

INSTALLATION GUIDE

AXIS Q8721-E Dual PTZ Network Camera

ENGLISH

Legal Considerations

Video and audio surveillance can be prohibited 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 two (1) H.264 decoder licenses. To purchase further licenses, contact your reseller.

Trademark Acknowledgments

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Electromagnetic Compatibility (EMC)

This equipment, configured with designated power supply and IR illuminators (sold separately), 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 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.

Canada – This Class A digital apparatus complies with Canadian ICES-003.

Europe –  This digital equipment fulfills the requirements for RF emission according to the Class A limit of EN 55022. Caution! 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-industry 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 – This digital equipment fulfills the requirements for RF emission according to the Class A limit of AS/NZS CISPR 22. 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.

Safety

This product complies with EN/IEC 60950-1 and EN/IEC 60950-22, Safety of Information Technology Equipment.

Photobiological Safety

This product, configured with IR illuminators (sold separately), fulfills the requirements for photobiological safety according to EN 62471 (risk group 1).

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.

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 documentation 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.

RoHS

This product complies with both the European RoHS directive, 2002/95/EC, and the Chinese RoHS regulations, ACPEIP.



WEEE Directive

The European Union has enacted a Directive 2002/96/EC on Waste Electrical and Electronic Equipment (WEEE Directive). This directive is applicable in the European Union member states.



The WEEE marking on this product (see right) or its documentation indicates that the product must not be disposed of together with household waste. To prevent possible harm to human health and/or the environment, the product must be disposed of in an approved and environmentally safe recycling process. For further information on how to dispose of this product correctly, contact the product supplier, or the local authority responsible for waste disposal in your area.

Business users should contact the product supplier for information on how to dispose of this product correctly. This product should not be mixed with other commercial waste.

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 firmware updates
- find answers to resolved problems in the FAQ database. Search by product, category, or phrases
- report problems to Axis support by logging in to your private support area

Safeguards

Please read through this Installation Guide carefully before installing the product. Keep the Installation Guide for further reference.

⚠ CAUTION

- Risk of pinching. Do not touch the product while it is moving.

NOTICE

- Store the Axis product in a dry and ventilated environment.
- Avoid exposing the Axis product to vibration, shocks or heavy pressure and do not install the product on unstable brackets, unstable or vibrating surfaces or walls, since this could cause damage to the product.
- Only use applicable tools when installing the Axis product; excessive force could cause damage to the product.
- Do not aim the thermal camera lens toward the sun or other high-intensity radiation sources since this could cause damage to the sensor.
- Do not use chemicals, caustic agents, or aerosol cleaners. Use a damp cloth for cleaning.
- Only use accessories that comply with the 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 or your Axis reseller for service matters.

Important

- This Axis product shall be used in compliance with local laws and regulations.
- Do not install the camera near heat sources since fluctuating temperatures may affect thermal image quality.
- The Axis product should be installed by a trained professional. Please observe relevant national and local regulations for the installation.

Transportation

NOTICE

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

Battery Replacement

This 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 5 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!

If the battery does need replacing, please contact www.axis.com/techsup for assistance.

⚠ WARNING

- Dispose of used batteries according to the manufacturer's instructions.

NOTICE

- Risk of explosion if battery is incorrectly replaced.
- Replace only with the same or equivalent battery, as recommended by the manufacturer.

AXIS Q8721-E Installation Guide

This Installation Guide provides instructions for installing an AXIS Q8721-E Dual PTZ Network Camera on your network. For all other aspects of using the product, please see the User Manuals, available at www.axis.com

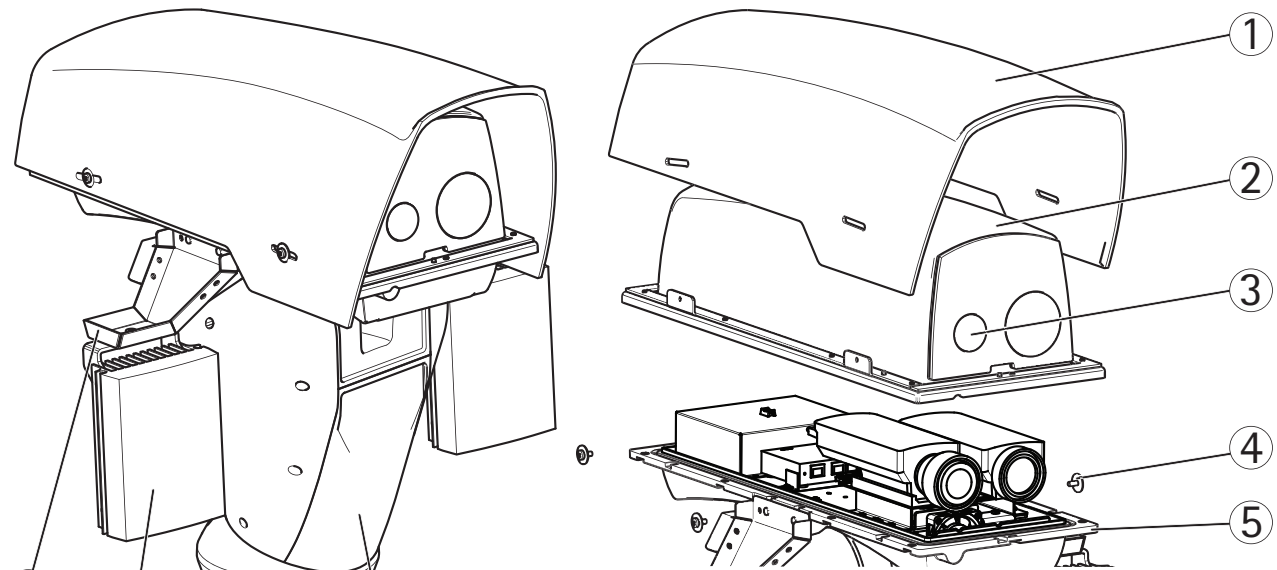
Installation Steps

1. Check the package contents against the list below.
2. Hardware overview. See page 6.
3. Install the hardware.
 - Install the Power Supply (sold separately), see page 7.
 - Install the Bracket (sold separately), see page 8.
 - Attach the Base to the Bracket, see page 10.
 - Attach the Dual PTZ Network Camera to the Base, see page 13.
 - Install the Illuminators (sold separately), see page 16.
 - Install the Counterweights, see page 14.
4. Configuration. See page 17.
5. Access the Video Stream. See page 18.

