

AXIS Q1659 Network Camera

ENGLISH

Installation Guide

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

Every care has been taken in the preparation of this document. Please inform your local Axis office of any inaccuracies or omissions. Axis Communications AB cannot be held responsible for any technical or typographical errors and reserves the right to make changes to the product and manuals without prior notice. Axis Communications AB makes no warranty of any kind with regard to the material contained within this document, including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose. Axis Communications AB shall not be liable nor responsible for incidental or consequential damages in connection with the furnishing, performance or use of this material. This product is only to be used for its intended purpose.

Intellectual property rights

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 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 www.opensource.apple.com/aps/). The source code is available from <https://developer.apple.com/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.

Trademark acknowledgments

AXIS COMMUNICATIONS, AXIS, ETRAX, ARTPEC and VAPIX are registered trademarks or trademark applications of Axis AB in various jurisdictions. All other company names and products are trademarks or registered trademarks of their respective companies.

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SD, SDHC and SDXC are trademarks or registered trademarks of SD-3C, LLC in the United States, other countries or both. Also, miniSD, microSD, miniSDHC, microSDHC, microSDXC are all trademarks or registered trademarks of SD-3C, LLC in the United States, other countries or both.

Regulatory information

Europe

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

- Electromagnetic Compatibility (EMC) Directive 2014/30/EU. See *Electromagnetic compatibility (EMC)* on page 2.
- Low Voltage (LVD) Directive 2014/35/EU. 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 A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense. The product shall be connected using a shielded network cable (STP) that is properly grounded.

Canada

This digital apparatus complies with CAN ICES-3 (Class A). The product shall be connected using a shielded network cable (STP) that is properly grounded. Cet appareil numérique est conforme à la norme NMB ICES-3 (classe A). Le produit doit être connecté à l'aide d'un câble réseau blindé (STP) qui est correctement mis à la terre.

Europe

This digital equipment fulfills the requirements for RF emission according to the Class A limit of EN 55032. The product shall be connected using a shielded network cable (STP) that is properly grounded. Notice! This is a Class A product. In a domestic environment this product may cause RF interference, in which case the user may be required to take adequate measures.

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.

This product fulfills the requirements for immunity according to EN 55024 office and commercial environments.

Australia/New Zealand

This digital equipment fulfills the requirements for RF emission according to the Class A limit of AS/NZS CISPR 32.

The product shall be connected using a shielded network cable (STP) that is properly grounded. Notice! This is a Class A product. In a domestic environment this product may cause RF interference, in which case the user may be required to take adequate measures.

Japan

この装置は、クラスA 情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。本製品は、シールドネットワークケーブル(STP)を使用して接続してください。また適切に接地してください。

Korea

이 기기는 업무용(A급) 전자파적합기기로서 판매자 또는 사용자는 이 점을 주의하시기 바라며, 가정외의 지역에서 사용하는 것을 목적으로 합니다. 적절히 접지된 STP (shielded twisted pair) 케이블을 사용하여 제품을 연결 하십시오.

Safety

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

If its connecting cables are routed outdoors, the product shall be grounded either through a shielded network cable (STP) or other appropriate method.

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 SJ/T 11364-2014, Marking for the restriction of hazardous substances in electrical and electronic products.

Contact information

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Sweden

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Fax: +46 46 13 61 30

www.axis.com

Warranty information

For information about Axis' product warranty and thereto related information, go to www.axis.com/warranty/

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
- visit Axis Support at www.axis.com/techsup/

Learn more!

Visit Axis learning center www.axis.com/academy/ for useful trainings, webinars, tutorials and guides.

