

AXIS P3818-PVE Network Camera

User Manual

AXIS P3818-PVE Network Camera

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Get started

Get started

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™	Firefox®	Edge™	Safari®
Windows®	recommended	recommended	✓	
macOS®	recommended	recommended	✓	✓
Linux®	recommended	recommended	✓	
Other operating systems	✓	✓	✓	✓*

**iOS and iPadOS is only supported up until version 14.*

If you need more information about recommended browsers, go to *AXIS OS Portal*.

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 27*.
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. See *Reset to factory default settings on page 27*.

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

www.axis.com/products/online-manual/60260#t10098905

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.

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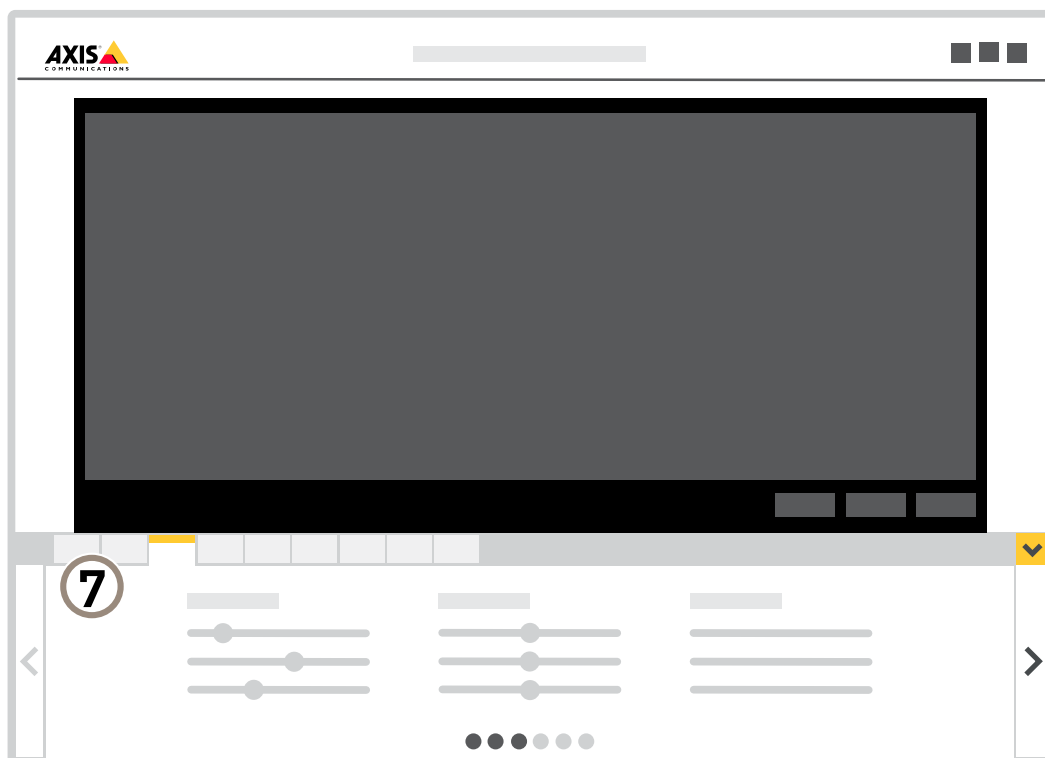
Webpage overview



- 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

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7 Settings tabs

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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 22*.

Level the camera

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

1. Go to **Settings > System > Orientation** and click  .
2. Adjust the camera mechanically until the position of the reference area or the object is aligned with the leveling guide.

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.

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**:

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- 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.

Maximize the details in an image

Important

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

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.