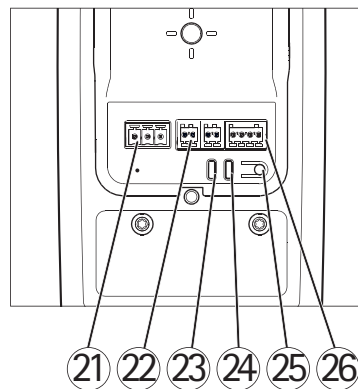
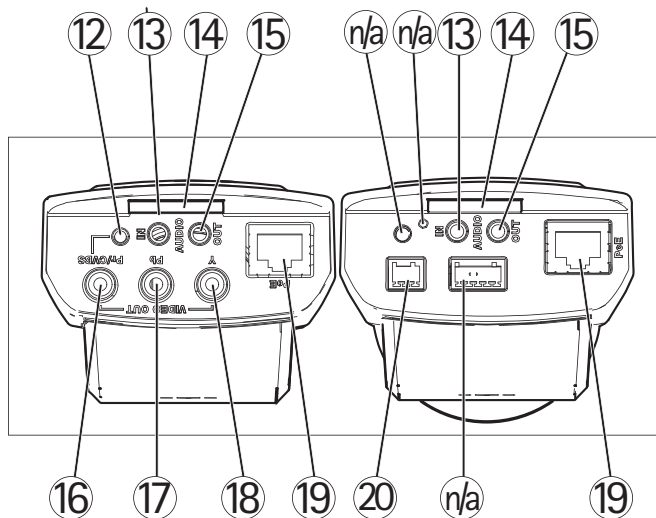
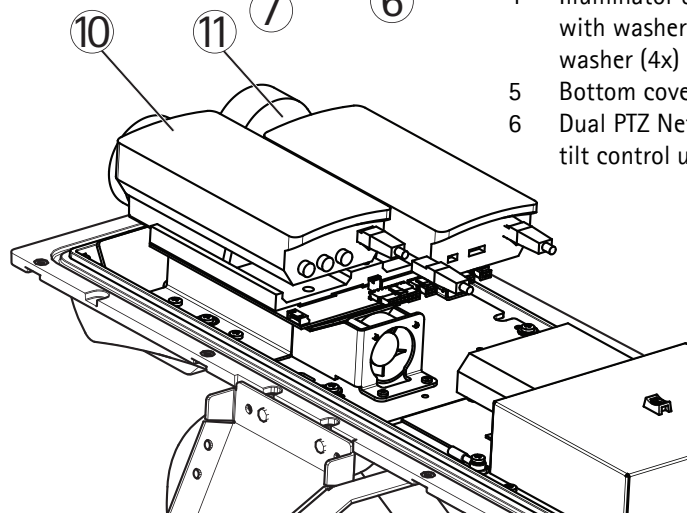
1 Package Contents

Item	Models/variants/notes
Dual PTZ network camera	AXIS Q8721-E, includes AXIS Q1755 and AXIS Q1921 Pan/tilt control unit and motor Sunshield
Base	Base for dual PTZ network camera
Counterweights	Counterweights for balancing pan/tilt control unit (when not using illuminators)
Mounting accessories	Sunshield mounting kit Base mounting kit
CD	Installation and Management Software CD
Printed materials	AXIS Q8721-E Installation Guide (this document) Axis Warranty Document Extra serial number labels (2x)
Required accessories	Power supply (230 V/120 V) with built-in day/night sensor (sold separately) Wall bracket or column bracket (sold separately)
Optional accessories	Corner mount, pole mount IR Illuminators Axis Installation Display See www.axis.com for information on available accessories
Tools needed (not included)	RJ45 crimp tool Allen key set Ratchet set Drill for drilling holes in mounting surface Loctite 243® threadlocker

2 Hardware Overview



- | | |
|---|---------------------------------|
| 1 Sunshield | 7 Base |
| 2 Top cover | 8 Illuminator (sold separately) |
| 3 Protective window | 9 Illuminator bracket |
| 4 Illuminator bracket screw with washer (4x) and lock washer (4x) | 10 Network camera |
| 5 Bottom cover | 11 Thermal network camera |
| 6 Dual PTZ Network camera (pan/tilt control unit and motor) | 12 CVBS button |
| | 13 Audio in |
| | 14 SD card slot |
| | 15 Audio out |
| | 16 Video out Pr/CVBS |
| | 17 Video out Pb |
| | 18 Video out Y |
| | 19 Network connector |
| | 20 Window heater connector |
| | 21 Power connector |
| | 22 RS-485/422 connector |
| | 23 Power LED |
| | 24 Network LED |
| | 25 Control button |
| | 26 I/O connector |
| | n/a Not used |



3 Install the Hardware

For information on the cameras' connectors, LED behaviors etc., see the respective User Manuals.

Install the Power Supply (sold separately)

⚠ WARNING

The mains supply shall be disconnected during installation.

NOTICE

The power supply specified with the product shall be used. Using any other power supply will void the warranty and could leave the unit at a risk.

