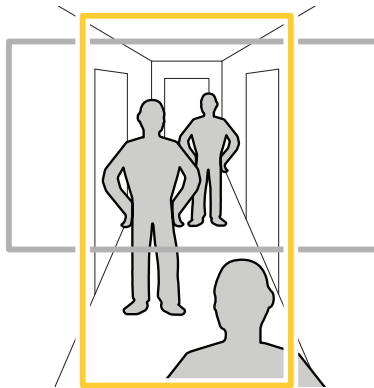
#### How to monitor long and narrow areas

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 P12 Thermal Network Camera Series

## Setup

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1. Depending on your product, turn the camera or the 3-axis lens in the camera 90° or 270°.
2. If your product doesn't rotate the view automatically, log in to the product's webpage and go to **Settings > Stream > Orientation**. Rotate the view 90° or 270°.

Find out more at [axis.com/axis-corridor-format](https://axis.com/axis-corridor-format)

### About color palettes

Color palettes applied to thermal images help the human eye distinguish image details. The colors in the palette are artificially created pseudocolors that emphasize temperature differences.

#### Color palette recommendation

The product has several color palettes to choose from. If an operator watches the video stream, choose any of the palettes. If the video stream is only used by applications, select the white-hot palette.

## Privacy masks

### How to hide parts of the image with privacy masks

#### What is a privacy mask?

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.

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

Using multiple privacy masks may affect the product's performance.

#### How to create a privacy mask

To create a privacy mask, go to **Settings > Privacy mask**.

## Overlays

### About 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.

# AXIS P12 Thermal Network Camera Series

## Setup

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### How to show an image overlay

1. Go to **Settings > Overlay**.
2. Select **Create overlay** and select **Image overlay**.
3. Choose **Import**.
4. Upload own overlay image.
5. Choose the image from the list of images.
6. To position the image overlay, choose **Custom** or one of the presets.

### How to show a text overlay when the camera detects motion

This example explains how to display the text "Motion detected" when the camera detects motion:

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.

Add the overlay text:

4. Go to **Settings > Overlay**.
5. Enter #D in the text field.
6. Choose text size and appearance.

Create an action rule:

7. Go to **System > Events > Action rules**.
8. Create an action rule with **AXIS Video Motion Detection** as trigger.
9. From the list of actions, select **Overlay text**.
10. Type "Motion detected".
11. Set the duration.

## Streaming and storage

### How to choose video compression format

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

# AXIS P12 Thermal Network Camera Series

## Setup

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### Note

H.264 is a licensed technology. The Axis product includes one H.264 viewing client license. Installing 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.

### How to 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.

### How to 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**.

### 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.

### How to record and watch video

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

1. Go to the camera's live view.

# AXIS P12 Thermal Network Camera Series

## Setup

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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

### About events

The event pages allow you to configure your product to perform actions when different events occur. For example, the product can start a recording or send an email notification when motion is detected. The set of conditions that defines how and when the action is triggered is called an action rule.

### How to trigger an action

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

#### Note

If you make changes to an active action rule, the action rule needs to be restarted for the changes to take effect.

### How to 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 an action rule:

4. Go to **Settings > System > Events** and add an action rule.
5. Type a name for the action rule.
6. From the list of triggers, select **Applications** and then select **AXIS Video Motion Detection (VMD)**.
7. From the list of actions, select **Record video**.
8. Select an existing stream profile or create a new one.
9. Enable and set the pre-trigger time to 5 seconds.
10. Enable **While the rule is active**.
11. Enable and set the post-trigger time to 60 seconds.
12. Select **SD card** from the list of storage options.

# AXIS P12 Thermal Network Camera Series

## Setup

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13. Click Ok.

### Applications

#### About 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](https://axis.com/applications)

To find the user manuals for Axis applications, go to [axis.com](https://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 P12 Thermal Network Camera Series

## Troubleshooting

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### Troubleshooting

If you can't find what you're looking for here, try the troubleshooting section at [axis.com/support](https://axis.com/support)

### How to 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 .
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](https://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**.

### How to 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**.

### How to 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, 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](https://axis.com/support/firmware)

# AXIS P12 Thermal Network Camera Series

## Troubleshooting

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1. Download the latest firmware file to your computer, available free of charge at [axis.com/support/firmware](http://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](http://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](http://axis.com/support)

#### Problems upgrading the firmware

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Firmware upgrade failure	If the firmware upgrade fails, the product 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 product and try again.
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#### Problems setting the IP address

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The product is located on a different subnet	If the IP address intended for the product and the IP address of the computer used to access the product 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 product from the network. Run the ping command (in a Command/DOS window, type <code>ping</code> and the IP address of the product): <ul style="list-style-type: none"><li>• If you receive: <code>Reply from &lt;IP address&gt;: 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 product.</li><li>• If you receive: <code>Request timed out</code>, this means that the IP address is available for use with the Axis product. Check all cabling and reinstall the product.</li></ul>
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Possible IP address conflict with another device on the same subnet	The static IP address in the Axis product 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 product.
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#### The product cannot be accessed from a browser

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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 product must be reset to the factory default settings. See *How to reset to factory default settings on page 15*.

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 product on the network. Identify the product 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](http://axis.com/support)

Certificate error when using IEEE 802.1X	For authentication to work properly, the date and time settings in the Axis product must be synchronized with an NTP server. Go to <b>Settings &gt; System &gt; Date and time</b>
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#### The product is accessible locally but not externally

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Router configuration	Check that your router allows incoming data traffic to the Axis product. The router must support UPnP®.
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Firewall protection	Check the Internet firewall with your network administrator.
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# AXIS P12 Thermal Network Camera Series

## Troubleshooting

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### Problems with streaming

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Multicast H.264 only accessible by local clients	Check if your router supports multicasting, or if the router settings between the client and the product 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 product 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.
Lower frame rate than expected	<ul style="list-style-type: none"><li>• See <i>Performance considerations on page 17</i>.</li><li>• Reduce the number of applications running on the client computer.</li><li>• Limit the number of simultaneous viewers.</li><li>• Check with the network administrator that there is enough bandwidth available.</li><li>• Lower the image resolution.</li><li>• The maximum frames per second is dependent on the utility frequency (60/50 Hz) of the Axis product.</li></ul>

### 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 lens manually will result in better performance compared to rotating the image from the GUI.
- 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.
- Using palettes affects the product's CPU load which in turn affects the frame rate.

# AXIS P12 Thermal Network Camera Series

## Specifications

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### Specifications

To find the latest version of the product's datasheet, go to the product page at [axis.com](http://axis.com) and locate **Support & Documentation**.

#### LED indicators

LED	Color	Indication
Status	Green	Steady green for normal operation.
	Amber	Steady during startup. Flashes during firmware upgrade or reset to factory default.
	Red	Flashes red for firmware upgrade failure.

#### Note

- The Status LED can be configured to be unlit during normal operation. To configure, go to **Setup > System Options > Ports & Devices > LED**.
- The Status LED can be configured to flash while an event is active.
- The Status LED can be configured to flash for identifying the unit. Go to **Setup > System Options > Maintenance**.

#### 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](http://axis.com)



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#### Buttons

##### Control button

The control button is used for:

- Resetting the product to factory default settings. See *How to reset to factory default settings on page 15*.
- 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

RJ45 Ethernet connector with Power over Ethernet (PoE).

# AXIS P12 Thermal Network Camera Series

## Specifications

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### **RJ12 connector**

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

For information on how to shorten the sensor unit cable see *How to shorten the sensor unit cable on page 6*.

