Surveillance cabinet

NBA-7070-PA0 | NBA-7070-PA1 | NBA-7070-PA2

en   Installation manual
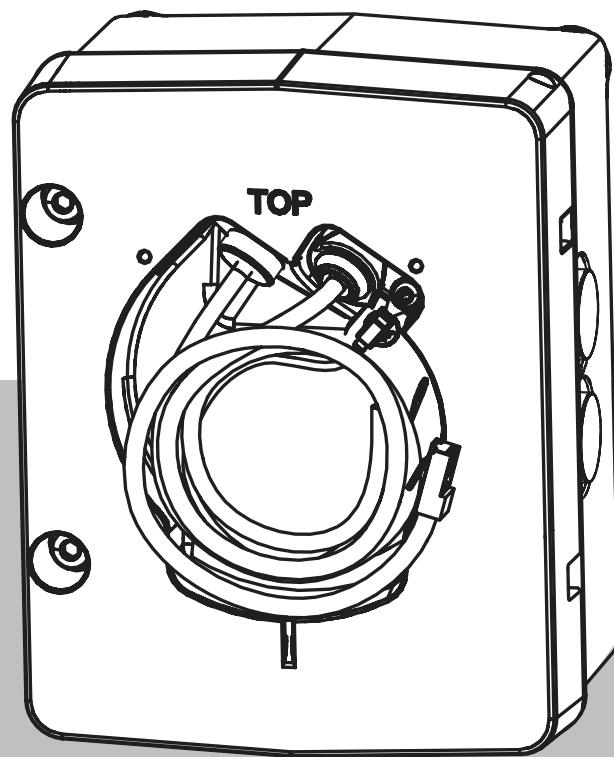
Table of contents

1   Safety and security information

Read, follow, and retain for future reference all of the following safety instructions. Follow all warnings before operating the device.

1.1   Safety message explanation

In this manual, the following symbols and notations are used to draw attention to special situations:

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.

1.2   Safety precautions

Caution!
Installation should only be performed by qualified service personnel in accordance with the National Electrical Code (NEC 800 CEC Section 60) or applicable local codes.

1.3   Important safety instructions

– To clean the device, do not use liquid cleaners or aerosol cleaners.
– Do not install the device near any heat sources such as radiators, heaters, stoves, or other equipment (including amplifiers) that produce heat.
– Do not spill liquids on the device before installation is completed.
– Take precautions to protect the device from power and lightning surges.
– If powered by a power adapter, the adapter should be properly grounded. The power cord must be connected to a socket or outlet with a ground connection.
– Use green/yellow (green with yellow stripe) ground wires.
– Adjust only those controls specified in the operating instructions.
– Operate the device only from the type of power source indicated on the label.
– Unless qualified, do not attempt to service a damaged device yourself. Refer all servicing to qualified service personnel.
– Install in accordance with the manufacturer's instructions in accordance with applicable local codes.
– Use only attachments/accessories specified by the manufacturer.

– Protect all connection cables from possible damage, particularly at connection points.

Notice!

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to EN 55032. 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.

1.4   Notices

UL Disclaimer

Underwriter Laboratories Inc. ("UL") has not tested the performance or reliability of the security or signaling aspects of this product. UL has only tested fire, shock and/or casualty hazards as outlined in Standard(s) for Safety for Information Technology Equipment, UL 62368-1. UL Certification does not cover the performance or reliability of the security or signaling aspects of this product.

UL MAKES NO REPRESENTATIONS, WARRANTIES, OR CERTIFICATIONS WHATSOEVER REGARDING THE PERFORMANCE OR RELIABILITY OF ANY SECURITY OR SIGNALING-RELATED FUNCTIONS OF THIS PRODUCT.

FCC suppliers Declaration of Conformity

F.01U.405.368	NBA-7070-PA0	Surveillance cabinet
F.01U.405.369	NBA-7070-PA1	Surveillance cabinet
F.01U.405.370	NBA-7070-PA2	Surveillance cabinet

Compliance statement

1. This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
   – This device may not cause harmful interference.
   – This device must accept any interference received, including interference that may cause undesired operation.
2. Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

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. 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.