Important

The day/night sensor is attached to the power supply (sold separately). If using the day/night sensor, place the power supply so that the sensor can track the changes in daylight.

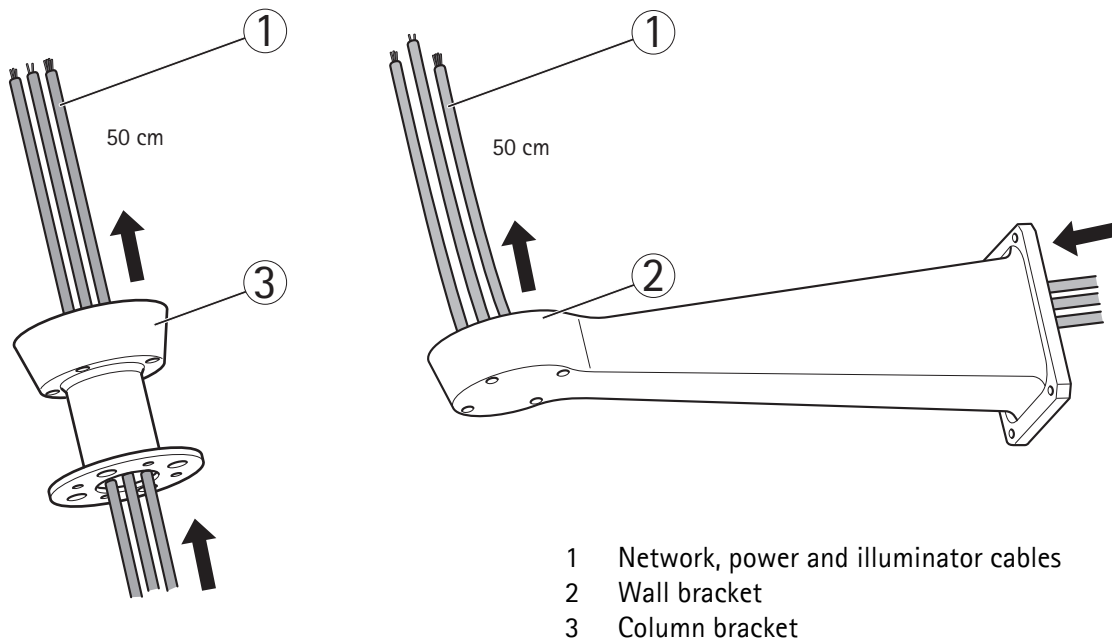
1. Install the power supply according to the instructions supplied with the power supply.

Install the Bracket (sold separately)

1. Prepare a wall, parapet or pole for installation of the selected bracket (sold separately). See www.axis.com for information on available mounting accessories.
2. Route the network, power and, if applicable, illuminator cables through the bracket. Leave approximately 50 cm (11.8") of cable for connecting the base.

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 in outdoor environments or similar shall be shielded (STP) and intended for their specific use. Make sure that the network switch is properly grounded. See *Electromagnetic Compatibility (EMC)* for regulatory requirements.

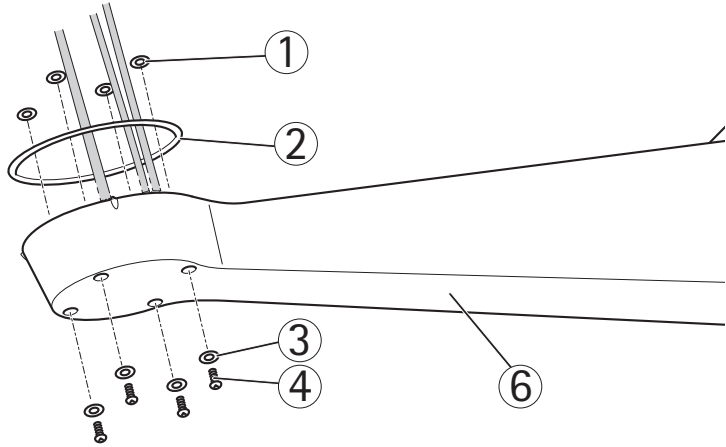
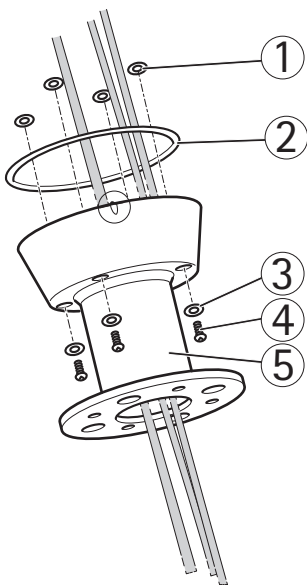


3. Install the selected bracket. Make sure that the screws and plugs are appropriate for the material (e.g. wood, metal, sheet rock, stone). Make sure that the bracket is secured properly and that the material is strong enough to support a weight of 35 kg (77.2 lb.).

Important

- Assemble the product in an upright position. Do not install the product upside down.
- When attaching the bracket to a concrete surface, use dowel pins with a traction torque rating of ≥ 300 dN.
- When attaching the bracket to a metal surface, use screws with a diameter of at least 8 mm.

4. Assemble the screws, washers and screw seals.
5. Put the seal in its position.



- | | | | |
|---|-----------------|---|----------------|
| 1 | Screw seal (4x) | 4 | Screw (4x) |
| 2 | Seal | 5 | Column bracket |
| 3 | Washer (4x) | 6 | Wall bracket |

Attach the Base to the Bracket

1. Remove the desiccant bag, which is placed in the base.
2. Make sure the seal is in position.
3. Route the network, power and, if applicable, illuminator cables through their respective cable glands in the base.

