AUTODOME inteox 7000i - 2MP (in-ceiling)

en Installation Manual

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1 Safety EN

1.1 About this Manual

This manual has been compiled with great care and the information it contains has been thoroughly verified. The text was complete and correct at the time of printing. Because of the ongoing development of products, the content of the manual may change without notice. Bosch Security Systems accepts no liability for damage resulting directly or indirectly from faults, incompleteness, or discrepancies between the manual and the product described.

1.2 Legal Information

Copyright

This manual is the intellectual property of Bosch Security Systems, and is protected by copyright. All rights reserved.

Trademarks

All hardware and software product names used in this document are likely to be registered trademarks and must be treated accordingly.

1.3 Safety Precautions

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 the equipment or environment, or data loss.

1.4 Important Safety Instructions

Read, follow, and retain for future reference all of the following safety instructions. Heed all warnings on the unit and in the operating instructions before operating the unit.

1. **Cleaning -** Unplug the unit from the outlet before cleaning. Follow any instructions provided with the unit. Generally, using a dry cloth for cleaning is sufficient, but a moist fluff-free cloth or leather shammy may also be used. Do not use liquid cleaners or aerosol cleaners.
2. **Heat Sources -** Do not install the unit near any heat sources such as radiators, heaters, stoves, or other equipment (including amplifiers) that produce heat.
3. **Ventilation -** Any openings in the unit enclosure are provided for ventilation to prevent overheating and ensure reliable operation. Do not block or cover these openings. Do not place the unit in an enclosure unless proper ventilation is provided, or the manufacturer's instructions have been adhered to.
4. **Object and liquid entry -** Never push objects of any kind into this unit through openings as they may touch dangerous voltage points or short-out parts that could result in a fire or electrical shock. Never spill liquid of any kind on the unit. Do not place objects filled with liquids, such as vases or cups, on the unit.
5. **Lightning -** For added protection during a lightning storm, or when leaving this unit unattended and unused for long periods, unplug the unit from the wall outlet and disconnect the cable system. This will prevent damage to the unit from lightning and power line surges.
6. **Controls adjustment -** Adjust only those controls specified in the operating instructions. Improper adjustment of other controls may cause damage to the unit. Use of controls or adjustments, or performance of procedures other than those specified, may result in hazardous radiation exposure.
7. **Overloading -** Do not overload outlets and extension cords. This can cause fire or electrical shock.
8. **Power cord and plug protection -** Protect the plug and power cord from foot traffic, being pinched by items placed upon or against them at electrical outlets, and its exit from the unit. For units intended to operate with 230 VAC, 50 Hz, the input and output power cord must comply with the latest versions of IEC Publication 227 or IEC Publication 245.
9. **Power disconnect -** Units have power supplied to the unit whenever the power cord is inserted into the power source, or when High Power-over-Ethernet (High PoE) power is provided over the Ethernet CAT 5E/6 cable. The unit is operational only when the ON/OFF switch is in the ON position. The power cord is the main power disconnect device for switching off the voltage for all units. When High PoE or PoE+ (820.3at) is used to power the unit, the power is provided over the Ethernet cable, which is then the main power disconnect device for switching off the voltage for all units.
10. **Power sources -** Operate the unit only from the type of power source indicated on the label. Before proceeding, be sure to disconnect the power from the cable to be installed into the unit.
    For battery powered units, refer to the operating instructions.
    For external power supplied units, use only the recommended or approved power supplies.
    For limited power source units, this power source must comply with EN60950.
    Substitutions may damage the unit or cause fire or shock.
    For 24 VAC units, voltage applied to the unit's power input should not exceed ±10%, or 28 VAC. User-supplied wiring must comply with local electrical codes (Class 2 power levels). Do not ground the supply at the terminals or at the unit's power supply terminals.

If unsure of the type of power supply to use, contact your dealer or local power company.

11. **Servicing -** Do not attempt to service this unit yourself. Opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.
12. **Damage requiring service -** Unplug the unit from the main AC power source and refer servicing to qualified service personnel when any damage to the equipment has occurred, such as:
    the power supply cord or plug is damaged;
    exposure to moisture, water, and/or inclement weather (rain, snow, etc.);
    liquid has been spilled in or on the equipment;
    an object has fallen into the unit;
    unit has been dropped or the unit cabinet is damaged;
    unit exhibits a distinct change in performance;
    unit does not operate normally when the user correctly follows the operating instructions.
13. **Replacement parts -** Be sure the service technician uses replacement parts specified by the manufacturer, or that have the same characteristics as the original parts. Unauthorized substitutions may cause fire, electrical shock, or other hazards.
14. **Safety check -** Safety checks should be performed upon completion of service or repairs to the unit to ensure proper operating condition.
15. **Installation -** Install in accordance with the manufacturer's instructions and in accordance with applicable local codes.
16. **Attachments, changes or modifications -** Only use attachments/accessories specified by the manufacturer. Any change or modification of the equipment, not expressly approved by Bosch, could void the warranty or, in the case of an authorization agreement, authority to operate the equipment.

Caution!
TO REDUCE THE RISK OF ELECTRIC SHOCK, DISCONNECT THE POWER SOURCE WHILE INSTALLING THE DEVICE.

Caution!
Installation must be made by qualified personnel and conform to ANSI/NFPA 70 (the National Electrical Code® (NEC)), Canadian Electrical Code, Part I (also called CE Code or CSA C22.1), and all applicable local codes. Bosch Security Systems accepts no liability for any damages or losses caused by incorrect or improper installation.

Warning!
INSTALL EXTERNAL INTERCONNECTING CABLES IN ACCORDANCE TO NEC, ANSI/NFPA70 (FOR US APPLICATION) AND CANADIAN ELECTRICAL CODE, PART I, CSA C22.1 (FOR CAN APPLICATION) AND IN ACCORDANCE TO LOCAL COUNTRY CODES FOR ALL OTHER COUNTRIES. BRANCH CIRCUIT PROTECTION INCORPORATING A 20 A, 2-POLE LISTED CIRCUIT BREAKER OR BRANCH RATED FUSES ARE REQUIRED AS PART OF THE BUILDING INSTALLATION. A READILY ACCESSIBLE 2-POLE DISCONNECT DEVICE WITH A CONTACT SEPARATION OF AT LEAST 3 mm MUST BE INCORPORATED.

Warning!
ROUTING OF EXTERNAL WIRING MUST BE DONE THROUGH A PERMANENTLY EARTHED METAL CONDUIT.

Warning!
THE CAMERA MUST BE MOUNTED DIRECTLY AND PERMANENTLY TO A NON-COMBUSTIBLE SURFACE.

Notice!
Always use a shielded twisted pair (STP) connection cable and a shielded RJ45 network cable connector where the camera is used outdoors or the network cable is routed outdoors. Always use shielded cables/connectors in demanding indoor electrical environments where the network cable is located in parallel with electrical mains supply cables, or where large inductive loads such as motors or contactors are near the camera or its cable.

Notice!
Bosch recommends the use of surge/lightning protection devices (sourced locally) to protect network and power cables and the camera installation site. Refer to NFPA 780, Class 1 & 2, UL96A, or the equivalent code appropriate for your country/region, and to local building codes. Refer also to the installation instructions of each device (surge protector where the cable enters the building, midspan, and camera).

If a power adapter supplies power to the camera, you must ground the adapter properly.

1.5 Important Notices

Accessories - Do not place this unit on an unstable stand, tripod, bracket, or mount. The unit may fall, causing serious injury and/or serious damage to the unit. Use only with mounting solutions specified by the manufacturer. When a cart is used, use caution and care when moving the cart/unit combination to avoid injury from tip-over. Quick stops, excessive force, or uneven surfaces may cause the cart/unit combination to overturn. Mount the unit per the installation instructions.

Adjustment of controls - Adjust only those controls specified in the operating instructions. Improper adjustment of other controls may cause damage to the unit.

