

# INSTALLATION GUIDE

## AXIS P7216 Video Encoder

ENGLISH



## Legal Considerations

Video and audio surveillance can be regulated by laws that vary from country to country. Check the laws in your local region before using this product for surveillance purposes.

This product includes one (1) H.264 decoder license and one (1) AAC decoder license. To purchase further licenses, contact your reseller.

## Liability

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Axis AB has intellectual property rights relating to technology embodied in the product described in this document. In particular, and without limitation, these intellectual property rights may include one or more of the patents listed at <http://www.axis.com/patent.htm> and one or more additional patents or pending patent applications in the US and other countries.

This product contains licensed third-party software. See the menu item "About" in the product's user interface for more information.

This product contains source code copyright Apple Computer, Inc., under the terms of Apple Public Source License 2.0 (see <http://www.opensource.apple.com/apsl>). The source code is available from <http://developer.apple.com/darwin/projects/bonjour/>

## Equipment Modifications

This equipment must be installed and used in strict accordance with the instructions given in the user documentation. This equipment contains no user-serviceable components. Unauthorized equipment changes or modifications will invalidate all applicable regulatory certifications and approvals.

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## Support

Should you require any technical assistance, please contact your Axis reseller. If your questions cannot be answered immediately, your reseller will forward your queries through the appropriate channels to ensure a rapid response. If you are connected to the Internet, you can:

- download user documentation and software updates
- find answers to resolved problems in the FAQ database. Search by product, category, or phrase
- report problems to Axis support staff by logging in to your private support area
- chat with Axis support staff (selected countries only)
- visit Axis Support at [www.axis.com/techsup/](http://www.axis.com/techsup/)

## Learn More!

Visit Axis learning center [www.axis.com/academy/](http://www.axis.com/academy/) for useful trainings, webinars, tutorials and guides.

## Regulatory Information

### Europe

**CE** This product complies with the applicable CE marking directives and harmonized standards:

- Electromagnetic Compatibility (EMC) Directive 2004/108/EC. See *Electromagnetic Compatibility (EMC)*, on page 2.
- Low Voltage (LVD) Directive 2006/95/EC. See *Safety*, on page 3.
- Restrictions of Hazardous Substances (RoHS) Directive 2011/65/EU. See *Disposal and Recycling*, on page 3.

A copy of the original declaration of conformity may be obtained from Axis Communications AB. See *Contact Information*, on page 3.

### Electromagnetic Compatibility (EMC)

This equipment has been designed and tested to fulfill applicable standards for:

- Radio frequency emission when installed according to the instructions and used in its intended environment.
- Immunity to electrical and electromagnetic phenomena when installed according to the instructions and used in its intended environment.

### USA

This equipment has been tested using a shielded network cable (STP) and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

### Canada

This Class B digital apparatus complies with Canadian ICES-003.

## Europe

This digital equipment fulfills the requirements for RF emission according to the Class B limit of EN 55022.

This product fulfills the requirements for immunity according to EN 61000-6-1 residential, commercial and light-industrial environments.

This product fulfills the requirements for immunity according to EN 61000-6-2 industrial environments.

## Australia/New Zealand

This digital equipment fulfills the requirements for RF emission according to the Class B limit of AS/NZS CISPR 22.

## Japan

この装置は、クラスB情報技術装置です。この装置は、家庭環境で使用することを目的としていますが、この装置がラジオやテレビジョン受信機に近接して使用されると、受信障害を引き起こすことがあります。取扱説明書に従って正しい取り扱いをして下さい。

## Korea

이 기기는 가정용(B급) 전자파적합기기로서 주로 가정에서 사용하는 것을 목적으로 하며, 모든 지역에서 사용할 수 있습니다.

## Safety

This product complies with IEC/EN/UL 60950-1, Safety of Information Technology Equipment.

The power supply used with this product shall fulfill the requirements for Safety Extra Low Voltage (SELV) and Limited Power Source (LPS) according to IEC/EN/UL 60950-1.

## Disposal and Recycling

When this product has reached the end of its useful life, dispose of it according to local laws and regulations. For information about your nearest designated collection point, contact your local authority responsible for waste disposal. In accordance with local legislation, penalties may be applicable for incorrect disposal of this waste.

## Europe



■ This symbol means that the product shall not be disposed of together with household or commercial waste. Directive 2012/19/EU on waste electrical and electronic equipment (WEEE) is applicable in the European Union member states. To prevent potential harm to human health and the environment, the product must be disposed of in an approved and environmentally safe recycling process. For information about your nearest designated collection point, contact your local authority responsible for waste disposal. Businesses should contact the product supplier for information about how to dispose of this product correctly.