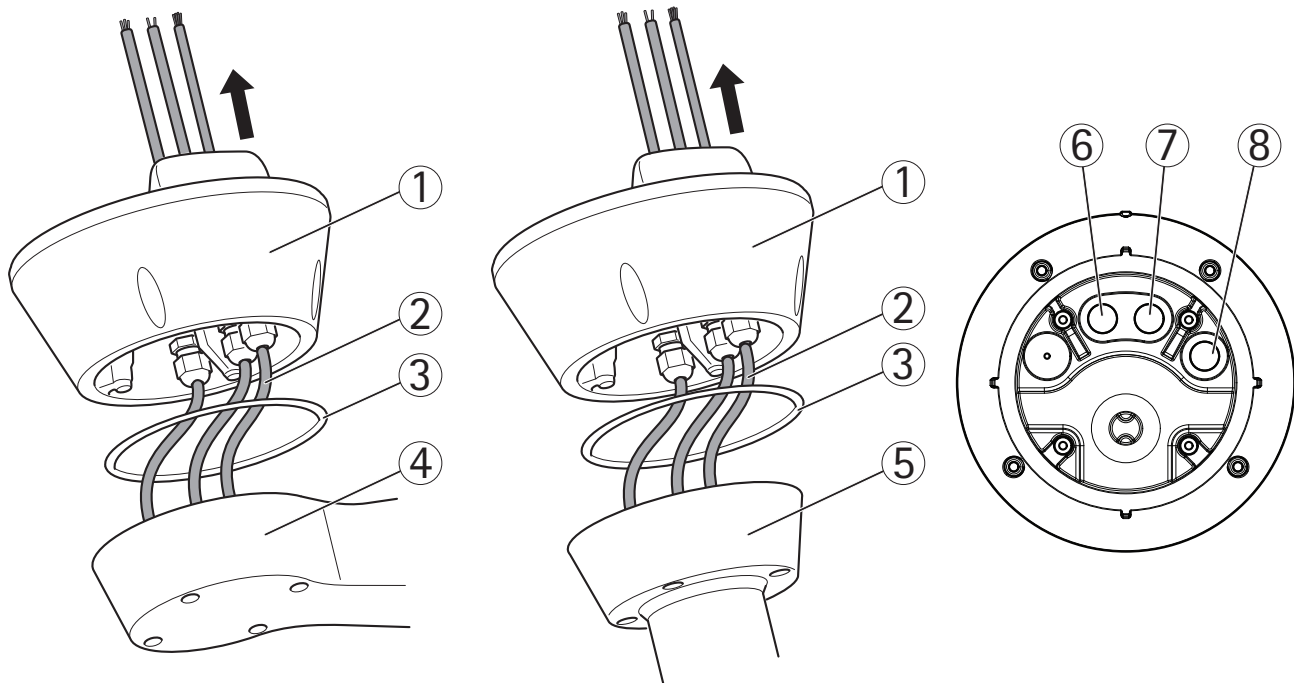
Important

The cable glands are suitable for cables with a diameter of 5 mm - 10 mm. For cables with a diameter 3 mm - 7 mm, use the supplied spare gaskets.

4. Screw the cable gland caps on firmly.

NOTICE

It is important to tighten the cable gland caps in order to maintain the products IP rating.



- | | | | |
|---|---------------------------------------|---|-----------------------|
| 1 | Base | 5 | Column bracket |
| 2 | Network, power and illuminator cables | 6 | Power cable (24 V AC) |
| 3 | Seal | 7 | Illuminator cable |
| 4 | Wall bracket | 8 | Network cable |

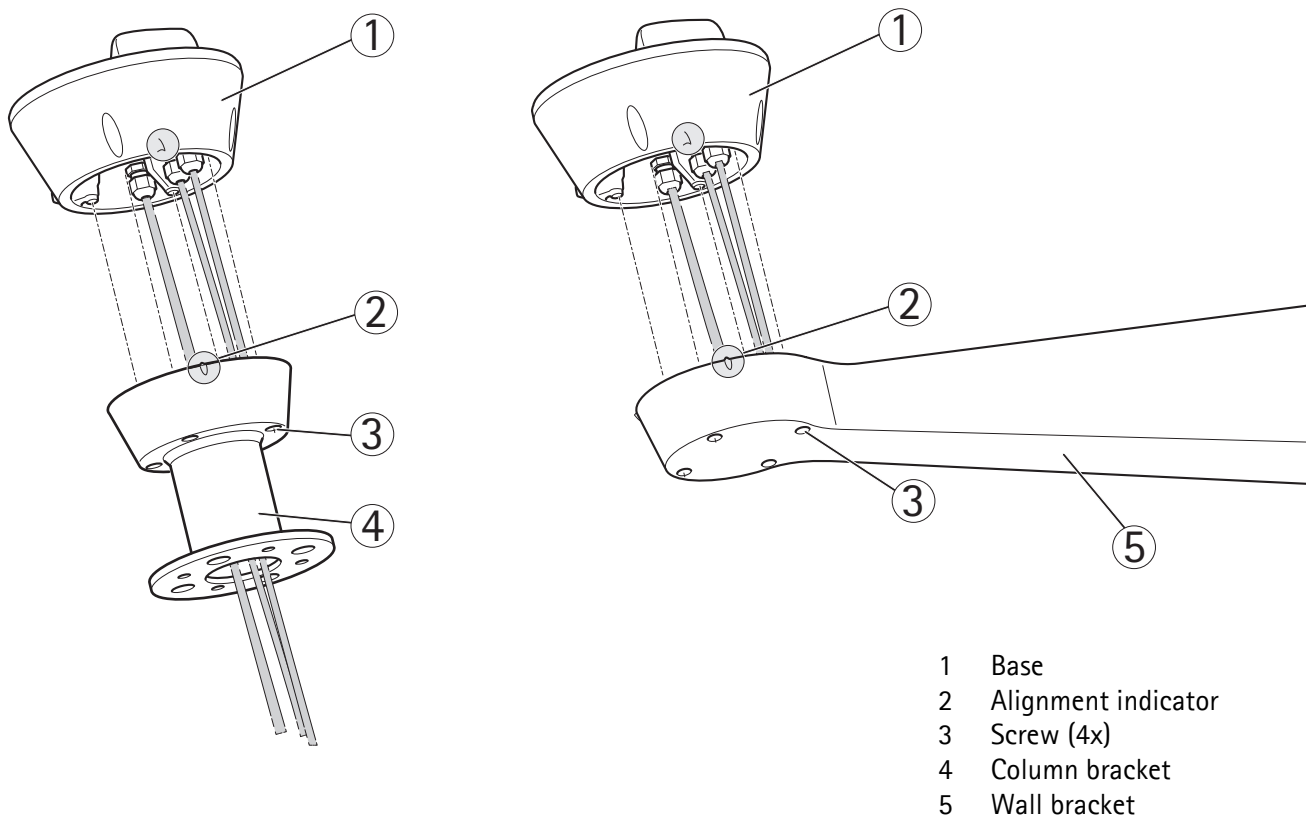
5. Attach the base to the bracket and tighten the screws (torque 4 Nm).