Camera signal - Protect the cable with a primary protector if the camera signal is beyond 140 feet, in accordance with NEC800 (CEC Section 60).

Environmental statement - Bosch has a strong commitment towards the environment. This device has been designed to respect the environment as much as possible.

Electrostatic-sensitive device - Use proper ESD safety precautions when handling the camera to avoid electrostatic discharge.

Fuse rating - For security protection of the device, the branch circuit protection must be secured with a maximum fuse rating of 16A. This must be in accordance with NEC800 (CEC Section 60).

Grounding:

- Connect outdoor equipment to the unit's inputs only after this unit has had its ground terminal connected properly to a ground source.
- Disconnect the unit's input connectors from outdoor equipment before disconnecting the grounding terminal.
- Follow proper safety precautions such as grounding for any outdoor device connected to this unit.

U.S.A. models only - Section 810 of the National Electrical Code, ANSI/NFPA No.70, provides information regarding proper grounding of the mount and supporting structure, size of grounding conductors, location of discharge unit, connection to grounding electrodes, and requirements for the grounding electrode.

Outdoor signals - The installation for outdoor signals, especially regarding clearance from power and lightning conductors and transient protection, must be in accordance with NEC725 and NEC800 (CEC Rule 16-224 and CEC Section 60).

Refer to the ”Best Practices for Outdoor Installation” section of the manual for more information on outdoor installations.

Permanently connected equipment - Incorporate a readily accessible disconnect device in the building installation wiring.

Power lines - Do not locate the camera near overhead power lines, power circuits, or electrical lights, nor where it may contact such power lines, circuits, or lights.

Damage requiring service – Unplug the devices from the main AC power source and refer servicing to qualified service personnel whenever any damage to the device has occurred, such as:

- the power supply cable is damaged;
- an object has fallen on the device;
- the device has been dropped, or its enclosure has been damaged;
- the device does not operate normally when the user follows the operating instructions correctly.

Servicing - Do not attempt to service this device yourself. Refer all servicing to qualified service personnel.
This device has no user-serviceable parts.

Notice!
This is a **class A** product. In a domestic environment this product may cause radio interference, in which case the user may be required to take adequate measures.

Notice!
Ce produit est un appareil de **Classe A**. Son utilisation dans une zone résidentielle risque de provoquer des interférences. Le cas échéant, l'utilisateur devra prendre les mesures nécessaires pour y remédier.

FCC & ICES Information

(U.S.A. and Canadian Models Only)

This device complies with part 15 of the FCC Rules. Operation is subject to the following conditions:

– this device may not cause harmful interference, and
– this device must accept any interference received, including interference that may cause undesired operation.

NOTE: This equipment has been tested and found to comply with the limits for a **Class A** digital device, pursuant to Part 15 of the FCC Rules and ICES-003 of Industry Canada. 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 radiates 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 expense.

Intentional or unintentional modifications, not expressly approved by the party responsible for compliance, shall not be made. Any such modifications could void the user's authority to operate the equipment. If necessary, the user should consult the dealer or an experienced radio/television technician for corrective action.

1.6 Customer Support and Service

If this unit needs service, contact the nearest Bosch Security Systems Service Center for authorization to return and shipping instructions.

USA and **Canada**
Telephone: 800-289-0096, option 5
Fax: 800-366-1329
Email: repair@us.bosch.com

Customer Service
Telephone: 800-289-0096, option 3
Fax: 800-315-0470
Email: orders@us.bosch.com

Technical Support
Telephone: 800-289-0096, option 4
Fax: 800-315-0470
Email: technical.support@us.bosch.com

Europe, Middle East, Africa, and Asia Pacific Regions
Contact your local distributor or Bosch sales office. Use this link: https://www.boschsecurity.com/xc/en/where-to-buy/

More Information
For more information, please contact the nearest Bosch Security Systems location or visit www.boschsecurity.com.

2 Unpacking

- This equipment should be unpacked and handled with care. Check the exterior of the packaging for visible damage. If an item appears to have been damaged in shipment, notify the shipper immediately.
- Verify that all the parts listed in the Parts List below are included. If any items are missing, notify your Sales or Customer Service Representative from Bosch Security Systems.
- Do not use this product if any component appears to be damaged. Please contact Bosch Security Systems in the event of damaged goods.
- The original packing carton (if undamaged) is the safest container in which to transport the unit and must be used if returning the unit for service. Save it for possible future use.

2.1 Parts List

Quantity	Component
1	AUTODOME inteox 7000i in-ceiling camera
1	Interface box
1	Optional black trim ring
1	Ceiling gasket (for IP54 conformance)
1	Safety instructions
1	Quick Installation Guide

2.2 Tools Required

1	Appropriate tool for cutting a hole in drywall or ceiling tile	In-ceiling Mount	No
1	Pliers	In-ceiling Mount	No

The following table lists additional products, sold separately by Bosch or other manufacturers, necessary to install AUTODOME cameras.

Quantity	Product	Part Number	Size
1	SD card	(user-supplied)	
---	Water tight metal conduit	(user-supplied)	20 mm (0.75 in.)
--	UL-listed liquid tight strain reliefs	(user-supplied)	
--	Weatherproof sealant	(user-supplied)	
4	Studs, stainless steel, corrosion-resistant,	(user-supplied)	6.4 mm (0.25 in.) to 8 mm (5/16 in.)

3 Product description

The AUTODOME inteox 7100i camera is based on an open operating system. With technology for excellent low-light sensitivity, Intelligent Video Analytics, and video streaming, the camera supports superior intelligence and imaging at the edge. The design of the camera gives undistorted, high-resolution video above the horizon, which is helpful in city landscapes that are not completely flat.

The AUTODOME inteox 7000i camera is an advanced, 30x PTZ surveillance camera based on an open operating system, driven by OSSA, from Security and Safety Things. With starlight imaging technology for excellent low-light sensitivity, the most robust Video Analytics on the market, and video streaming, the camera delivers unmatched picture quality. Even under the most challenging light conditions, the camera delivers high-definition (HD) 1080p video. Easy to install, the camera is available in either a field-proven, outdoor pendant housing or an indoor, in-ceiling housing.

The camera has been designed for quick and easy installation, a key feature from Bosch IP video security products.

All housings feature recessed screws and latches for increased tamper resistance.

In an enclosed installation area, still air can cause the operating temperature of the camera to go above the maximum. If you install a camera in an enclosed area, make sure that the operating temperature of the camera does not go above the maximum temperature. The maximum operating temperature is:

– +40 °C (+104 °F) for in-ceiling models
– +55 °C (+131 °F) for pendant models

Make sure that air circulates around the camera to supply cooling.

4 Preparing the bubble

The inside of the housing may contain packing material to safeguard the camera during shipping. If so, you must remove the packing material before attaching the in-ceiling housing to the interface box.

Notice!
To avoid excessive moisture saturation inside the housing, limit the amount of time that the bubble is disconnected from the housing. Bosch recommends that the bubble be removed from the housing for no more than five (5) minutes.

Remove the bubble from an in-ceiling housing

1. Loosen the lockscrew (item 1 in the illustration below) in the trim ring using a P1 or smaller Phillips screwdriver until the bubble can rotate freely.
2. Rotate the bubble counterclockwise approximately 1/4 turn until it releases from the in-ceiling housing. See the figure below for an illustration.

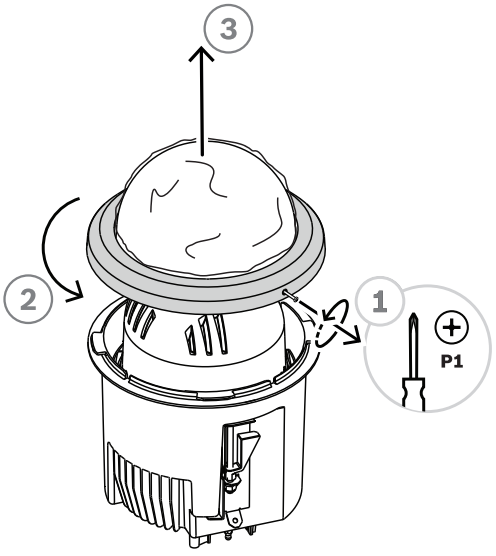


Figure 4.1: Remove the bubble

- Remove the foam inserts surrounding the camera module.