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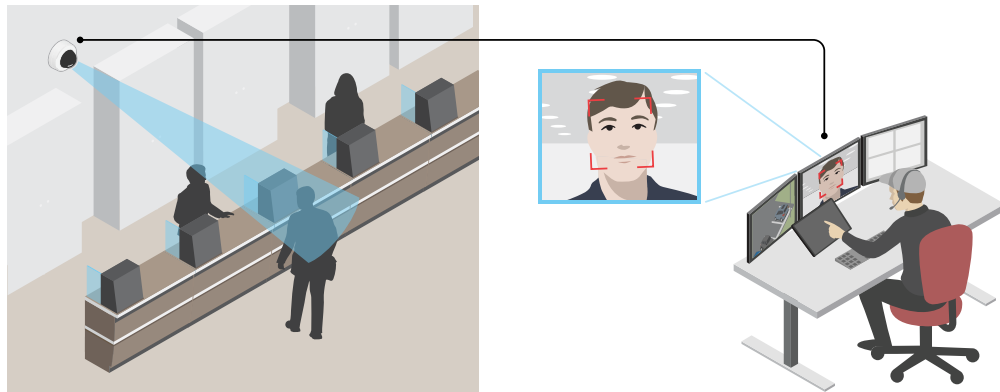
Note

- WDR can cause artifacts in the image.
 - WDR may not be available for all capture modes.
1. Go to **Settings > Image > Wide dynamic range**.
 2. Turn on WDR.
 3. Use the **Local contrast** slider to adjust the amount of WDR.

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

Verify the pixel resolution

To verify that a defined part of the image contains enough pixels to, for example, recognize the face of a person, you can use the pixel counter.



1. Go to **Settings > System > Orientation**.
2. Click  .
3. In the camera's live view, adjust the size and position of the rectangle around the area of interest, for example where you expect faces to appear.

You can see the number of pixels for each of the rectangle's sides (X and Y), and decide if the values are enough for your needs.

Hide parts of the image with privacy masks

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

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

www.axis.com/products/online-manual/60260#t10106902

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/60260#t10106902

How to change the appearance of the mask

Show an image overlay

You can add an image as an overlay in the video stream.

1. Go to **Settings > Overlay**.
2. Click **Image list**.
3. Upload an image and click **Done**.
4. Click **Create overlay**.
5. Select **Image** and click **Create**.
6. Select the image from the drop-down list.
7. To position the image overlay, choose **Custom** or one of the presets.
8. 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 22*.

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Additional settings

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 your 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**.

Record and watch video

To record video you must first set up network storage, see *Set up network storage on page 11*, 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 for events

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.

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To learn more, check out our guide *Get started with rules for events*.

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.

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/60260#t10106619

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**.
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**.

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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.



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. Click **Create overlay**.
6. Select **Text** and click **Create**.
7. Enter #D in the text field.
8. Choose text size and appearance.
9. To position the text overlay, choose **Custom** or one of the presets.

Create a rule:

10. Go to **System > Events > Rules** and add a rule.
11. Type a name for the rule.
12. In the list of conditions, select **AXIS Video Motion Detection**.
13. In the list of actions, select **Use overlay text**.
14. Select **Camera 1**.
15. Type "Motion detected".
16. Set the duration.
17. Click **Save**.

Note

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

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Record video when the camera detects loud noises

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

Turn on audio:

1. Set up the stream profile to include audio, see *Add audio to your recording on page 19*.

Turn on audio detection:

1. Go to **Settings > System > Detectors > Audio detection**.
2. Adjust the alarm level according to your needs.

Create a rule:

1. Go to **Settings > System > Events** and add a rule.
2. Type a name for the rule.
3. In the list of conditions, under **Audio**, select **Audio Detection**.
4. In the list of actions, under **Recordings**, select **Record video**.
5. Select the stream profile where audio has been turned on.
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**.

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.

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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. For the port that you connected the AXIS I/O Indication LED to, set the direction to **Output**, and set the normal state to **Open circuit (NO)**
3. Go to **Settings > System > Events**.
4. Create a new rule.
5. 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.
6. In the list of actions, select **Record video**. Select a stream profile or create a new. Also set the **Prebuffer** and **Postbuffer** as required.
7. Save the rule.
8. Create a second rule and select the same **Condition** as in the first rule.
9. 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**.
10. 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.