Responsible party

Bosch Security Systems, LLC
130 Perinton Parkway
14450 Fairport, NY, USA

For more information please contact the nearest Bosch Security Systems location or visit:
www.boschsecurity.us
For use in China: CHINA ROHS DISCLOSURE TABLE

Surveillance cabinets
(NBA-7070-PA0, NBA-7070-PA1, NBA-7070-PA2)

Hazardous substance table according to SJ/T 11364-2014						
	Pb (Pb)	Hg (Hg)	Cd (Cd)	Cr 6+ (Cr 6+)	PBB (PBB)	PBDE (PBDE)
Housing & enclosures	O	O	O	O	O	O
PCBA with connectors	X	O	O	O	O	O
Cable assemblies	O	O	O	O	O	O
This table was created according to the provisions of SJ/T 11364						
O: The content of such hazardous substance in all homogeneous materials of such component is below the limit defined in GB/T 26572						
X: The content of such hazardous substance in a certain homogeneous material is above the limit defined in GB/T 26572						

The manufacturing datecodes of the products are explained in:
http://www.boschsecurity.com/datecodes

Canada
CAN ICES-003(A) / NMB-003(A)

For further information on installing this device, see the device's Installation manual. You can find the Installation manual in the product page for your device.
To reach the product page for your device, navigate to the online catalog, available at https://commerce.boschsecurity.com, and enter the order number for your device.

Old electrical and electronic equipment
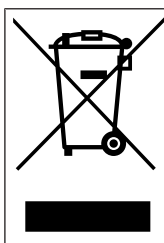
This product and/or battery must be disposed of separately from household waste. Dispose such equipment according to local laws and regulations, to allow their reuse and/or recycling. This will help in conserving resources, and in protecting human health and the environment.

2   Unpacking

- This equipment should be unpacked and handled with care. Check the exterior of the packaging for visible damage. If an item appears 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 from 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

The following table lists the parts included with this mounting package.

Description	Part Number
Surveillance cabinet without transformer (24 VAC)	NBA-7070-PA0
Surveillance cabinet with 120 VAC transformer	NBA-7070-PA1
Surveillance cabinet with 230 VAC transformer	NBA-7070-PA2

2.2   Optional mounting accessories

This table shows the optional parts you may need for attaching a Surveillance cabinet to a wall or a pole.

Mounting Options	Part Number
Pole mount adapter large	NDA-U-PMAL
Fiber optic Ethernet media converter kit	VG4-SFPSCKT

2.3   Description

This chapter describes the installation of a Surveillance cabinet to a wall or a pole. Use one of the accessories from Optional Mounting Accessories for correct mounting. Any variations to the installation procedures are noted.

Only the connections in the unit for power supply are used. You can connect all other wires directly with the connectors on the wires. The unit is a safe, robust and watertight box in which you can make your connections.

Note: You may need to purchase additional mounting accessories for pole mount applications. Refer to Optional Mounting Accessories.

2.4   Tools required

- 5 mm Allen wrench (supplied)
- Small, straight-blade screwdriver - 2.5 mm (0.1 in.)
- T20 screw driver
- No. 2 Phillips screwdriver

- Socket wrench and 9/16-in. socket
- Banding tool (Bosch P/N TC9311PM3T) - if installing a mast (pole) mount

3   Installing the Surveillance cabinet
3.1   Pre-installation checklist

1.   Make sure that you have the correct camera and accessories for the installation in your environment.
2.   Determine the location and distance for the unit based on its voltage and current consumption. Prepare the wires and connections that are necessary to connect your camera.
3.   You can route the main power supply through an intermediate unit (type PA1 or PA2) before connecting the power to a PA0 type unit. Refer to Cable and wire standards for wiring information and distances. See also Routing power through intermediate unit.
4.   Use only UL listed liquid tight strain reliefs for conduits to the unit to ensure that water cannot enter the unit. Use water tight conduits and fittings to meet NEMA 4 standards.

> ⚠ **Caution!**
> Select a rigid mounting location to prevent too much vibration to the camera.

> ⚠ **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.

3.2   Mounting the Surveillance cabinet

Before you mount the unit, decide if you route the wires through the holes in the bottom or in the back of the unit. If you choose the holes in the back, move the 2 seal plugs to the holes in the bottom before you mount the unit.
Use 20 mm (3/4 inch) NPS fittings for the holes on the bottom and back of the unit. Use 15 mm (1/2-inch) NPS fittings for the side holes.

1.   Use the wall mount template supplied with the unit to locate the 4 mounting holes for the unit.
2.   Drill holes for the 4 mounting anchors. For outdoor installation, use a weatherproof sealant around each hole at the mounting surface.

> ⚠ **Warning!**
> A stud diameter of 6.4 mm (1/4 inch) to 8 mm (5/16 inch) able to withstand a 120 kg (265 lb) pull-out force is recommended. The mounting material must be able to withstand this pull out force. For example, 19 mm (3/4 inch) minimum for plywood.