After you remove the bubble

- Visually examine the inner and the external surfaces of the bubble for debris, dirt, or residue. If you must clean the bubble, refer to the steps that follow for instructions.

Bubble Cleaning

If cleaning the bubble is required, use the following procedures and comply with all the warnings listed below.

Cleaning the Bubble Interior

The extremely soft interior surface should not be cleaned by rubbing or dusting with a cloth. Use clean dry compressed air, preferably from a spray can, to remove any dust from the interior surface.

Warning!
Do not use alcohol-based solutions to clean the bubble. This will cause the surface to cloud and, over time, cause stress aging, which makes the bubble brittle.

Cleaning the Bubble Exterior

The exterior of the bubble is hard-coated for extra protection. If cleaning becomes necessary, only use cleaning solutions and cloths suitable for cleaning safety glass lenses. Dry the bubble thoroughly with a dry nonabrasive cloth to prevent water spots. Never scrub the bubble with any abrasive material or cleaners.

Bosch recommends cleaning the exterior of the bubble with NOVUS “No. 1” Plastic Clean & Shine (or equivalent), according to manufacturer’s instructions. Refer to www.novuspolish.com to order or to find a local distributor.

Cautions

- Do not clean bubbles in the hot sun or on very hot days.
- Do not use abrasive or highly alkaline cleaners on the bubble.
- Do not scrape the bubble with razor blades or other sharp instruments.
- Do not use Benzene, Gasoline, Acetone, or Carbon Tetrachloride on the bubble.

Refer to

- *Installing the Ceiling (IP54 Housing) Gasket, page 19*
- *Maintenance, page 38*

5 (Optional) Installing an SD Card

The camera can accept a customer-supplied **SDHC** or **SDXC** memory card (hereafter referred to as “SD card”) for local storage. (The camera will not accept MicroSD cards.) Using an **SD** card is optional.

Note: Disconnect power to the camera while adding or removing an **SD** card.

1. Follow the steps in one of these sections (depending on the type of camera mount): Remove bubble from in-ceiling housing or Remove bubble from pendant housing.
2. Slide the SD card into the slot. Press down the end of the SD cards until you hear a click and the card locks into place.
3. Follow the steps in one of these sections (depending on the type of camera mount): Replace the bubble in an in-ceiling housing or Replace the bubble in a pendant housing.

6 Replacing the trim ring and bubble

Replace the trim ring (optional) (In-ceiling models)

The dome bubble for in-ceiling models of AUTODOME 7000 comes assembled with a white trim ring. An optional black trim ring is supplied in the shipping box. To replace the white trim ring, follow these steps:

1. Remove the four (4) Phillips head screws from the inner ring.
2. Remove the white trim ring.
3. For in-ceiling models, verify that the trim ring gasket is in place. (Refer to the graphic in *Installing the Ceiling (IP54 Housing) Gasket, page 19* for an illustration of the correct placement of the gasket.)
4. Place the black trim ring over the inner ring.
5. Replace and tighten the four (4) screws.

Replace the bubble in an in-ceiling housing

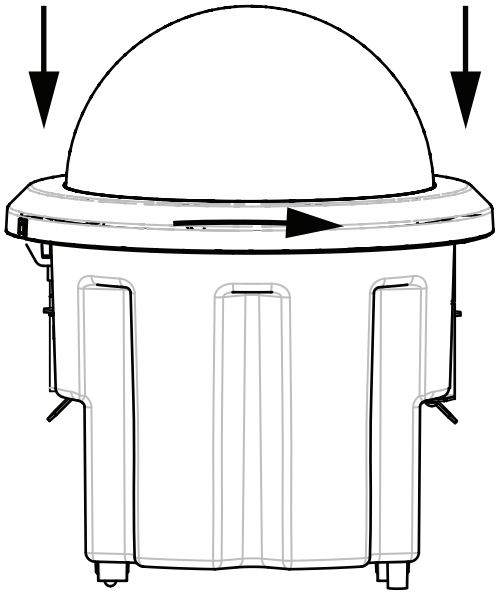


Figure 6.1: In-Ceiling Bubble

1. Use a non-permanent marking instrument (such as chalk or a carpenter pencil) to mark on the ceiling the screw slot in the in-ceiling housing.
2. Place the bubble over the camera module, and align it until it settles.
3. Rotate the trim ring, not the bubble itself, clockwise until it locks in position in the housing. The ring becomes tight and may be difficult to turn. Aligning the screw slots by using the chalk or pencil mark as reference ensures that you align both screw slots.

Warning!

Trim ring can become deformed

If the trim ring is not turned completely, the screw slot on the trim ring will not be aligned with the screw slot in the housing. You cannot see the screw slot in the housing when you are turning the screw in the slot in the trim ring. You can turn the screw in the slot in the trim ring, but miss the screw slot on the housing. Forcing the screw into the trim ring (without the screw going into the screw slot in the housing) can deform the ring.

4. Erase the chalk or pencil mark if desired.

7 Installing the In-Ceiling Mount

7.1 Description

This chapter details how to install the camera in an in-ceiling mount. The in-ceiling AUTODOME camera is suitable for use in environmental air spaces.
To install the In-ceiling Mount, verify that a minimum of 216 mm (8.5 in.) of air space above the ceiling is available.

7.2 Dimensions

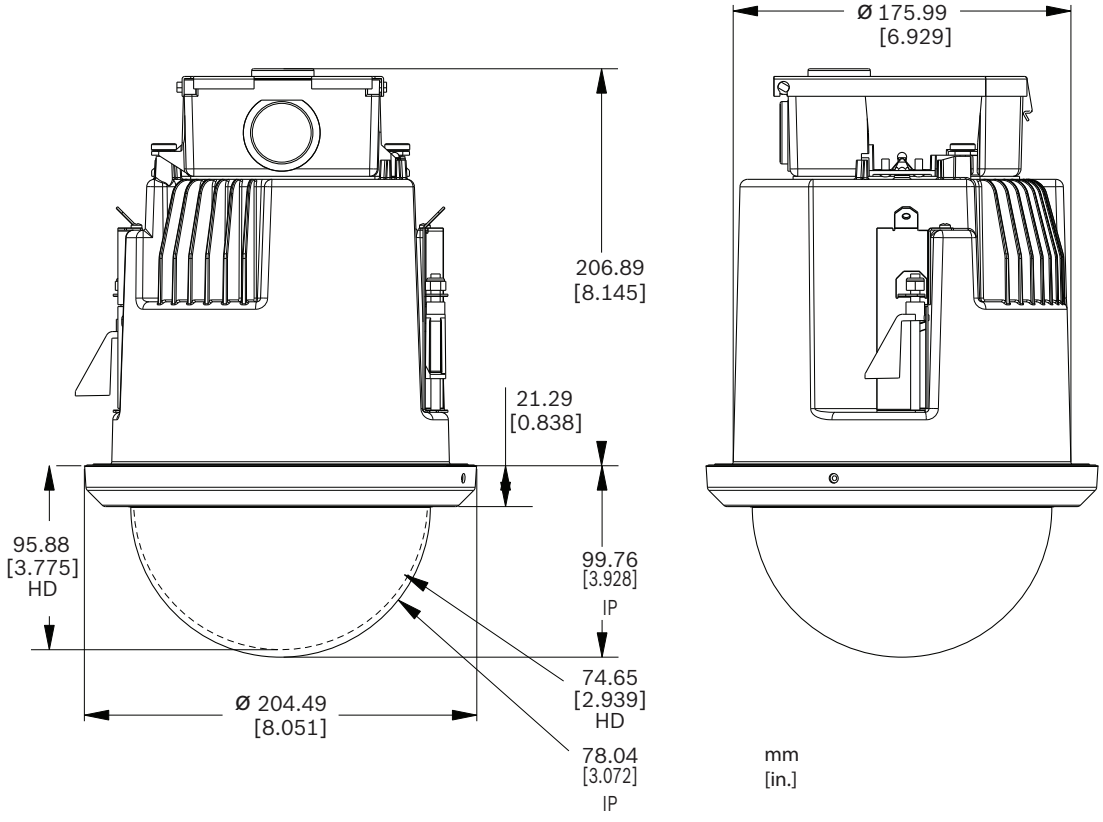


Figure 7.1: AUTODOME 7000 Dimensions – In-ceiling

7.3 Prepare Drywall Ceiling for Installation

1. Choose the desired location to mount the camera.
2. Use the bracket Base Plate as a template to cut a 7 in. hole with a tolerance of ±1/8 in. (177.8 mm ±2.2 mm) in the ceiling with a drywall utility saw or Jig Saw. Proceed to Wire the Interface Box, for further instructions.