NOTICE

Apply Loctite 243® threadlocker on the screws.

Important

The base can be attached to the bracket in four different positions. Use the alignment indicators on the different units to find a suitable position that allows access to the configuration board, which can be opened for easy access to the network connector, see illustration on page 11. This is useful for troubleshooting or for connecting an Axis installation display. The dip switches are configured with the correct PTZ protocol in the factory and do not need to be changed.

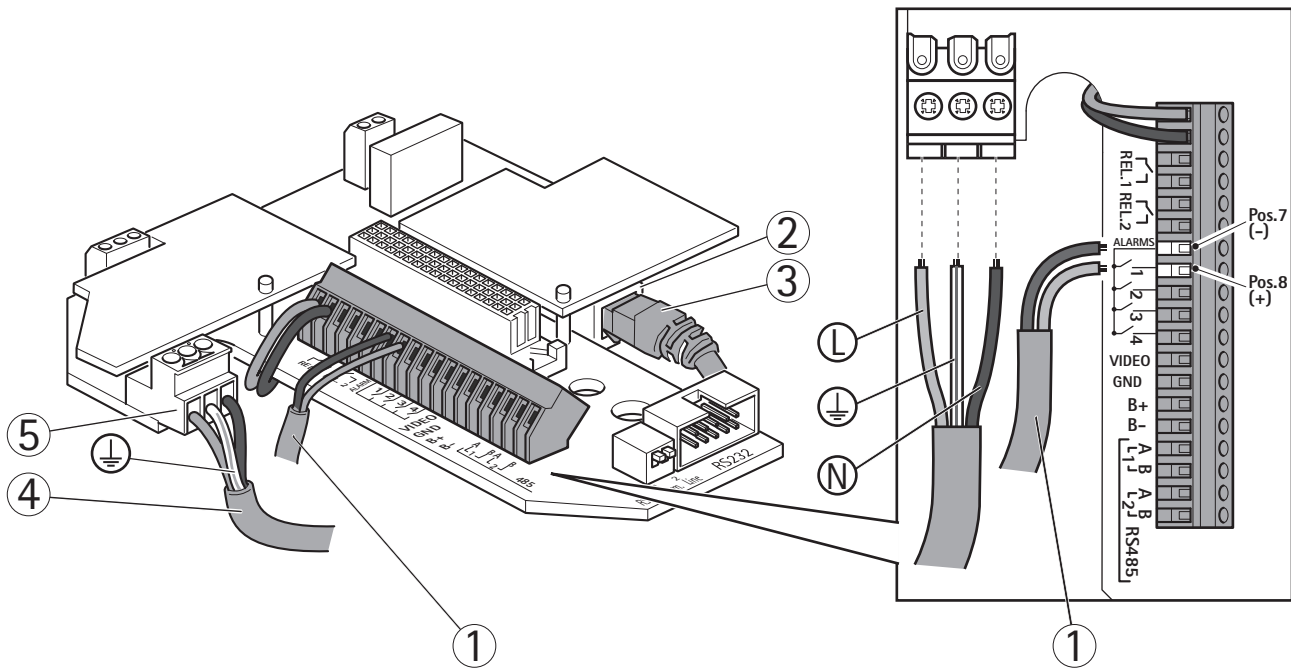


6. If applicable, connect the illuminator cable to the connector (ALARMS and 1) on the base.
7. Using a RJ45 crimp tool, strip and crimp the network cable according to the manufacturer's instructions.
8. Connect the network cable to the network connector on the base.

NOTICE

The power supply specified with the product shall be used. Using any other power supply will void the warranty and could leave the unit at a risk.

9. Connect the 24 V AC power cable to the power connector on the base. Make sure the green/yellow ground wire is connected to the middle pin. To make the installation easier, it is possible to remove the connector from the circuit board and mount it when the cables are correctly connected.