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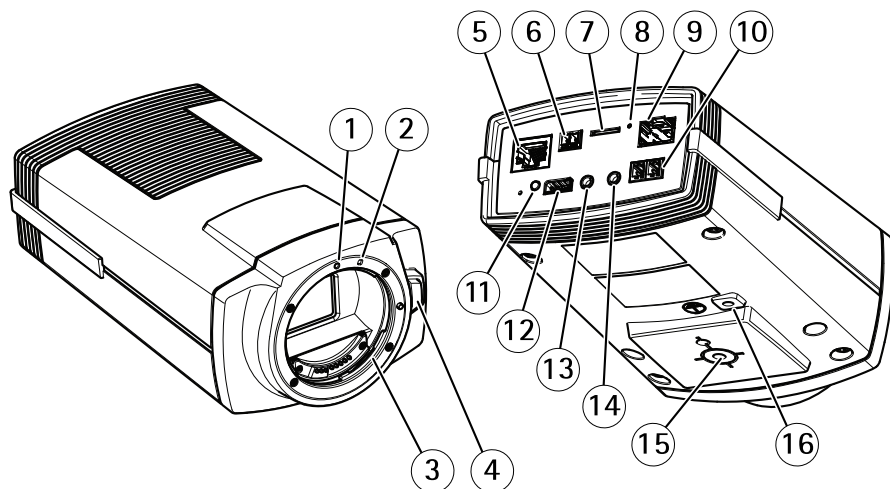
Package contents

- AXIS Q1659 Network Camera (with body cap)
- 2-pin connector block for power input
- 4-pin I/O connector block for connecting external devices
- 2-pin RS485/422 connector block (x2)
- Printed materials
 - Installation Guide (this document)
 - Extra serial number label (x2)

Hardware overview

For specifications of the hardware components, see *Technical specifications* on page 13.

Product overview



- 1 EF lens mount index
- 2 EF-S lens mount index
- 3 EF mount
- 4 Unlock button
- 5 Network connector (PoE)
- 6 Power connector (DC input)
- 7 microSD Card slot
- 8 Status LED
- 9 Network connector (SFP)

- 10 *RS485/RS422 connector*
- 11 *Control button*
- 12 *I/O connector*
- 13 *Audio in*
- 14 *Audio out*
- 15 *Camera mount*
- 16 *Grounding screw*

How to install the product

Install the hardware

NOTICE

Due to local regulations or the environmental and electrical conditions in which the product is to be used, a shielded network cable (STP) may be appropriate or required. Any network cables that are routed outdoors or in demanding electrical environments shall be shielded (STP) and intended for their specific use.

NOTICE

Avoid mounting the camera towards the sun, this may cause damage to the lens and sensor.

Important

Mount the camera securely to avoid vibrations which will cause blurry video.

1. Mount the EF/EF-S lens on the camera body, see *How to mount the lens on page 8*.
2. Optionally connect external input/output devices, such as alarm devices. See *Connectors on page 14* for information on the terminal connector pins.
3. Optionally connect an active speaker and/or external microphone.
4. Connect the camera to the network using a shielded network cable (RJ45) or by using a SFP network module, see *page 10*.
5. Connect power, using one of the methods listed below:
 - PoE+ (Power over Ethernet, IEEE 802.3at Type 2). PoE+ is automatically detected when the network cable is connected.
 - Connect an external power adapter to the power connector block. See *Connectors on page 14*.
6. Check that the status LED indicate the correct condition. See for more details. Note that the Status LED can be configured to be unlit during normal operation.
7. Optionally insert a microSD card (not included) into the SD card slot.

NOTICE

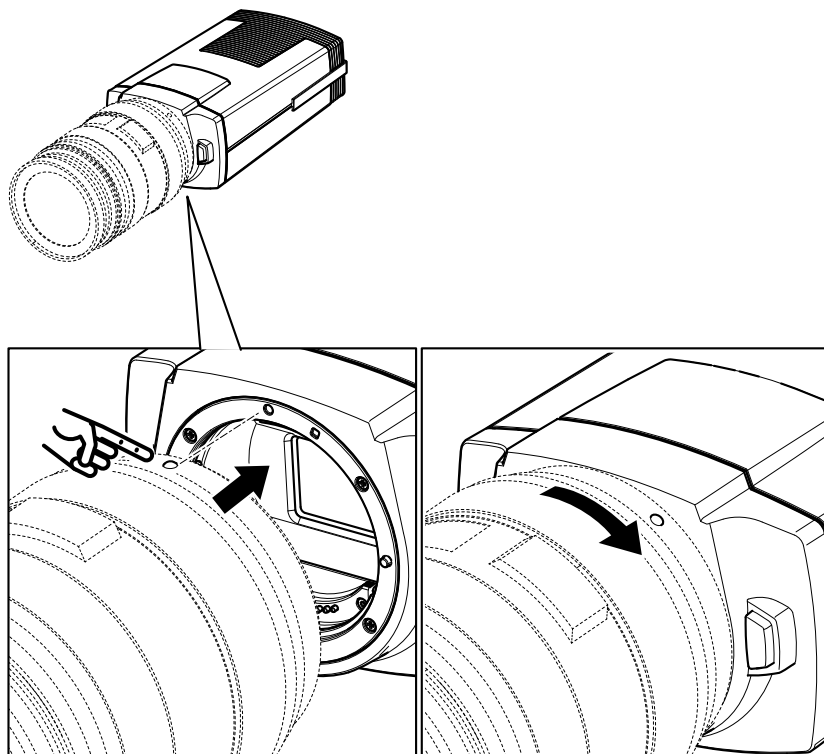
To prevent corruption of recordings, the SD card should be unmounted before it is ejected.