7.4 Preparing the Suspension Ceiling for Installation

You must use the VGA-IC-SP In-ceiling Support Kit to install the camera In-ceiling housing into a suspended or drop ceiling. This kit requires a separate purchase.

1. Choose the desired location to mount the camera.
2. Remove an adjacent ceiling tile.
3. Loosen the four (4) securing screws, located in the corners of the Bracket Assembly, enough to hold the suspension bars but still allowing adjustment during installation.
4. Place the Bracket Assembly over the ceiling tile, which is used to mount the camera.
5. Snap the Bar Clips of the bracket to the ceiling rails.

- Use the bracket Base Plate as a template or cut a hole-sized hole in the center of the ceiling tile with a drywall utility saw or jig saw.
- Tighten the four (4) securing screws to the Bracket Assembly.
- Secure the Bracket Assembly to an overhead securing point with a safety wire.

7.5 Installing the Ceiling (IP54 Housing) Gasket

In order to conform to the IP54 rating, you must install the ceiling gasket, illustrated (along with the other pieces that protect the camera and provide the IP54 rating) in the figure below. In addition, if you are using the optional black trim ring instead of the factory-installed white trim ring, the trim ring gasket must also be in place to provide the IP54 protection. (Refer to Replace the trim ring (optional) (In-ceiling models) for step-by-step installation instructions.)

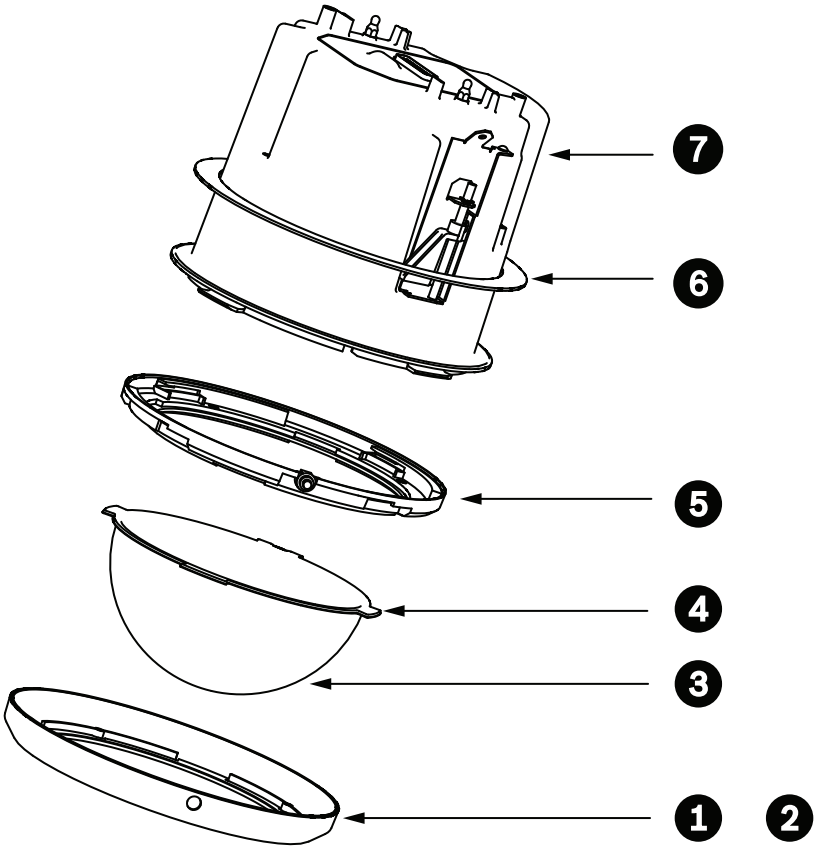


Figure 7.2: In-ceiling (IP54 Rating) Installation Diagram

1	White Trim Ring (factory-installed on dome bubble)	5	Inner Ring
2	Black Trim Ring (supplied in the shipping box of the camera)	6	Ceiling (IP54 housing) Gasket
3	Bubble	7	In-ceiling housing
4	Trim Ring Gasket		

1. Place the gasket (provided in the shipping box of the camera) over the top of the in-ceiling housing.
2. Carefully slide the gasket down over the housing, until it rests on the flange of the housing.

7.6 Attach Housing to the Interface Box

The In-Ceiling Housing is attached to the Interface Box and secured by two (2) thumbscrews.

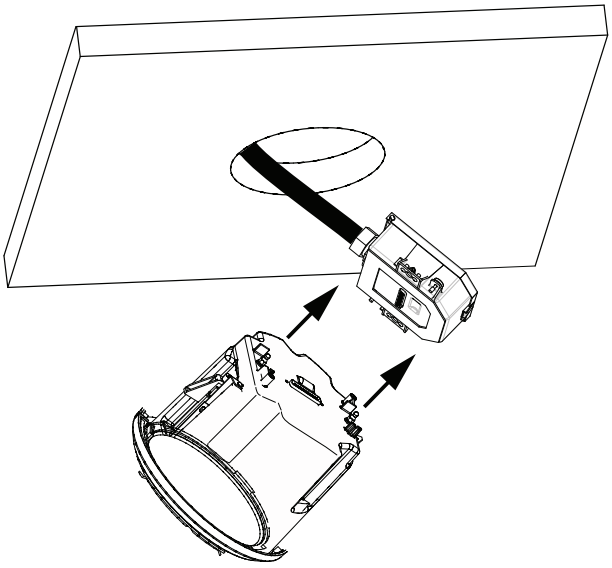


Figure 7.3: Attach Housing to Interface Box

1. Insert the In-ceiling housing through the hole in the ceiling to verify that the edge of the hole support the unit. Then remove the housing from the hole.
2. Align the ball studs of the In-Ceiling Housing to the Stud Retainers on Interface Box and attach.
3. Tighten the two (2) Thumbscrews to secure the Interface Box to the housing.

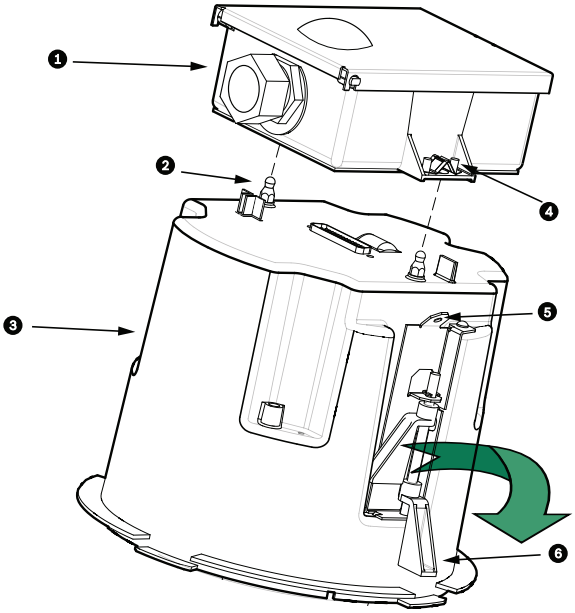


Figure 7.4: In-Ceiling Housing and Interface Box

1	Interface Box	4	Thumb Screw
2	Ball Stud	5	Tether Point
3	In-ceiling Housing	6	Ceiling Clamp

Caution!
The In-ceiling dome is provided with tether points on each side of the housing. To prevent injury, attach a safety wire from a secure anchor point above the ceiling to a tether point on the dome housing. See below for an illustration.