Open the lock to a gate when someone is nearby

This example explains how to direct the camera and open a gate when someone wants to enter during daytime. This is done by connecting a PIR detector to the product's input port and a switch relay to the product's output port.

Required hardware

- Mounted PIR detector
- Switch relay connected to the gate lock, in this case the switch is normally closed (NC)

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- Connecting wires

Physical connection

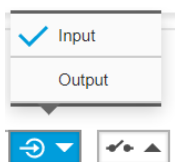
1. Connect the wires from the PIR detector to the input pin, see *I/O connector on page 32*.
2. Connect the wires from the switch to the output pin, see *I/O connector on page 32*

Configure I/O ports

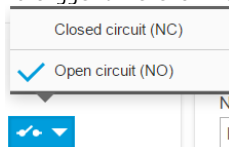
You need to connect the switch relay to the camera from the camera's webpage. First, configure the I/O ports:

Set the PIR detector to an input port

1. Go to **System > I/O ports**.

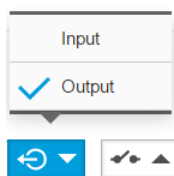


2. Select **Input** in the **Port 1** drop-down list.
3. Give the input module a descriptive name, for example "PIR detector".
4. To trigger an event whenever the PIR detector senses motion, select **Open circuit** in the drop-down list.

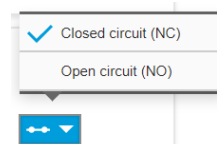


Set the switch relay to an output port

1. Go to **System > I/O ports**.



2. Select **Output** in the **Port 2** drop-down list.
3. Give the output module a descriptive name, for example "Gate switch".



4. To open the gate whenever an event is triggered, select **Closed circuit** in the drop-down list.

Create rules

1. Go to **Settings > System > Events** and add a rule.
2. Type a name for the rule, for example "Open gate".
3. In the list of conditions, select **PIR detector**.
4. In the list of actions, select **Toggle I/O once**.

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5. In the list of ports, select **Gate switch**.
6. Set state to **Active**.
7. Set the duration.
8. Click **Save**.

Trigger an alarm if someone opens the housing

This example explains how to trigger an alarm if someone opens the housing.

Create a rule:

1. Go to **Settings > System > Events** and add a rule.
2. Type a name for the rule.
3. In the list of conditions, select **Casing open**.
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**.

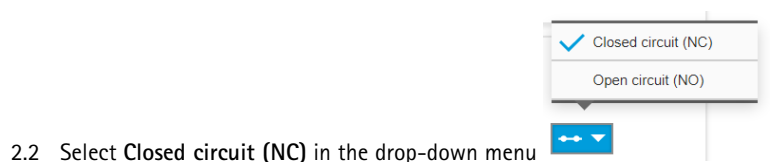
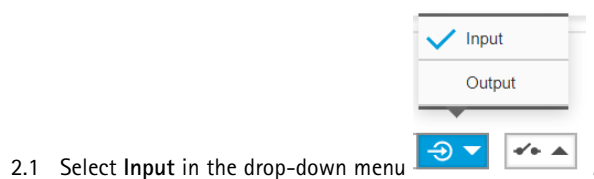
Set up the intrusion alarm

Before you start

- Connect the intrusion alarm switch to pin 1 (ground) and pin 3 (digital I/O) of the camera's I/O connector.

Configure the input port

1. Go to **Settings > System > I/O ports**.
2. For Port 1:



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 **I/O**, select **Digital input**.

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4. In the list of ports, select **Input 1**.
5. In the list of actions, under **Notifications**, select **Send notification to email**.
6. 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  .

7. Type a subject and a message for the email.
8. Click **Save**.

Detect tampering with input signal

This example explains how to trigger an alarm when the input signal has been cut or short-circuited. For more information about the I/O connector, see *page 32*.



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

www.axis.com/products/online-manual/60260#t10110432

How to send an email notification when someone tampers with the input signal

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

Create a rule:

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

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

5. Type a subject and a message for the email.
6. Click **Save**.

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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/60260#t10106687

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**.