8. To properly ground the product, connect a grounding wire to the grounding screw positioned near the cameras screw plate, see *Hardware overview on page 6*
9. Fasten the camera to a wall mount or a holder.

How to mount the lens

NOTICE

For more details on compatible lenses, see www.axis.com.



1. Remove the rear lens cap and the body cap.
2. Mount the lens by aligning the lens' red or white mount index with the camera's mount index of the same color.
3. Set the lens's focus mode switch to **AF** (autofocus).
4. Remove the front lens cap.
5. Optionally, zoom the lens by turning the zoom ring on the lens with your fingers and lock the zoom position with the supplied elastic.

How to unmount the lens

1. Press the unlock button, see *Product overview on page 6*.
2. While pressing the unlock button turn the lens anti clockwise until it stops.
3. Remove the lens carefully.

Fiber network connectivity (optional)

This product features an SFP slot for optional fiber network connectivity. To connect to a network you need optional SFP modules. More information available at www.axis.com

About network redundancy

The software controls the network redundancy and requires that both network connectors (RJ45 or SFP) are connected. The SFP module has higher priority than the RJ45 connector. In case of a malfunction in the SFP connection the product switches to the RJ45 connector to establish a continued connection.

How to access the product

AXIS IP Utility and AXIS Camera Management are recommended methods for finding Axis products on the network and assigning them IP addresses in Windows®. Both applications are free and can be downloaded from www.axis.com/techsup

The product can be used with the following browsers:

- Chrome™ (recommended), Firefox®, Edge®, Opera® with Windows®
- Chrome™ (recommended), Safari® with OS X®
- Chrome™ or Firefox® with other operating systems.

For more information about using the product, see the User Manual available at www.axis.com

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.

Note

The installation and management software tools are available from the support pages on www.axis.com/techsup

To reset the product to the factory default settings:

1. Disconnect power from the product.
2. Press and hold the control button and reconnect power. See *Hardware overview on page 6*.
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. Using the installation and management software tools, assign an IP address, set the password, and access the video stream.
6. Refocus the product.

AXIS Q1659 Network Camera

Further information

- For the latest version of this document, see www.axis.com
- The user manual is available at www.axis.com
- To check if there is updated firmware available for your product, see www.axis.com/support
- For useful online trainings and webinars, see www.axis.com/academy

Optional accessories

For a complete list of available accessories for this product, go to www.axis.com

Technical specifications

You can find the latest version of the technical specifications at www.axis.com

LED indicators

Status LED	Indication
Green	Connection and normal operation.
Amber	Steady during startup. Flashes during firmware upgrade or reset to factory default.

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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. Disconnect power or unmount the SD card from the Axis product's webpages before removal.

This product supports microSD/microSDHC/microSDXC cards (not included).

For SD card recommendations, see www.axis.com

Buttons

Control Button

For location of the control button, see *Hardware overview on page 6*.

The control button is used for:

- Resetting the product to factory default settings. See *Reset to Factory Default Settings on page 11*.
- Connecting to an AXIS Video Hosting System service or AXIS Internet Dynamic DNS Service. For more information about these services, see the User Manual.

Connectors

Network connector

RJ45 Ethernet connector with Power over Ethernet (PoE).