7.7 Secure Housing to Ceiling

The In-ceiling Housing is secured to the ceiling by two (2) screw clamps.

1. Insert the In-ceiling Mount Assembly through the hole in the ceiling.
2. Tighten both clamps using a #2 Phillips screwdriver, to secure the housing to the ceiling.

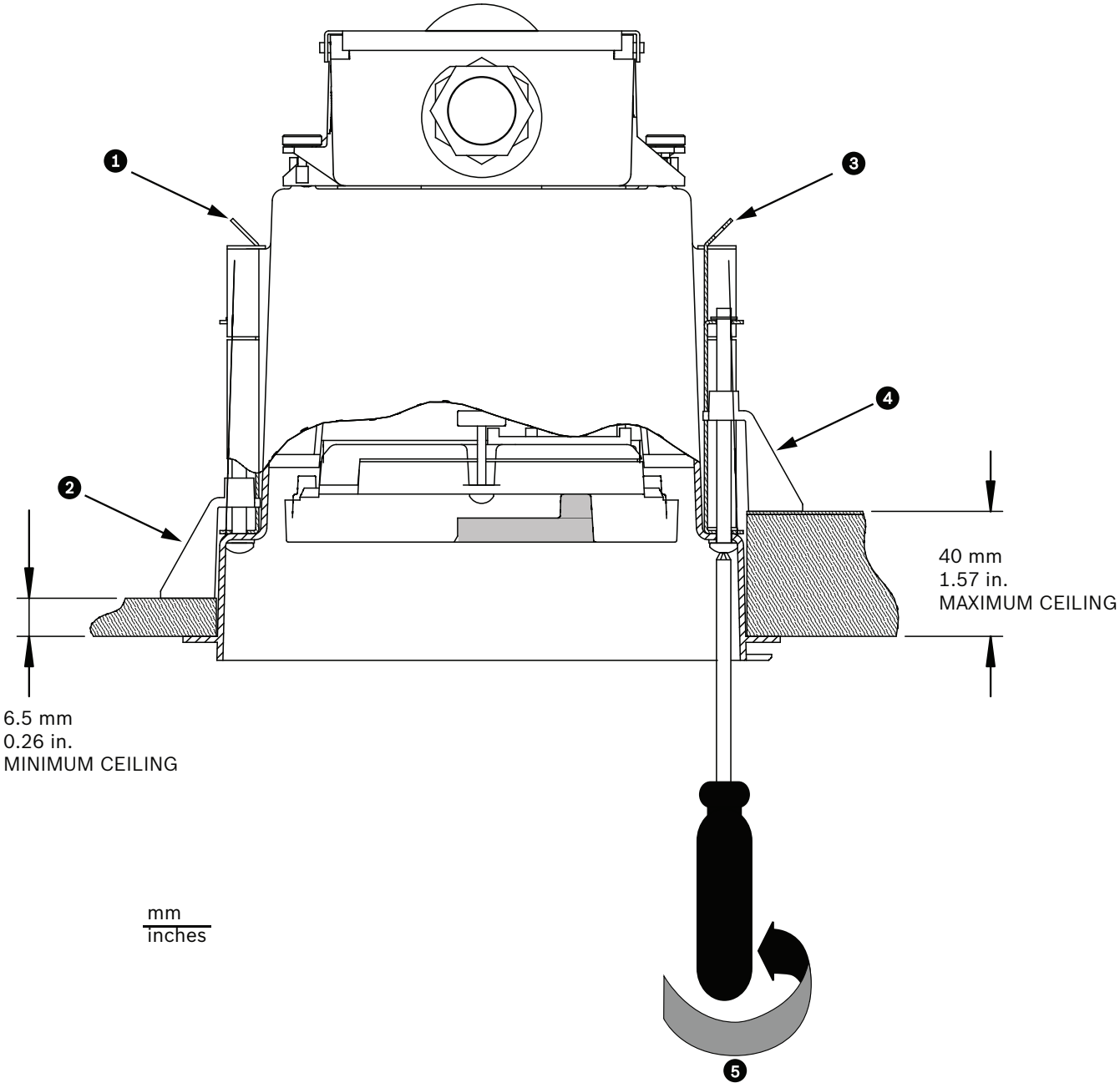


Figure 7.5: Secure camera to ceiling

1	Tether Point	4	Ceiling Clamp
2	Ceiling Clamp	5	Rotate Clockwise to Engage Clamp

3	Tether Point		

Caution!
Over-torquing the Ceiling Clamps can damage the clamp or ceiling. Only tighten the clamp until it contacts the ceiling and you start to feel some resistance. If using a power screwdriver, set the torque level to the lowest setting.

8 Finalizing installation

Remove the plastic on the bubble

After you complete all other installation steps, remove the plastic material that is protection for the bubble.

9 Replacing an In-ceiling HD Acrylic Bubble

Notice!
The following instructions are for bubbles VGA-BUBHD-CCLA and VGA-BUBHD-CTIA.

1. Loosen the lock screw (item 1, below) in the trim ring using a P1 or smaller Phillips screwdriver until the bubble can rotate freely.
2. Clean the bubble according to the instructions in the section “Maintenance.”
3. Place the replacement bubble onto the in-ceiling housing, and rotate it clockwise approximately 1/4 turn until it stops. Then tighten the lock-screw.

Notice!
Trim ring can become deformed
If the trim ring is not turned completely, the screw slot on the trim ring will not be aligned with the screw slot in the housing. You cannot see the screw slot in the housing when you are turning the screw in the slot in the trim ring. You can turn the screw in the slot in the trim ring, but miss the screw slot on the housing. Forcing the screw into the trim ring (without the screw going into the screw slot in the housing) can deform the ring.

10 Connection

10.1 Connecting the AUTODOME camera to the PC

Note: For simplicity, the graphic in this section is only of the camera. The graphic does not depict a mount that you may have installed already.

1. Install the camera according to the instructions in the appropriate Installation section of this manual.
2. Connect an Ethernet cable from camera's RJ45 connector to a dedicated network switch to bypass the Local Area Network (LAN).
3. Connect the dedicated network switch to the RJ45 connector on the PC (see option A below).

Notice!
The camera can also be connected directly to a PC using an Ethernet crossover cable with RJ45 connectors (see option B below).

Notice!
You can also use the Bosch Video Client software application to configure the network settings for an AUTODOME camera. Go to www.boschsecurity.com to download the Configuration Manager software and Operating Manual.

10.2 Power Cable and Wire Distances Guides

Power

115/230 VAC	
Copper Wire	To comply with local codes.

Caution!
Compliance with EN50130-4 Alarm Standard – CCTV for Security Applications
To meet the requirements of the EN50130-4 Alarm Standard, an ancillary uninterruptable power (UPS) supply is necessary. The UPS must have a **Transfer Time** between 2–6 ms and a **Backup Runtime** of greater than 5 seconds for the power level as specified on the product datasheet.