3.   Place the unit into the optional Trim Skirt.
4.   Mount the unit to the mounting surface.
5.
     –   For a Wall installation: Use 4 corrosion-resistant, stainless steel studs (not supplied). Then proceed to Step 6 below.

–   For a Pole installation: The metal straps included with the Pole mount adapter are suitable for a pole with a diameter of 100 - 380 mm (4 - 15 inch). Use a banding tool (not supplied) for a mast or pole installation. Follow the instructions provided with the banding tool to securely mount the Pole mount adapter to the pole. Contact your Bosch Sales Representative to order Banding Tool P/N TC9311PM3T.

6. Attach 20 mm (3/4 inch) NPS watertight pipe fittings (not supplied) to the bottom or back holes of the unit for the routing of the power, video, and control data wires.

3.3   Routing the wires and attaching the connectors

Making the connections

Refer to illustration for numbers.

1. Route all video, control, and alarm wires through the conduit fitting on the right side of the unit (5).
2. Route the power wires through the conduit fitting on the left side of the unit (4).
3. Cut and trim the power and ground wires with sufficient slack to reach their connectors in the unit, but not so long as to be pinched by or to obstruct closing the door. Refer to the image above for the connector locations.
4. Attach the supplied 3-pin Power Plug to the incoming power wires. Refer to connector P101 for wire connections.
5. Attach an RJ45 plug to the incoming Ethernet cable.
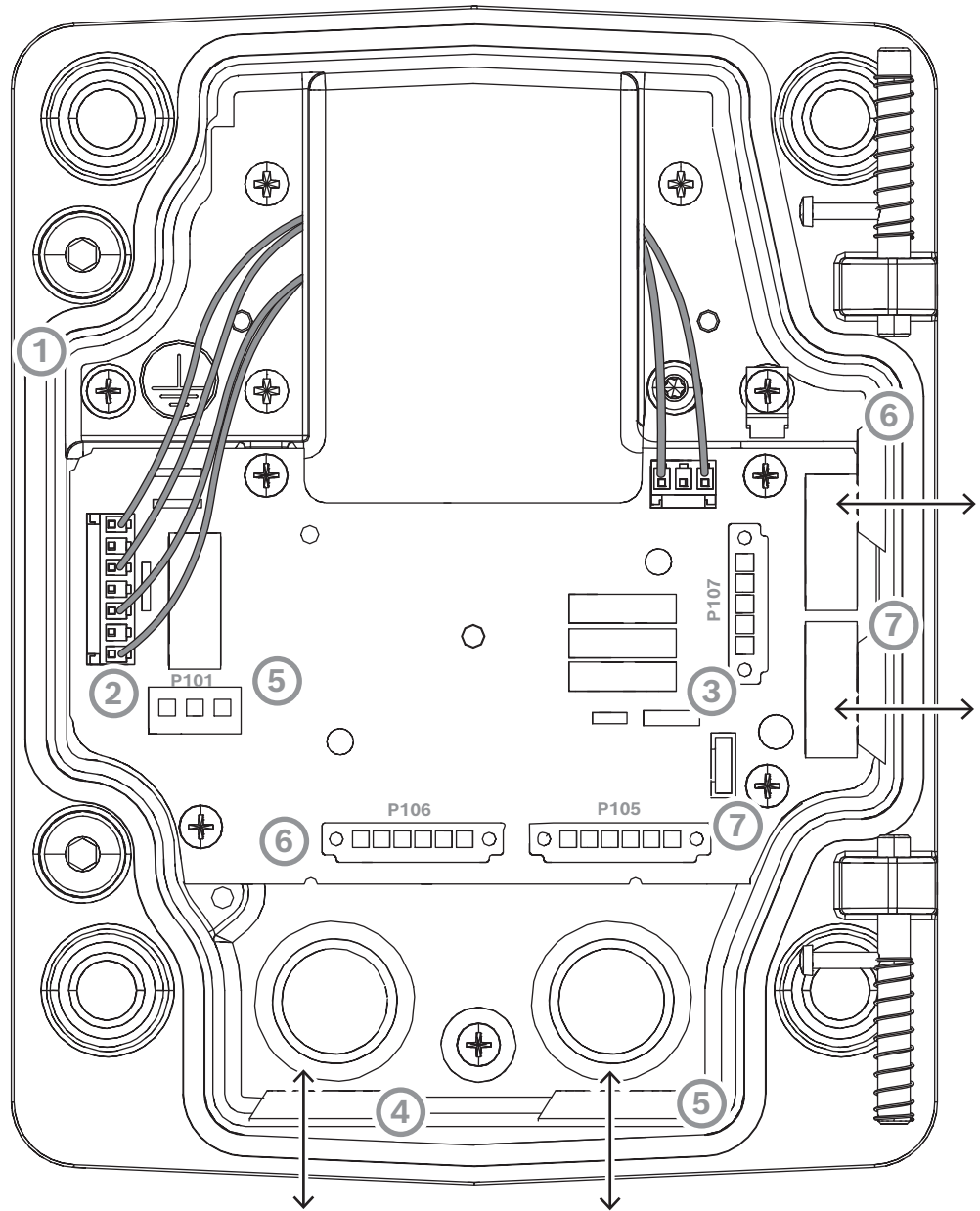
Overview of connections in the unit