This product complies with the requirements of Directive 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS).

## China



This product complies with the requirements of the legislative act Administration on the Control of Pollution Caused by Electronic Information Products (ACPEIP).

## Contact Information

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Sweden

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Fax: +46 46 13 61 30

www.axis.com



## Safety Information

Read through this Installation Guide carefully before installing the product. Keep the Installation Guide for future reference.

### Hazard Levels

**▲ DANGER**

Indicates a hazardous situation which, if not avoided, will result in death or serious injury.

**▲ WARNING**

Indicates a hazardous situation which, if not avoided, could result in death or serious injury.

**▲ CAUTION**

Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

**NOTICE**

Indicates a situation which, if not avoided, could result in damage to property.

### Other Message Levels

**Important**

Indicates significant information which is essential for the product to function correctly.

**Note**

Indicates useful information which helps in getting the most out of the product.

## Safety Instructions

### **NOTICE**

- The Axis product shall be used in compliance with local laws and regulations.
- To use the Axis product outdoors, or in similar environments, it shall be installed in an approved outdoor housing.
- Store the Axis product in a dry and ventilated environment.
- Avoid exposing the Axis product to vibration, shocks or heavy pressure.
- Do not install the product on unstable or vibrating brackets, surfaces or walls.
- Use only applicable tools when installing the Axis product. Excessive force could cause damage to the product.
- Do not use chemicals, caustic agents, or aerosol cleaners. Use a damp cloth for cleaning.
- Use only accessories that comply with technical specification of the product. These can be provided by Axis or a third party.
- Use only spare parts provided by or recommended by Axis.
- Do not attempt to repair the product by yourself. Contact Axis support or your Axis reseller for service matters

## Transportation

### **NOTICE**

- When transporting the Axis product, use the original packaging or equivalent to prevent damage to the product.

## Battery

The Axis product uses a 3.0 V CR2032 lithium battery as the power supply for its internal real-time clock (RTC). Under normal conditions this battery will last for a minimum of five years.

Low battery power affects the operation of the RTC, causing it to reset at every power-up. A log message will appear when the battery needs replacing.

The battery should not be replaced unless required, but if the battery does need replacing, contact Axis support at [www.axis.com/techsup/](http://www.axis.com/techsup/) for assistance.

### **⚠WARNING**

- Risk of explosion if the battery is incorrectly replaced.
- Replace only with an identical battery or a battery which is recommended by Axis.
- Dispose of used batteries according to local regulations or the battery manufacturer's instructions.

## Installation Guide

This Installation Guide provides instructions for installing AXIS P7216 Video Encoder on your network. For other aspects of using the product, see the User Manual available at [www.axis.com](http://www.axis.com)

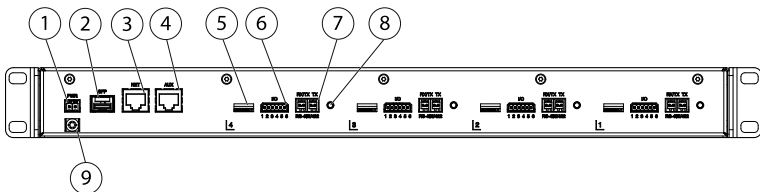
## Installation Steps

1. Make sure the package contents, tools and other materials necessary for the installation are in order. See *page 7*.
2. Study the hardware overview. See *page 7*.
3. Study the specifications. See *page 10*.
4. Install the hardware. See *page 13*.
5. Access the product. See *page 14*.

## Package Contents

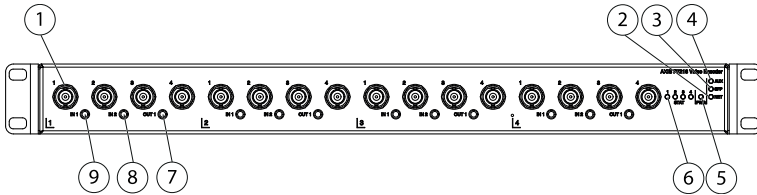
- Axis P7216 Video Encoder
- Power adapter model
  - Type PS-P
- Mounting kit
  - 4 surface pads
  - 2 brackets
- Terminal connectors
  - 4 I/O 6-pin connector
  - 4 RS-485/422 2x2-pin connector
- Installation and Management Software CD
- Printed materials
  - Installation Guide (this document)