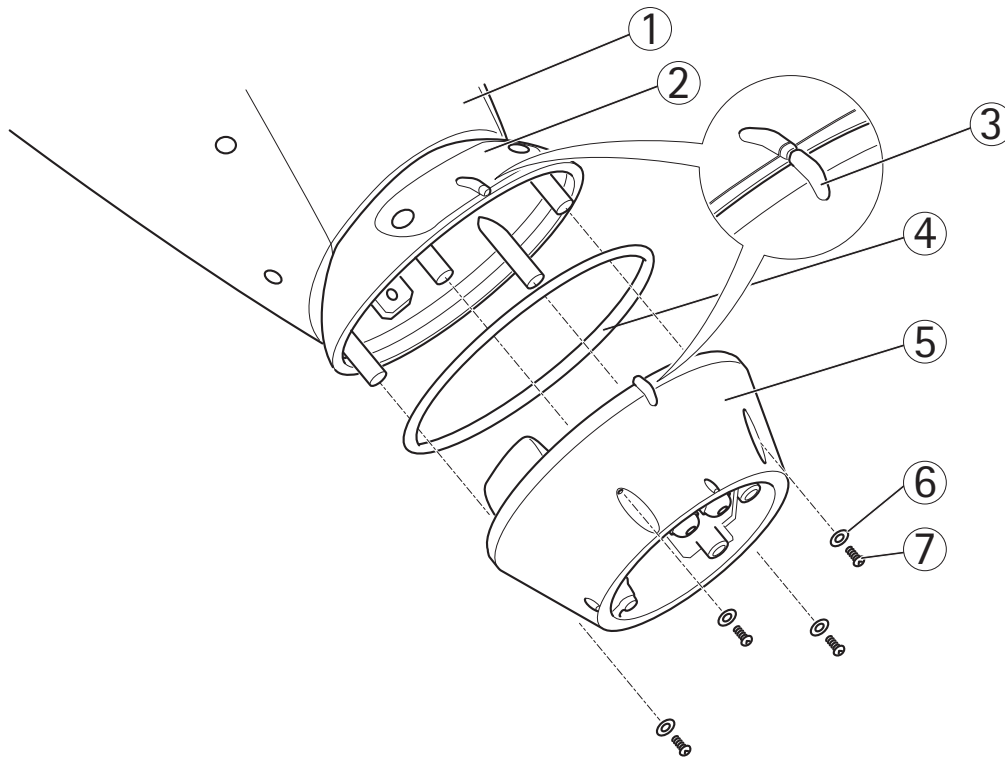
- | | | | |
|---|-------------------|---|---|
| 1 | Illuminator cable | 4 | Power cable (24 V AC, blue – L, green/yellow – \perp , brown – N) |
| 2 | Network connector | 5 | Power connector (24 V AC) |
| 3 | Network cable | | |

Attach the Dual PTZ Network Camera to the Base

1. Make sure the seal is in position.
2. Remove the sunshield, which is placed on but not attached to, from the top cover.
3. Attach the Pan/Tilt control unit, motor and camera assembly to the base and tighten the screws (torque 4 Nm).

NOTICE

Use the alignment indicators to align the units. Incorrect alignment could cause damage to components.



- | | | | |
|---|--|---|-------------|
| 1 | Pan/Tilt control unit, motor and camera assembly | 4 | Seal |
| 2 | Configuration board lid | 5 | Base |
| 3 | Alignment indicators | 6 | Washer (4x) |
| | | 7 | Screw (4x) |

4. Aim the dual PTZ network camera to the point of interest and focus the thermal network camera if required, see *Focus Adjustment - AXIS Q1921*, on page 18. See *Access the Video Stream*, on page 18 and the Installation and Management Software CD for information on how to view the video stream.
5. Install the counterweights, see *Install the Counterweights*, on page 14 or install the selected illuminators (sold separately), see page 16. Infrared LED Illuminators are available as accessories, see www.axis.com for information of available illuminators.

NOTICE

Either counterweights or illuminators shall be installed. Any other installation method will void the warranty and could leave the unit at a risk

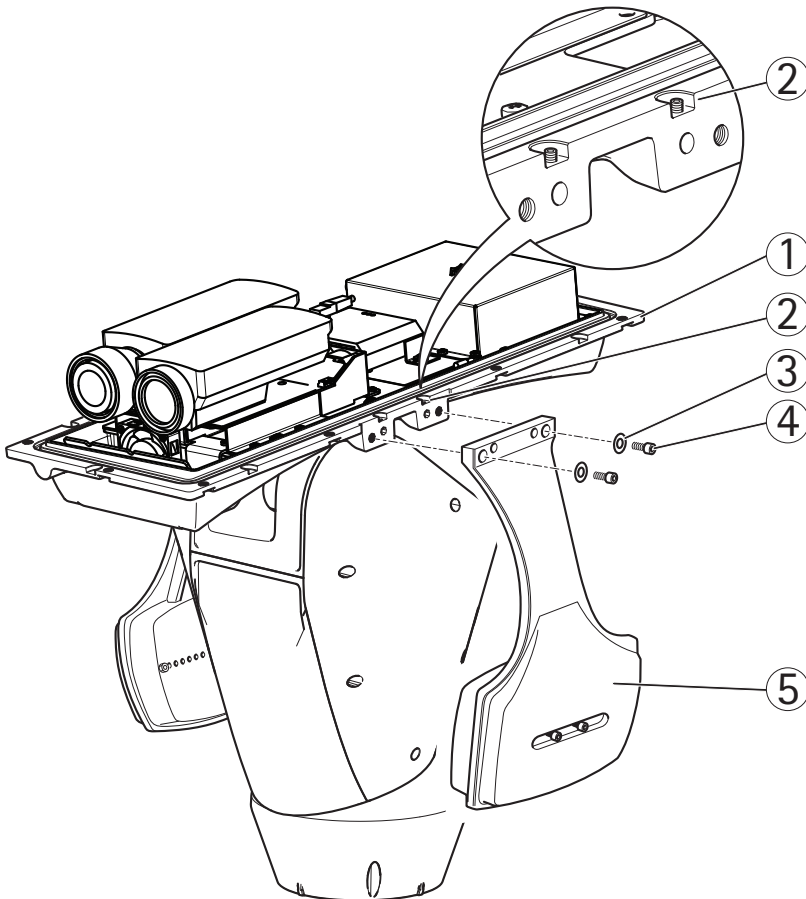
Install the Counterweights

1. Unscrew the bottom cover screws and remove the top cover, see illustration on page 15.
2. Attach the counterweights to the bottom cover using the supplied screws and washers (torque 4 Nm).