1	Ground Screw	5	Right conduit fitting. Use for video, control and alarm wires; 20 mm (3/4 inch) NPS Fitting
2	P101 Connector; Power in (120 VAC / 230 VAC)	6	In/Out; 15 mm (1/2 inch) NPS Fitting
3	P107 Connector; 24 VAC to camera Ethernet connector	7	In/Out; 15 mm (1/2 inch) NPS Fitting
4	Left conduit fitting. Use for power wires 20 mm (3/4 inch) NPS Fitting	8	

Fuse Specifications			
Volts	**XF101 Mains**	**XF102 Camera**	**XF103 Heater**
24 V	T 5.0 A	T 2.0 A	T 3.15 A
115 V	T 1.6 A	T 2.0 A	T 3.15 A
230 V	T 0.8A	T 2.0 A	T 3.15 A

> **Warning!**
> Fuse replacement by qualified service personnel only. Replace with same type fuse.

| No.	Connector	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6
	Ground	Grounding Screw					
P101	115/230 VAC or 24 VAC Power In	Line	NC				
P106	Not used						
P107	24 VAC Power out	Camera 24 VAC	Camera 24 VAC				

Table 3.1: Surveillance cabinet connections

3.4   Routing power through intermediate unit

You can route the main power supply through an intermediate unit (type PA1 or PA2) before connecting the power to a PA0 type unit. This chapter describes how to make the connections for this configuration. You must change the connectors, because the 5-pin power out connector from the PA1 or PA2 unit does not match to the 3-pin power input of the PA0 power supply. The illustration below shows:
– A type PA1 or PA2 unit.
– The main power supply connected to the P101 connector and to the grounding screw.
– The 24 VAC power out wire connected to the P107 heater power connectors.
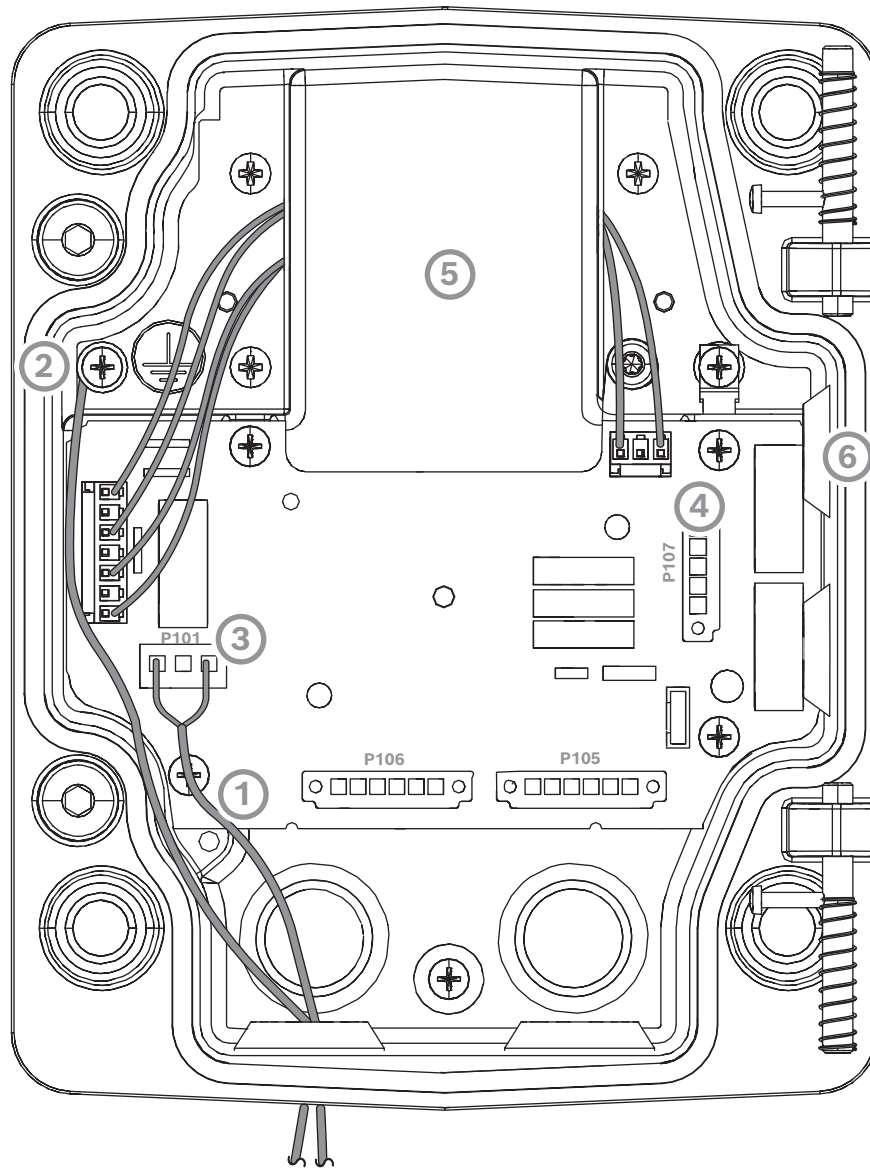
Connections of the power wires in the NBA-7070-PA1 / NBA-7070 PA2 unit