Maximum Wire Distances from Power Supply to AUTODOME camera

24 V to AUTODOME camera				
	VA / Watts	**14 AWG (2.5 mm)**	**16 AWG (1.5 mm)**	**18 AWG (1.0 mm)**
Models with IVA, Indoor	35 / 19	99 m (325 ft)	62 m (205 ft)	39 m (129 ft)
Models with IVA, Outdoor	60 / 55	58 m (190 ft)	36 m (119 ft)	23 m (75 ft)

10.3 Ethernet Connections

The camera connects to a 100 Base-TX network either directly or via a hub. Video, optional audio input, optional audio output, and control are transmitted over a standard TCP/IP network using the built-in Web server. In addition, power can be supplied over the Ethernet cable using the Bosch High PoE 60W midspan (sold separately). Power can also be supplied

over the Ethernet cable to in-ceiling models and indoor/outdoor pendant models used in indoor applications (where the heater is not powered) using PoE+ PSEs (midspan switches) compliant with the IEEE 802.3at, class 4 standard.
The camera can be connected simultaneously to a 24 VAC power supply and to a High PoE 60 W midspan. The camera uses power from the 24 VAC power supply. If this power supply fails, the camera seamlessly switches power input to the High PoE 60 W midspan. The camera switches back to the 24 VAC power supply once power is restored.

Which is correct? Here is the original:

Warning!
Bosch High PoE or PoE+ (802.3at): Use only approved High PoE or PoE+ (802.3at) devices. For outdoor pendant applications that require heater power use only the Bosch High PoE midspan (sold separately) to power the camera and the heaters. For in-ceiling or indoor pendant applications that don't require heater power, standard PoE+ (802.3at) midspans or switches can be used to power the camera.
When powering the camera via PoE or a midspan device, additional surge protection is required.
If auxiliary power (24VAC camera and 24VAC heater) and High PoE are applied simultaneously, the camera selects the auxiliary 24VAC input and draws minimal power from the High PoE midspan.

Here is what I guessed should change, based on what I changed for ATLAS V related to 802.3bt:

Warning!
Use only approved PoE (802.3bt) devices.
For outdoor pendant applications that require heater power, use only approved PoE (802.3bt) devices to power the camera and the heaters. indoor pendant applications that don't require heater power, standard PoE+ (802.3at) midspans or switches can be used to power the camera.
When powering the camera via PoE or a midspan device, additional surge protection is required.
If auxiliary power (24 VAC) and PoE are applied simultaneously, the camera selects PoE and stops auxiliary input.

The camera connects to a 10 Base-T/100 Base-TX network either directly or via a hub. Video, optional audio input, optional audio output, and control are transmitted over a standard TCP/IP network using the built-in Web server. In addition, power can be supplied over the Ethernet cable using the Bosch High PoE 60W midspan (sold separately). Power can also be supplied over the Ethernet cable to in-ceiling models and indoor/outdoor pendant models used in indoor applications (where the heater is not powered) using PoE+ PSEs (midspan switches) compliant with the IEEE 802.3at, class 4 standard.
The camera can be connected simultaneously to a 24 VAC power supply and to a High PoE 60 W midspan. The camera uses power from the 24 VAC power supply. If this power supply fails, the camera seamlessly switches power input to the High PoE 60 W midspan. The camera switches back to the 24 VAC power supply once power is restored.
Refer to Using the IP Interface, for instructions on configuring an IP environment.

Warning!

BOSCH High PoE or PoE+ (802.3at): Use only approved High PoE or PoE+ (802.3at) devices. For outdoor pendant applications that require heater power use only the Bosch High PoE midspan (sold separately) to power the camera and the heaters. For in-ceiling or indoor pendant applications that don't require heater power, standard PoE+ (802.3at) midspans or switches can be used to power the camera.
When powering the camera via PoE or a midspan device, additional surge protection is required.
If auxiliary power (24VAC camera and 24VAC heater) and High PoE are applied simultaneously, the camera selects the auxiliary 24VAC input and draws minimal power from the High PoE midspan.

Caution!

Ethernet CAT 5E/CAT 6 cables must be routed through earth-grounded conduit for indoor or outdoor applications. For outdoor applications, the conduit should be capable of withstanding the outdoor environment.

Notice!

The heater in an outdoor AUTODOME unit cannot be powered via the Power-over-Ethernet + (IEEE 802.3at, class 4) standard, unless the heater is connected to a High PoE Midspan 60W, Single port (sold separately). See the Installation Manual of the Midspan for details.

Cable Type	CAT-5E or CAT 6 Ethernet
Maximum Distance	100 m (328 ft)
Bandwidth	10 Base-T/100 Base-TX
High PoE (required for pendants in outdoor applications that use heaters)	Use the Bosch High PoE 60W midspan (sold separately).
PoE+ (only for indoor models or indoor applications for pendant model where heater is not required)	IEEE 802.3at, class 4 standard
Terminal Connector	RJ45, Female

Notice!

Consult the National Electrical Code (NEC) for cable bundling requirements and limitations.

10.4 Fiber Optic Ethernet Media Converter (Optional)

The fiber optic media converter is designed to transmit 10/100 Mbps Ethernet signals over fiber optic cable using 10/100 Mbps Small Form-factor Pluggable (SFP) modules. The SFP modules are available as multi-mode fiber (MMF) or single-mode fiber (SMF) models with a single SC connector or dual-fiber with an LC connector. Refer to the VG4-SFPSCKT Fiber Optic Media Converter Installation Guide.

Ethernet Media Converter	
Data Interface	Ethernet
Data Rate	10/100 Mbps IEEE 802.3 Compliant Full Duplex or Half Duplex Electrical Port Full Duplex Optical Port
Fiber Type, MMF	50/125 µm MMF. For 50/125 µm fiber, subtract 4 dB from the specified optical budget value. Must meet or exceed fiber standard ITU-T G.651.
Fiber Type, SMF	8–10/125 µm SMF. Must meet or exceed fiber standard ITU-T G.652.
Maximum Distance	20 km (12.4 miles)
Requirement	Media converter receiver (CNFE2MC/IN) at controller end of system
Terminal Connection	Duplex LC or Single SC

10.5 Alarms and Relay Connections

Alarm Inputs

The camera provides two (2) alarm inputs. Each input can be activated by dry contact devices such as pressure pads, passive infra-red detectors, door contacts, and similar devices. The table below summarizes the size and distance wires.

Wire Size		Maximum Distance	
AWG	mm	feet	meters
22	0.644	500	152.4
18	1.024	800	243.8

Tab. 10.1: Alarm wire guide

You wire alarms either Normally Open (**N.O.**) (the default) or Normally Closed (**N.C.**), and must program the alarm inputs through the page **Configuration**.
The camera incorporates two types of alarms: Non-supervised and Supervised. In addition to transmitting an alarm condition, a supervised alarm also transmits a tamper condition. Depending on how the alarm is configured, a short or a break in the alarm's circuit can trigger the tamper signal.

Configuring Supervised Alarms (inputs 1 and 2)

To configure Alarm 1 or 2 (pin 5 or 6) for supervision, you must install a 2.2 K end-of-line resistor in the circuit. Then, you program the alarms, through **Configuration**, to either Normally Open (N.O.) or Normally Closed (N.C.).

Notice!
Only Alarms 1 and 2 (pins 5 or 6) can be configured for supervision. Once a supervised alarm is programmed, it does not need to be enabled to indicate a tamper condition.

Configuring a Normally Open Supervised Alarm

1. Install a 2.2 K end-of-line resistor in the alarm circuit.
2. Connect the alarm wires to input 1 or 2 (pin 5 or 6) and to the ground (pin 7) at the camera.

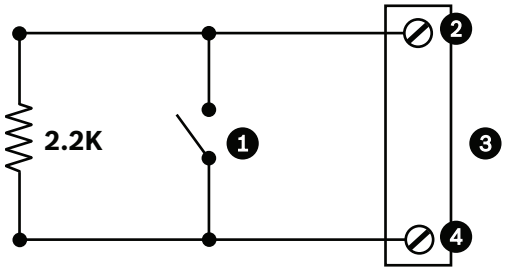


Figure 10.1: N.O.S. - Normally Open Supervised Connections

1	Dry Contact	3	Dome Connector
2	Alarm 1 or 2 only (Pin 5 or 6)	4	Ground (Pin 7)

3. From **Configuration**, select **Alarm** > **Alarm Inputs**. For **Input** 1, enter a **Name** for the **Alarm input**. In the field **Active**, select **N.O.S.**. Finally, select an **Action**. See the table below for contact and condition details.