NOTICE

Apply Loctite 243® threadlocker on the screws.

3. Secure the counterweights using the supplied grub screws (torque 4 Nm).

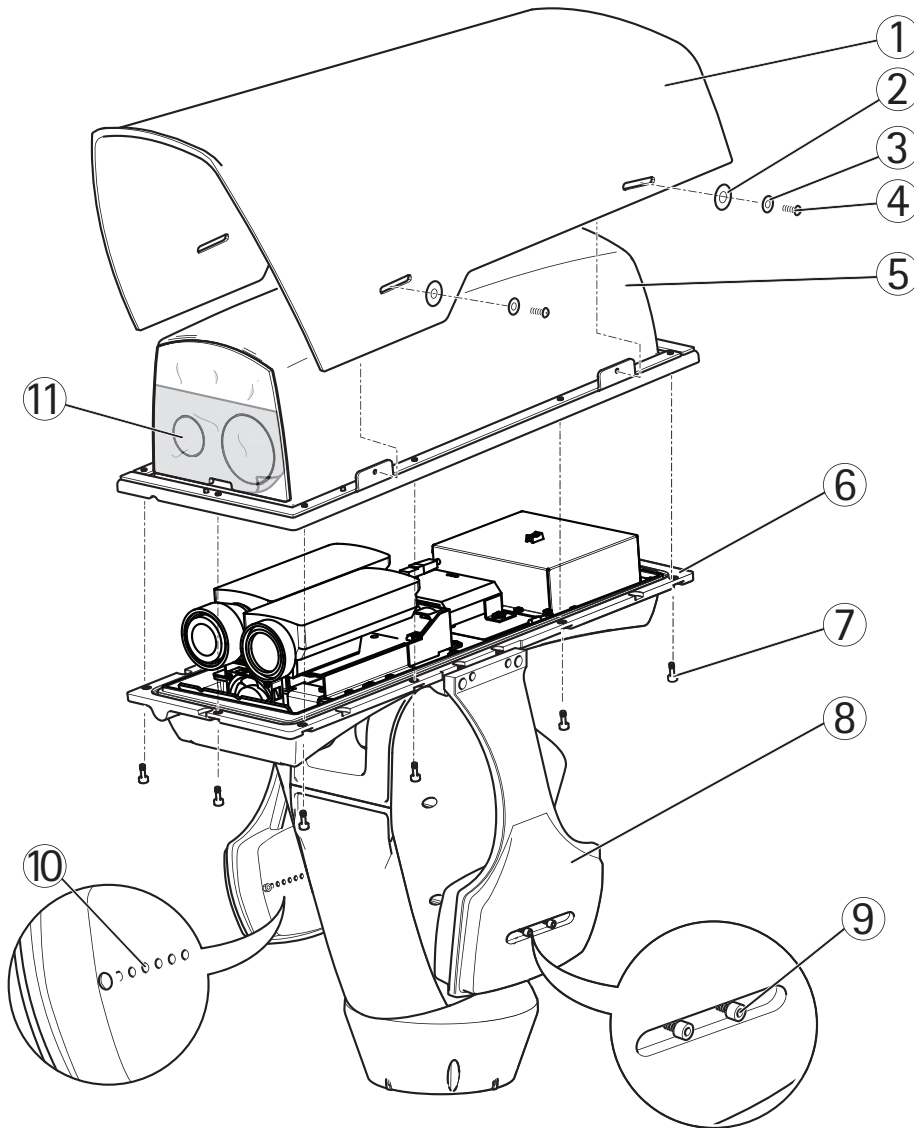


- 1 Bottom cover
- 2 Grub screw (4x)
- 3 Washer (4x)
- 4 Screw (4x)
- 5 Counterweight (2x)

4. Attach the top cover to the bottom cover. Make sure to tighten diagonally opposite bottom cover screws a few turns at a time until all are tight (torque 4 Nm). This will help ensure that the bottom cover gasket is compressed evenly.
5. Attach the sunshield to the top cover.
6. Loosen the counterweight locking screws and adjust the position of the weights to the desired position. The positions of the weights must be identical.

Note:The pan/tilt assembly must remain balanced for the pan/tilt function to operate correctly. Check the balance by swinging the housing slightly.

7. Remove the protective plastic from the protective window.



- | | |
|------------------------|--------------------------------|
| 1 Sunshield | 7 Bottom cover screw (10x) |
| 2 Washer (4x) | 8 Counterweight |
| 3 Lock washer (4x) | 9 Counterweight locking screws |
| 4 Sunshield screw (4x) | 10 Positioning holes |
| 5 Top cover | 11 Protective plastic |
| 6 Bottom cover | |

8. Switch on the mains supply. The pan/tilt control unit will start turning and the cameras will turn on approximately 30 seconds later. In cold temperatures, there might be a delay due to the de-icing process, see *Day/Night Sensor*, on page 17.

⚠ CAUTION

Risk of pinching. Do not touch the product while it is moving.

Install the Illuminators (sold separately)

See the Installation Guide provided with the illuminators for instructions on how to install the illuminators (sold separately).

Composite Video (Optional AXIS Q1755)

For information how to connect composite video in/out, see AXIS Q1755 User Manual.

4 Configuration

For information about how to assign an IP address and gain access to the product, see *Access the Video Stream*, on page 18 and the Installation and Management Software CD.