| 1	120/230 VAC Power-in
2	Ground wire
3	P101 connector
4	P107 connector
5	Transformer

For the correct connection of the incoming high voltage and the outgoing low voltage wires, refer to this table:

No.	Connector	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6
	Ground	Grounding screw					

| P101	120/230 VAC power in	Line	NC	Neutral			
P107	24 VAC power out	Camera 24 VAC	Camera 24 VAC				

Table 3.2: NBA-7070-PA1 / NBA-7070 PA2 Surveillance cabinet connections

1. Route the high voltage 120/230 VAC wires through the grounded conduit fitting on the left side of the unit. The unit with a transformer comes with a barrier that separates the high voltage side on the left, from the low voltage side on the right.
2. Cut and trim the high voltage 120/230 VAC power and ground wires with sufficient slack to reach their connector terminal in the box, but not so long as to be pinched by or to obstruct closing the door.
3. Attach the supplied 3-pin power plug to the incoming high voltage power wires in the unit. Refer to connector P101 in the table above and to the image below:
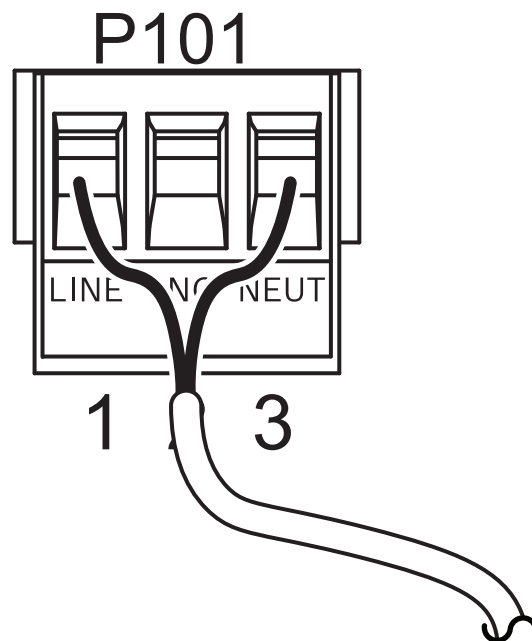

Figure 3.1: Incoming 115/230 VAC power wires

4. Connect the ground wire to the grounding screw.
5. Connect the 24 VAC power cable to the P107 Power Out connector to route the 24 VAC power supply to the PA0 unit.
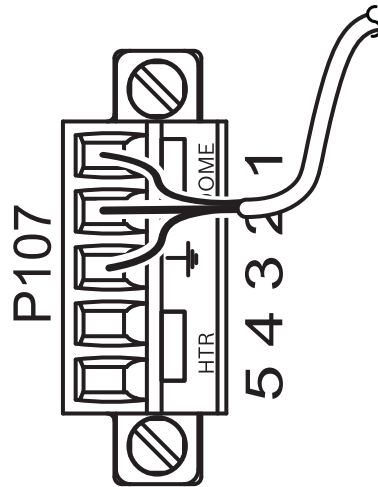
Figure 3.2: Outgoing 24 VAC power wires