AUTODOME Programmed N.O.S.	
Contact	Alarm Condition
Open	Normal
Closed	Alarm
Cut or break	Tamper

Configuring a Normally Closed Supervised Alarm

1. Install a 2.2 K end-of-line resistor in the alarm circuit.
2. Connect the alarm wires to input 1 or 2 (pin 5 or 6) and to the ground (pin 7) at the camera.

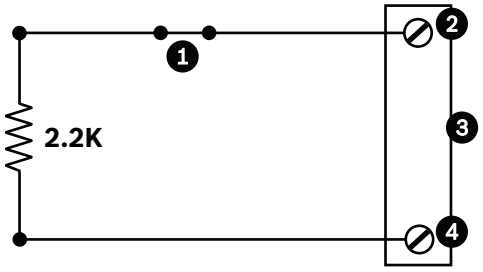


Figure 10.2: N.C.S. - Normally Closed Supervised Connections

1	Dry Contact	3	Dome Connector
2	Alarm 1 or 2 only (Pin 5 or 6)	4	Ground (Pin 7)

3. From **Configuration**, select **Alarm** > **Alarm Inputs**. For **Input** 1, enter a **Name** for the **Alarm input**. In the field **Active**, select **N.C.S.**. Finally, select an **Action** . See the table below for contact and condition details.

AUTODOME Programmed N.C.S.	
Contact	Alarm Condition
Open	Alarm
Closed	Normal
Short	Tamper

Configuring Non-supervised Alarms (inputs 3 through 7)

You can configure alarms 3 through 7 as non-supervised Normally Open (N.O.) or Normally Closed (N.C.) alarms.

Configuring a Normally Open Non-supervised Alarm

1. Connect the alarm to the appropriate input (3 through 7) and ground at the camera.

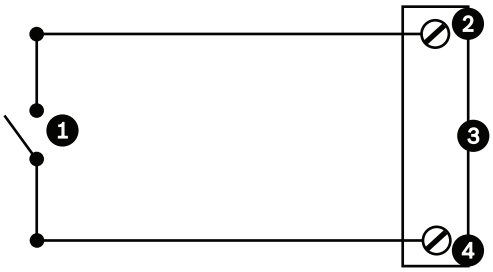


Figure 10.3: N.O. - Normally Open Non-supervised Connections

1	Dry Contact	3	Dome Connector
2	Alarm Inputs 3 to 7	4	Ground

2. From **Configuration**, select **Alarm** > **Alarm Inputs**. For **Input** 1, enter a **Name** for the **Alarm input**. In the field **Active**, select **N.O.**. Finally, select an **Action**. See the table below for contact and condition details.

AUTODOME Programmed N.O.	
Circuit	Alarm Indication
Open	Normal
Closed	Alarm

Configuring a Normally Closed Non-supervised Alarm

1. Connect the alarm to the appropriate input (3 through 7) and ground at the camera.

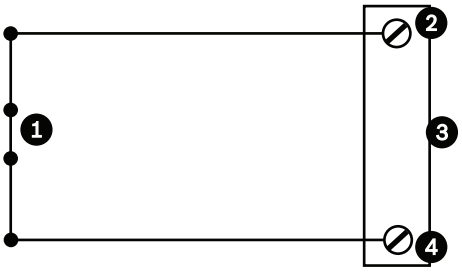


Figure 10.4: N.C. Normally Closed Non-supervised Connections

1	Dry Contact	3	Dome Connector
2	Alarm Inputs 3 to 7	4	Ground

2. From **Configuration**, select **Alarm** > **Alarm Inputs**. For **Input** 1, enter a **Name** for the **Alarm input**. In the field **Active**, select **N.C.**. Finally, select an **Action**.See the table below for contact and condition details.

AUTODOME Programmed N.C.	
Circuit	Alarm Indication
Open	Alarm

AUTODOME Programmed N.C.	
Closed	Normal

Alarm Outputs

The camera incorporates two (2) types of alarm outputs: one dry contact relay and three (3) open collector outputs or transistor outputs.

Configuring a Dry Contact Relay

The dry contact relay acts like an on/off switch. It has a maximum voltage rating of 2 A @ 30 DC.

1. Connect the appropriate stripped wire to the camera's COM connector.
2. Connect the appropriate stripped wire to the N.O. or N.C. connector, depending on your requirement.

Configuring an Open Collector Output

Outputs 1, 2, and 3 are open collector types. These outputs must be connected to a positive voltage between 5 and 32 V to complete the circuit, with a maximum voltage rating of 32 VDC @ 150 ma.

1. Connect the appropriate stripped wire to the open connector (1, 2, or 3) of the transistor.
2. Connect the appropriate stripped wire to the ground (GND) connector.

10.6 Audio Connections (Optional)

The camera is capable of receiving line level input signals and transmitting them over a network. It is also capable of receiving audio from the same network and sending it as audio output from the camera. The audio input signal is transmitted in sync with the video signals. As a result, for example, a door intercom system can be connected at the camera location.

Notice!

The line ports of the intercom should be used for transmitting audio signals on the intercom systems.
The audio line input is not suitable for direct microphone signal connection.
The audio line output is not suitable for direct speaker connection unless using a powered/ amplified speaker with line level input.

Audio Line Input Specifications

The following Line Input specifications should be complied with in all cases.

Max. Input Voltage	1 Vrms
Impedance	9 K Ω (typical)
Shield	Bare copper braid: 95% coverage
Internal gain level adjustment is available in case the signal level is too low.	

Audio Line Output Specifications

The following Line Output specifications should be complied with in all cases.

Typical Output Voltage	1 Vrms

Impedance	1.5 K Ω (typical)
Shield	Bare copper braid: 95% coverage
Internal gain level adjustment is available in case the signal level is too low.	

Wire Specifications

Wire Type	Shielded Coax (recommended)
Distance	Typically 10 m (33 ft), but depends on the signal level
Gage	Typically 22 AWG to connector (P105/P106), but depends on the style of connector used
Shield	Bare copper braid: 95% coverage
Center conductor	Stranded bare copper

Note that long distances are more susceptible to introducing noise into the signal.

Audio Line Level Input Connections

1. Remove the 100 Ohm termination resistor from the C+ to C- terminals.
2. Connect the audio line level source to the Audio_In+ (C+) input terminal.
3. Connect the audio signal ground to the Audio_In- (C-) input terminal.

Audio Line Level Output Connections

1. Connect the audio line level input of the audio output device (for example, an amplified speaker or a PC line level input) to the Audio_Out+ (RXD) output terminal.
2. Connect the audio line level output signal ground to the Audio_Out- (TXD) output terminal.

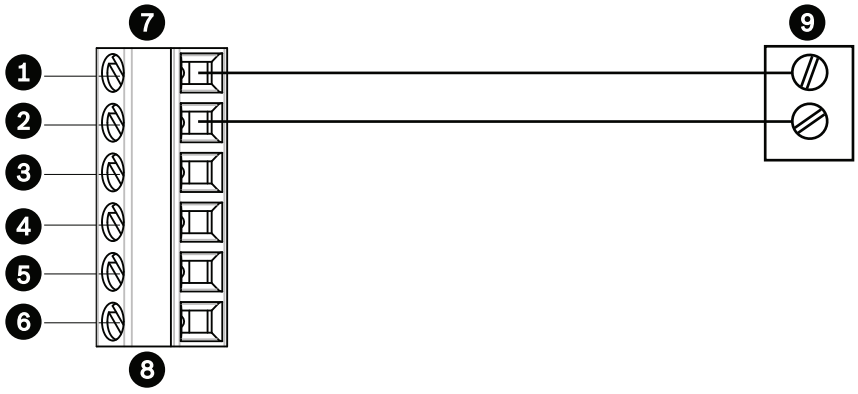


Figure 10.5: Connections for audio over an Ethernet network

1	Audio_In- (C-)	7	AUTODOME Data In/Out
2	Audio_In+ (C+)	8	P105/P106 Connector
3	Earth Ground	9	Audio Out
4	Audio_Out+ (RXD)		
5	Audio_Out– (TXD)		
6	Signal Ground		

Notice!
Separate the audio cables from the AC power lines to avoid noise.