Audio

Add audio to your recording

Turn on audio:

1. Go to **Settings > Audio** and turn on **Allow audio**.
2. Go to **Input > Type** and select your audio source.

Edit the stream profile which is used for the recording:

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

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7. Click Close.

Connect to a network speaker

Network speaker pairing allows you to use a compatible Axis network speaker as if it is connected directly to the camera. Once paired, the speaker acts as an audio out device where you can play audio clips and transmit sound through the camera.

Important

For this feature to work with a video management software (VMS), you must first pair the camera with the network speaker, then add the camera to your VMS.

Pair camera with network speaker

1. Go to Settings > System > Accessories > Network speaker pairing.
2. Type the network speaker's IP address, username and password.
3. Click **Connect**. A confirmation message appears and **Use speaker pairing** is turned on.
4. Go to Settings > Audio.
5. Turn on **Allow audio**.
6. Make sure that audio mode is set to **Half duplex** or **Simplex – Network Camera speaker only**. Otherwise, the camera will not communicate with the network speaker.

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Cleaning recommendations

Cleaning recommendations

If the device gets grease stains or becomes heavily soiled, you can clean it with mild, solvent-free soap or detergent.

NOTICE

Never use harsh detergent, for example gasoline, benzene, or acetone.

1. Use a can of compressed air to remove any dust or loose dirt from the device.
2. Clean the device with a soft cloth dampened with mild detergent and lukewarm water.
3. Wipe carefully with a dry cloth.

Note

Avoid cleaning in direct sunlight or at elevated temperatures, as this may cause stains when the water droplets dry.

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Learn more

Learn more

Long-distance connections

This product supports fiber-optic cable installations through a media converter. Fiber-optic cable installations offer a number of benefits such as:

- Long-distance connection
- High speed
- Long lifetime
- Large capacity of data transmission
- Electromagnetic interference immunity

Find out more about fiber-optic cable installations on axis.com/technologies/fiber-optics.

For information about how to install the media converter see the Installation Guide for this product.

Privacy masks

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.

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.

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

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Learn more

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.

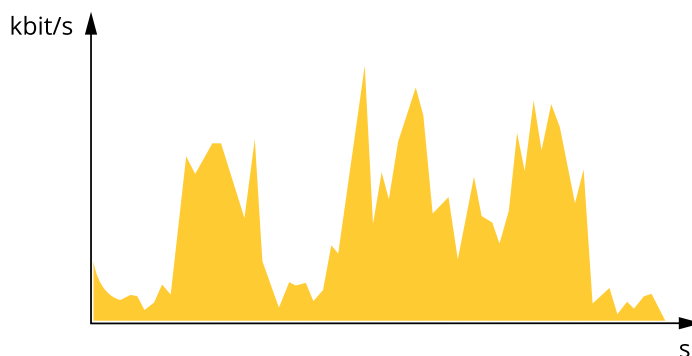
The **Stream profiles** settings override the settings from the **Stream** tab. If you request a stream with a specific stream profile, the stream contains the settings of that profile. If you request a stream without specifying a stream profile, or request a stream profile that doesn't exist in the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

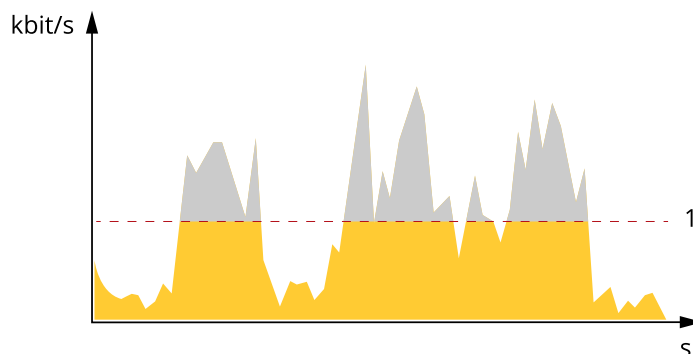


Maximum bitrate (MBR)

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.