## Hardware Overview



- 1 *Power connector*

- 2 Network connector SFP
- 3 Network connector RJ45
- 4 Auxiliary connector RJ45 (maintenance)
- 5 Card slot (microSD) x4
- 6 I/O terminal connector x4
- 7 RS-485/422 connector x4
- 8 Control button x4
- 9 Protective earth



- 1 Video input connector BNC x16
- 2 Network LED RJ45
- 3 Network LED SFP
- 4 Network LED auxiliary
- 5 Power LED
- 6 Status LED 1-4
- 7 Audio out connector
- 8 Audio in connector 2
- 9 Audio in connector 1

## LED Indicators

LED	Color	Indication
Net-work	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.
Status	Green	Steady green for normal operation.
	Amber	Steady during startup and when restoring settings.
	Red	Slow flash for failed upgrade.
Power	Green	Normal operation.
	Amber	Flashes green/amber during firmware upgrade.



## Connectors

For specifications, see *page 10*.

**BNC connector** – Each video input is terminated using a coax/BNC connector. Connect a 75 Ohm coaxial video cable; the recommended maximum length is 800 feet (250 meters).

### Note

75 Ohm video termination can be enabled/disabled for the video input via the product's web page at Video & Audio > Video Input > Video termination. This termination is enabled on factory default. In cases where the product is to be connected in parallel with other equipment, for optimum video quality, it is recommended that termination be enabled for only the last device in the video signal chain.

**Network connector** – RJ45 Ethernet connector.

**SFP connector** – The unit can only use one Network interface, either an SFP module or RJ45 connector. SFP module has higher priority than the RJ45 connector.

### NOTICE

The product shall be connected using a shielded network cable (STP). All cables connecting the product to the network switch shall be shielded (STP) and intended for their specific use. Make sure that the network switch is properly grounded. For information about regulatory requirements, see *Regulatory Information, on page 2*.

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

**Audio out (green)** – 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.

**SD card slot** – A standard or high-capacity microSD card (not included) can be used for local recording with removable storage.

### NOTICE

To prevent corruption of recordings, the SD card should be unmounted before removal. To unmount, go to **Setup > System Options > Storage > SD Card** and click **Unmount**.

**Control button** – The control button is used for:

- Resetting the product to factory default settings. See *page 14*.
- Connecting to an AXIS Video Hosting System service or AXIS Internet Dynamic DNS Service. For more information about these services, see the User Manual.

**Power connector** – 2-pin terminal block for power input. Use a limited power source (LPS) with either a rated output power limited to £100 W or a rated output current limited to £5 A.

**I/O terminal connector** – Use in applications for e.g. motion detection, event triggering, time lapse recording and alarm notifications. In addition to an auxiliary power and a GND pin, the I/O terminal connector provides the interface to:

- **Digital output** – For connecting external devices such as relays and LEDs. Connected devices can be activated by the VAPIX® Application Programming Interface, output buttons on the Live View page or by an Action Rule. The output will show as active (shown under **System Options > Ports & Devices**) if the alarm device is activated.
- **Digital input** – An alarm input for connecting devices that can toggle between an open and closed circuit, for example: PIRs, door/window contacts, glass break detectors, etc. When a signal is received the state changes and the input becomes active (shown under **System Options > Ports & Devices**).

**RS-485/RS-422 connector** – Two 2-pin terminal blocks for RS-485/RS-422 serial interface used to control auxiliary equipment, e.g. PTZ devices.

## Specifications

### Operating Conditions

The casing of AXIS P7216 is not approved for outdoor use. The product may only be installed in indoor environments.

Product	Temperature	Humidity
AXIS P7216	0 °C to 50 °C (32 °F to 122 °F)	20-80% RH (non-condensing)

### Power Consumption

Product	Power supply
AXIS P7216	AXIS PS-P power supply

## Connectors

### I/O terminal connector

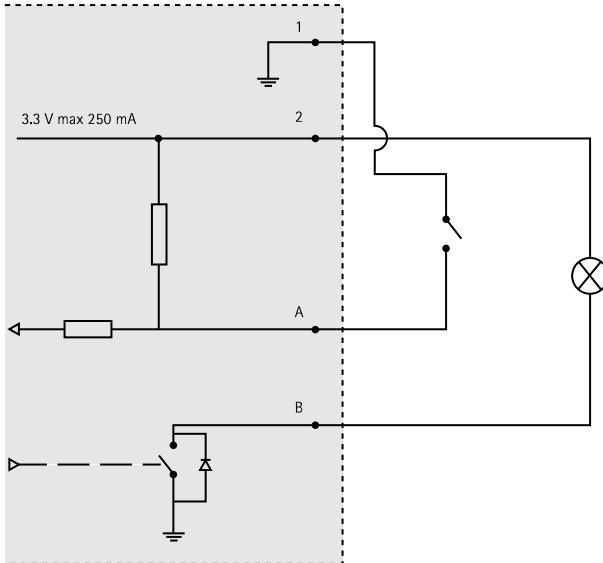
6-pin terminal block for:



- Digital Input
- Digital Output
- Auxiliary power and ground (GND)

Function	Pin	Notes	Specifications
GND	1	Ground	
3.3 V DC Power	2	Can be used to power auxiliary equipment. Note: This pin can only be used as power out.	Max load = 250 mA
Configurable (Input or Output)	3–6	Digital input – Connect to GND to activate, or leave floating (unconnected) to deactivate.	0 to +40 V DC
		Digital output – Internal connection to ground when activated, floating (unconnected) when deactivated. If used with an inductive load, e.g. a relay, a diode	Max load = 100 mA Max voltage = +40 V DC

must be connected in parallel with the load, for protection against voltage transients.

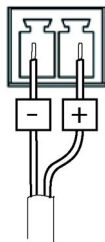


- A I/O configured as input
- B I/O configured as output

### Power connector

2-pin terminal block for power input. Use a limited power source (LPS) with either a rated output power limited to £100 W or a rated output current limited to £5 A.

### DC power input



### Audio connector

3.5 mm audio connectors (stereo)

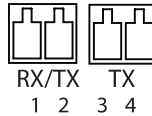


	Audio Input	Audio Output
1 Tip	Microphone/Line in	Line out (mono)
2 Ring		
3 Sleeve	Ground	Ground

### RS-485/422 connector

Two 2-pin terminal blocks for RS485/RS422 serial interface. The serial port can be configured to support:

- Two-wire RS485 half duplex
- Four-wire RS485 full duplex
- Two-wire RS422 simplex
- Four-wire RS422 full duplex point to point communication



Function	Pin	Notes
RS485/RS422 RX/TX A	1	(RX) For full duplex RS485/RS422 (RX/TX) For half duplex RS485
RS485/RS422 RX/TX B	2	
RS485/RS422 TX A	3	(TX) For full duplex RS485/RS422
RS485/RS422 TX B	4	

## Install the Hardware

### Mount the video encoder

The AXIS P7216 is supplied with a mounting kit containing brackets. The unit can be mounted in a rack or on a wall.

After removing the existing 4 screws, attach the mounting brackets to the video encoder at an angle suitable for installation in a standard 1U 19" rack, or on the wall.

#### Mounting on a wall

1. Position the video encoder against the wall with the brackets attached, and mark the four mounting holes for each bracket.
2. Drill the four mounting holes.
3. Attach the video encoder to the wall using appropriate screws.

## Connect the cables

1. Connect the video encoder to the network using a network cable RJ45 and/or a SFP cable.
2. Optionally connect the external input/output devices.
3. Optionally connect active speakers and/or external microphones.
4. Connect the cameras to the video inputs.
5. Connect the supplied indoor power adapter.
6. Check that the indicator LEDs indicate the correct conditions. See *LED Indicators*, on page 8

## Auxiliary Connector

The AXIS P7216 is equipped with an additional RJ45 network connector. The purpose with this connector is to simplify maintenance work on the AXIS P7216 that requires connection to a computer.

### Note

The auxiliary connector should only be connected during maintenance work.

## Access the Product

Use the tools provided on the Installation and Management Software CD to assign an IP address, set the password and access the video stream. This information is also available from the support pages on [www.axis.com/techsup/](http://www.axis.com/techsup/)

## Reset to Factory Default Settings

### Important

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

To reset the product to the factory default settings:

### Note

To reset a single channel to the original factory default settings, use the button provided in that unit's web interface.

It is also possible to reset parameters to factory default via the web interface. Go to **Setup > System Options > Maintenance**.

## Further Information

The User Manual is available at [www.axis.com](http://www.axis.com)

Visit [www.axis.com/techsup](http://www.axis.com/techsup) to check if there is updated firmware available for your network product. To see the currently installed firmware version, go to **Setup > About**.

Visit Axis learning center [www.axis.com/academy](http://www.axis.com/academy) for useful trainings, webinars, tutorials and guides.

## Warranty Information

For information about Axis' product warranty and thereto related information, see [www.axis.com/warranty/](http://www.axis.com/warranty/)

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AXIS P7216 Video Encoder  
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