To configure audio on the camera, refer to Basic Mode: Audio or Audio.

11 Troubleshooting

Support

Access our **support services** at www.boschsecurity.com/xc/en/support/.

Bosch Security and Safety Systems offers support in these areas:

- Apps & Tools
- Building Information Modeling
- Warranty
- Troubleshooting
- Repair & Exchange
- Product Security

Bosch Building Technologies Academy

Visit the Bosch Building Technologies Academy website and have access to **training courses, video tutorials** and **documents**: www.boschsecurity.com/xc/en/support/training/

11.1 Rebooting the unit

Reboot the unit

After a Factory Default or firmware update, reboot the unit if:

- You cannot connect to the unit in the Web browser.

OR

- Configuration Manager or BVMS or similar software identifies the unit as “Videojet Generic”.

▸ Reboot the unit using one of the following methods:

- In the web browser, type the IP address and then /reset (without any punctuation). Press the **Enter** key.

OR

- In Configuration Manager, right-click the IP address and click **Restart**.

▸ Wait two minutes for the process to complete.

If you cannot control the unit after the firmware upgrade, then cycle the power to the unit. If a power reset does not solve the problem, or if Configuration or video management software identifies the unit as “Videojet Generic,” then contact your Bosch Service Center for an RMA for the unit.

11.2 Physical reset button

Each camera has a hardware reset button. You may need to press the reset button to reset the camera to factory defaults if you encounter the following circumstances:

- You can power up the camera but cannot log on to the camera using the web browser.
- The camera doesn't start up, or fails to power up via PoE.
- The camera cannot search an IP address.
- The camera's firmware crashed.
- You forgot the password to access the camera.
- The image becomes frozen.
- You cannot update the firmware.
- The camera disconnects from the network at random and needs a reboot.
- The camera no longer finds pre-positions (preset positions).
- You cannot configure the camera using the web browser.
- The camera has no video out.

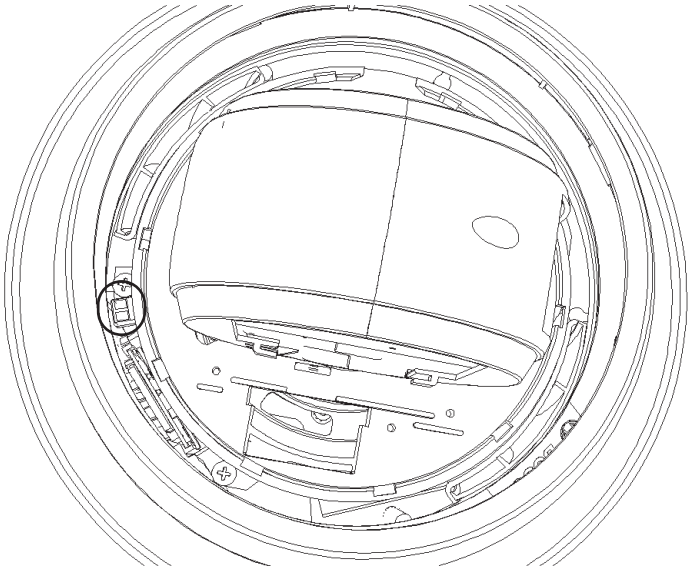
Notice!
A factory default deletes all camera settings including passwords, network settings, and image settings.
Complete the following sequence of steps only if you have no other option to restore operation to the camera.

Steps to complete a hardware reset for all camera models

1. Apply power to the camera.
2. Find the IP address of the camera.
3. Log on to the camera using the web browser. (**Note**: You can use Configuration Manager to identify the IP address.)
4. Find the hardware reset button on the camera. (Refer to the figure below to find the reset button for your camera model.)
5. Push and hold the reset button for more than 8 seconds. The red LED indicator on the PCBA board will come on to show that the hardware reset started.

Note: You can also use a conductive wire to short the terminal block.

1. Let the camera complete a self-check. When the self-check completes, the red LED will go off.
2. Find the IP address again.
3. Access the camera using the web browser.
4. Set the initial **service**-level password for the camera.



11.3 Customer Service and Support

If this unit needs service, contact the nearest Bosch Security Systems Service Center for authorization to return and shipping instructions.

USA and **Canada**
Telephone: 800-289-0096, option 5
Fax: 800-366-1329
Email: repair@us.bosch.com

Customer Service
Telephone: 800-289-0096, option 3
Fax: 800-315-0470
Email: orders@us.bosch.com

Technical Support
Telephone: 800-289-0096, option 4
Fax: 800-315-0470
Email: technical.support@us.bosch.com

Europe, Middle East, Africa, and Asia Pacific Regions
Contact your local distributor or Bosch sales office. Use this link: https://www.boschsecurity.com/xc/en/where-to-buy/

12 Maintenance

All bubbles require special care when handling and cleaning to avoid scratches.

Notice!
To avoid excessive moisture saturation inside the housing, limit the amount of time that the bubble is disconnected from the housing. Bosch recommends that the bubble be removed from the housing for no more than five (5) minutes.

Bubble Handling
The bubble may be packaged with a protective plastic sheet. It is recommended that the bubble remain stored this way until it is ready to install. Limit handling the bubble, as any scratches can quickly affect visibility.

Bubble Cleaning
If cleaning the bubble is required, use the following procedures and comply with all the warnings listed below.

Cleaning the Bubble Interior
The extremely soft interior surface should not be cleaned by rubbing or dusting with a cloth. Use clean dry compressed air, preferably from a spray can, to remove any dust from the interior surface.

Warning!
Do not use alcohol-based solutions to clean the bubble. This will cause the surface to cloud and, over time, cause stress aging, which makes the bubble brittle.

Cleaning the Bubble Exterior
The exterior of the bubble is hard-coated for extra protection. If cleaning becomes necessary, only use cleaning solutions and cloths suitable for cleaning safety glass lenses. Dry the bubble thoroughly with a dry nonabrasive cloth to prevent water spots. Never scrub the bubble with any abrasive material or cleaners.
Bosch recommends cleaning the exterior of the bubble with NOVUS “No. 1” Plastic Clean & Shine (or equivalent), according to manufacturer’s instructions. Refer to www.novuspolish.com to order or to find a local distributor.

Cautions
- Do not clean bubbles in the hot sun or on very hot days.
- Do not use abrasive or highly alkaline cleaners on the bubble.
- Do not scrape the bubble with razor blades or other sharp instruments.
- Do not use Benzene, Gasoline, Acetone, or Carbon Tetrachloride on the bubble.

Remove an SD card
1. Follow the steps in one of these sections (depending on the type of camera mount): *Remove the bubble from an in-ceiling housing, page 14* or Remove bubble from a pendant housing.
2. Press down the end of the SD card until it ejects partially from the connector.
3. Pull out the SD card and put it in a safe location.
4. Follow the steps in one of these sections (depending on the type of camera mount): Replace the bubble in an in-ceiling housing or Replace the bubble in a pendant housing.

13 Technical data

For product specifications, see the datasheet for your camera, available on the appropriate product pages of the Online Product Catalog at www.boschsecurity.com.

14 Support services and Bosch Academy

Support

Access our **support services** at www.boschsecurity.com/xc/en/support/.

Bosch Security and Safety Systems offers support in these areas:

- Apps & Tools
- Building Information Modeling
- Warranty
- Troubleshooting
- Repair & Exchange
- Product Security

Bosch Building Technologies Academy

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