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[Learn more](#)

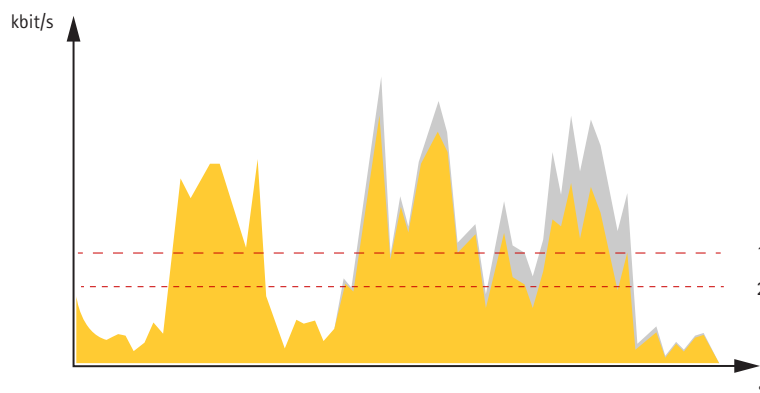


1 Target bitrate

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.

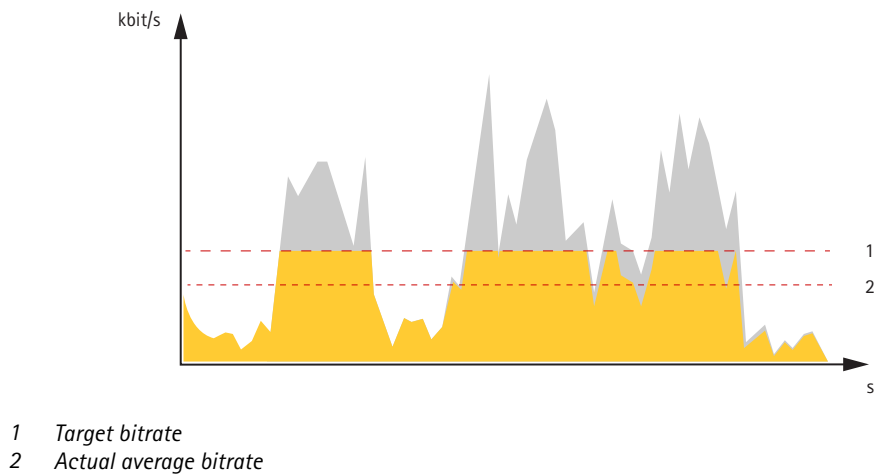


1 Target bitrate
2 Actual average bitrate

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

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Learn more



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.



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

www.axis.com/products/online-manual/60260#t10001688

How to download and install an application



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

www.axis.com/products/online-manual/60260#t10001688

How to activate an application licence code on a device

Security

TPM module

The TPM (Trusted Platform Module) is a component that provides cryptographic features to protect information from unauthorized access. It is always activated and there are no settings you can change.

To learn more about TPM, go to axis.com/press-center/media-resources/white-papers.

AXIS P3818-PVE Network Camera

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 31*.
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 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.

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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.

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/60260#t10095327

How to upgrade the 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.

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 version from the Maintenance page.

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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Troubleshooting

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): • 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. If the password for the user <code>root</code> is lost, the device must be reset to the factory default settings. See <i>Reset to factory default settings</i> on page 27.
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.

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.