NOTICE

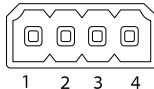
The product shall be connected using a shielded network cable (STP) or an optical fiber cable. All cables connecting the product to the network shall be intended for their specific use. Make sure that the network devices are installed in accordance with the manufacturer's instructions. For information about regulatory requirements, see *Electromagnetic compatibility (EMC) on page 2*.

I/O connector

Use with external devices in combination with, for example, tampering alarms, 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 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** – 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**).

4-pin terminal block

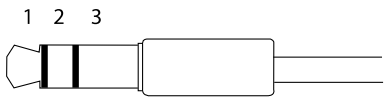


Audio connector

The Axis product has the following audio connectors:

- **Audio in (pink)** – 3.5 mm input for a mono microphone, or a line-in mono 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.

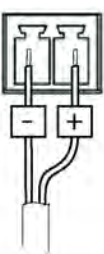
3.5 mm audio connectors (stereo)



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

Power connector

2-pin terminal block for DC power input. Use a Safety Extra Low Voltage (SELV) compliant limited power source (LPS) with either a rated output power limited to ≤ 100 W or a rated output current limited to ≤ 5 A.



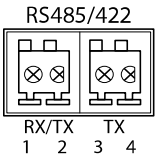
Power supply	20–28 V DC, max 15.8 W
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RS485/RS422 connector

Two 2-pin terminal blocks for RS485/RS422 serial interface used to control auxiliary equipment such as pan-tilt devices.

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



AXIS Q1659 Network Camera

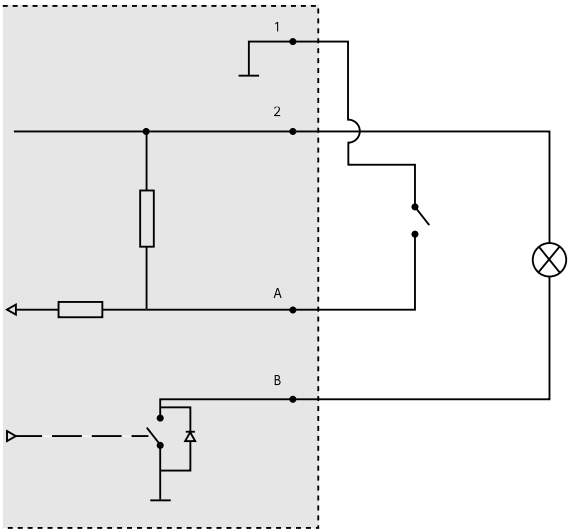
Function	Pin	Notes
RS485B alt RS485/422 RX(B)	1	RX pair for all modes (combined RX/TX for 2-wire RS485)
RS485A alt RS485/422 RX(A)	2	
RS485/RS422 TX(B)	3	TX pair for RS422 and 4-wire RS485
RS485/RS422 TX(A)	4	

Important

The recommended maximum cable length is 30 m (98.4 ft).

Connection Diagrams

I/O Connector



- 1 0 V DC (-)
- 2 DC output 12 V, max 50 mA
- A I/O configured as input
- B I/O configured as output

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.
- For optimal performance, use a Category 5 or better shielded network cable (STP).
- 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 shocks or heavy pressure.
- Do not install the product on unstable poles, brackets, surfaces or walls.
- Use only applicable tools when installing the Axis product. Using excessive force with power tools could cause damage to the product.
- Do not use chemicals, caustic agents, or aerosol cleaners.
- Use a clean cloth dampened with pure water for cleaning.
- Use only accessories that comply with the technical specification of the product. These can be provided by Axis or a third party. We recommend you to use Axis midspans and switches if compatible with your product.
- Use only spare parts provided by or recommended by Axis.
- Do not attempt to repair the product yourself. Contact Axis support or your Axis reseller for service matters.
- Do not point the camera lens toward the sun or other high-intensity radiation sources because this could cause damage to the camera.
- The power supply shall be plugged in to a socket outlet installed near the product and shall be easily accessible.
- 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.

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 BR2330 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. When the battery needs replacing, a log message will appear in the product's server report. For more information about the server report, see the product's setup pages or contact Axis support.

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

Lithium coin cell 3.0 V batteries contain 1,2-dimethoxyethane; ethylene glycol dimethyl ether (EGDME), CAS no. 110-71-4.

⚠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.