PTZ

The PTZ functionality is controlled through the network camera. The PTZ controls will be available from the Live View page in the network camera's web pages after enabling the PTZ functionality. See the User Manual, available at www.axis.com

Day/Night Sensor

The day/night sensor is attached to the power supply (sold separately).

The product is configured in the factory for optimal performance in a range of conditions. However, settings can be adjusted to suit specific conditions on site.

To adjust the sensitivity of the day/night sensor, turn the potentiometer until it reaches the desired threshold. Turn the potentiometer clockwise to increase the threshold and advance the switch to night mode. Turn the potentiometer counterclockwise to decrease the threshold and delay the switch to night mode. The switch to night mode will activate the illuminators (sold separately).

De-icing

The product's automatic de-icing process starts when the air temperature is below 0 °C (32 °F) required that the product is switched on. The de-icing process ensures that the product works properly even at low temperatures. The de-icing period lasts 90 minutes and during this period both cameras are turned off.

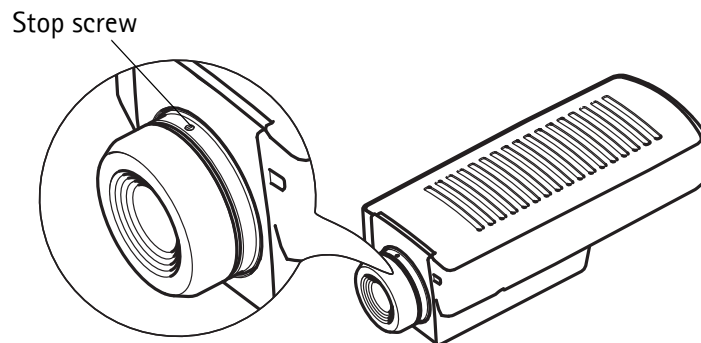
5 Access the Video Stream

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

Focus Adjustment - AXIS Q1921

If required, follow these instructions to focus the thermal network camera:

1. Unscrew the stop screw on the lens, using a slotted screwdriver 1.8 mm.



2. Focus the camera to the appropriate distance. See the table below for recommended focus distances for achieving optimal focus both for near focus and infinity.

Lens	10 mm	19 mm	35 mm	60 mm
Focus distance	2 m (6.6 ft.)	8 m (26.2 ft.)	22 m (72.2 ft.)	60 m (196.9 ft.)

3. Secure the stop screw.

Note

The network camera has a lens with autofocus and cannot be adjusted manually.

Resetting to the Factory Default Settings

This will reset all parameters, including the IP address, to the Factory Default settings:

1. Disconnect power from the camera.
2. Press and hold the control button and reconnect power.
3. Keep the control button pressed until the status indicator displays amber (this may take up to 15 seconds).
4. Release the control button. When the status indicator displays green (which can take up to 1 minute) the process is complete and the camera has been reset.
5. Re-assign the IP address, using one of the methods described in this document.

It is also possible to reset parameters to the original factory default settings via the web interface. For more information, please see the online help or the User Manual.

Troubleshooting

This table applies to the pan/tilt and illumination units only. For troubleshooting of the network cameras, see the respective User Manuals.

⚠ WARNING

Disconnect the mains supply before performing any kind of maintenance procedure.

The product is not running	Make sure all the connections are correct.
The product does not move	Make sure that the power supply cable is intact and connected correctly.
	The pan/tilt is disabled during the de-icing process, see <i>De-icing</i> , on page 17.
The product moves, but is unresponsive to commands	Check that the PTZ functionality is enabled, see <i>PTZ</i> , on page 17.
	Make sure that the RS-485 cable is intact and connected correctly.
The illuminators are not turning on when day changes into night.	Make sure all the connections are correct.
	Make sure the day/night sensor is positioned so it can track the changes in daylight.
	Adjust the potentiometer, see <i>Day/Night Sensor</i> , on page 17.

Technical Specifications

For technical specifications of the network cameras, see the respective User Manuals.

Function/group	Item	Specifications
Camera	Model	AXIS Q8721-E, includes AXIS Q1755 and AXIS Q1921
General	Pan/Tilt	Pan: 360° endless, 0.1° – 20°/s Tilt: +45° to -20°, 0.1° – 20°/s
	Protocol	Pelco D
	Preset accuracy	0.02°
	Casing	Aluminum casing, sunshield ABS PMMA IP66-rated Color: RAL 9002
	Power	AXIS Q8721-E: 24 V AC 50/60 Hz, 200 W provided by power supply (sold separately) 230/120 V AC 50/60 Hz with built-in day/night sensor
	Operating conditions	-30 °C to 45 °C (-22 °F to 113 °F) Humidity 150% – 100% RH (condensing)
	Approvals	EN 55022 Class A, EN 55024, EN 61000-6-1, EN 61000-6-2 FCC Part 15 Subpart B Class A demonstrated by compliance with EN 55022 ICES-003 Class A demonstrated by compliance with EN 55022 C-tick AS/NZS CISPR 22 demonstrated by compliance with EN 55022 EN 61000-3-2, EN 61000-3-3 EN 60950-1, EN 60950-22 IEC/EN 60529 IP66
	Weight	AXIS Q8721-E: 28.5 kg (63 lb.)
	Included accessories	Installation and Management Software CD Windows decoder 1-user license
	Required accessories	Power supply (230 V/120 V) with built-in day/night sensor (sold separately) Wall bracket or column bracket (sold separately)
Optional accessories	Corner mount and pole mount IR Illuminator Installation Display AXIS Camera Station and video management software from Axis' Application Development Partners	

Further Information

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

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

Warranty

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

Installation Guide

AXIS Q8721-E

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