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Troubleshooting

Lower frame rate than expected

- See *Performance considerations* on page 30.
- 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:

- 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

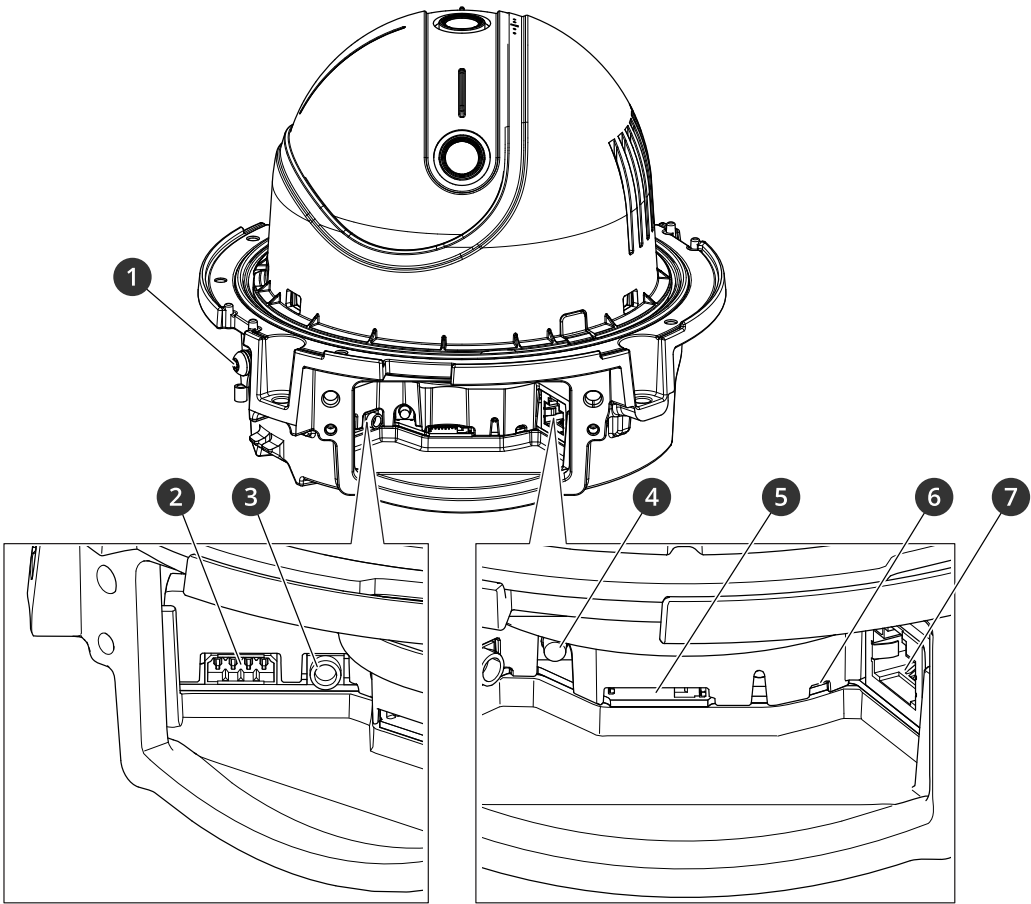
Contact support at axis.com/support.

AXIS P3818-PVE Network Camera

Specifications

Specifications

Product overview



- 1 Protective earth terminal
- 2 I/O port
- 3 Audio input
- 4 Control button
- 5 Micro SD card slot
- 6 LED status indicator
- 7 PoE connector

LED indicators

Status LED	Indication
Unlit	Connection and normal operation.
Green	Shows steady green for 10 seconds for normal operation after startup completed.

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Amber	Steady during startup. Flashes during firmware upgrade or reset to factory default.
Amber/Red	Flashes amber/red if network connection is unavailable or lost.

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 27.

Connectors

Network connector

RJ45 Ethernet connector with Power over Ethernet (PoE).

I/O connector

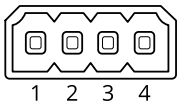
Use the I/O connector with external devices in combination with, for example, motion detection, event triggering, and alarm notifications. In addition to the 0 V DC reference point and power (DC output), the I/O connector provides the interface to:

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

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

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

4-pin terminal block



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Specifications

I/O connector tables

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)	3-4	Digital input or Supervised input – Connect to pin 1 to activate, or leave floating (unconnected) to deactivate. To use supervised input, install end-of-line resistors. See connection diagram for information about how to connect the resistors.	0 to max 28 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 28 V DC, open drain, 100 mA

Example