6.   Route the 24 VAC outgoing power supply wires into the PA0 unit through the conduit fitting on the left side of the unit.
7.   Cut and trim the 24 VAC power supply and ground wires with sufficient slack to reach their connector terminal in the unit, but not so long as to be pinched by or to obstruct closing the door.
8.   Attach the supplied 3-pin power plug to the incoming 24 VAC power supply wires in the unit, as illustrated below.
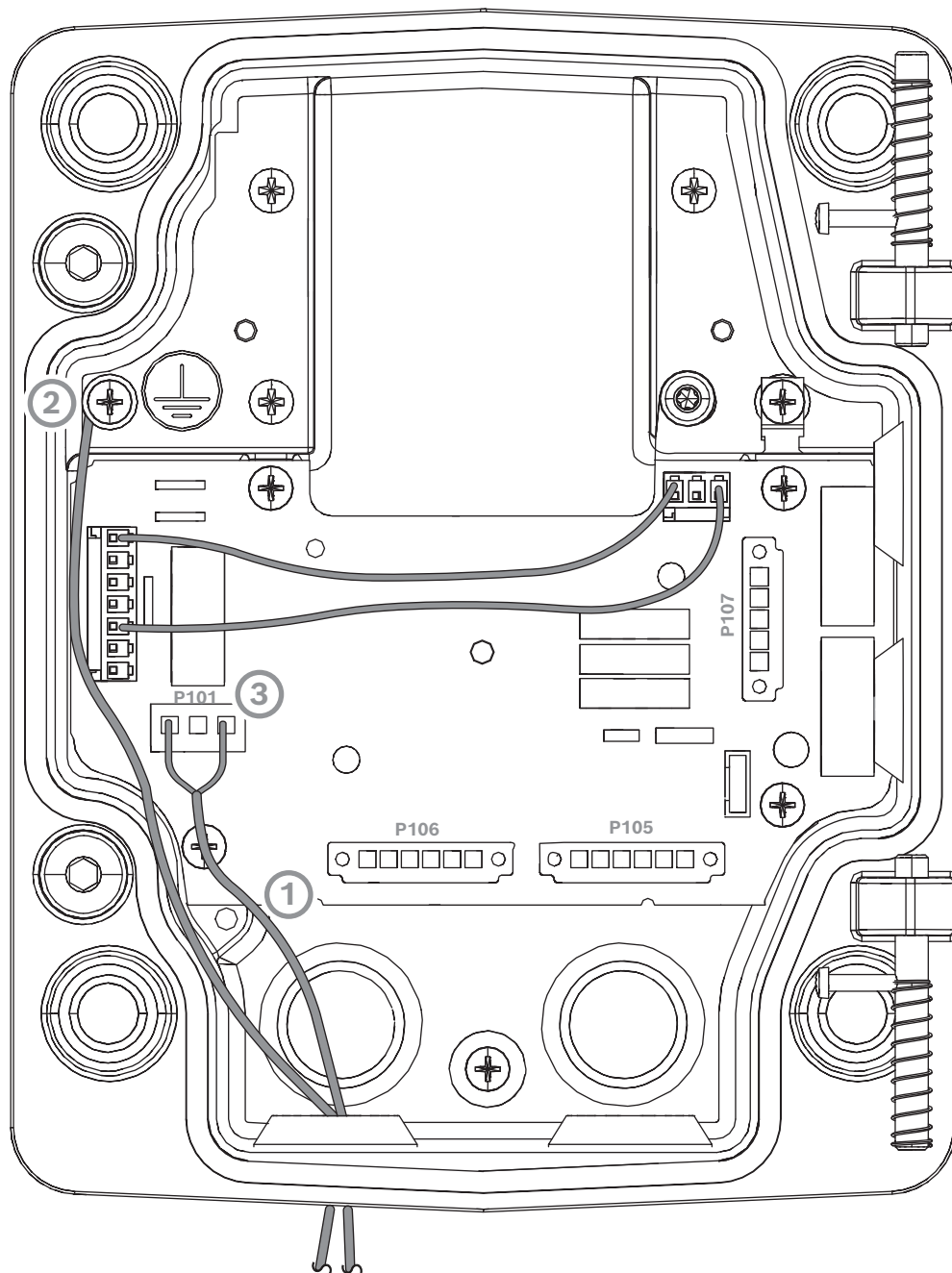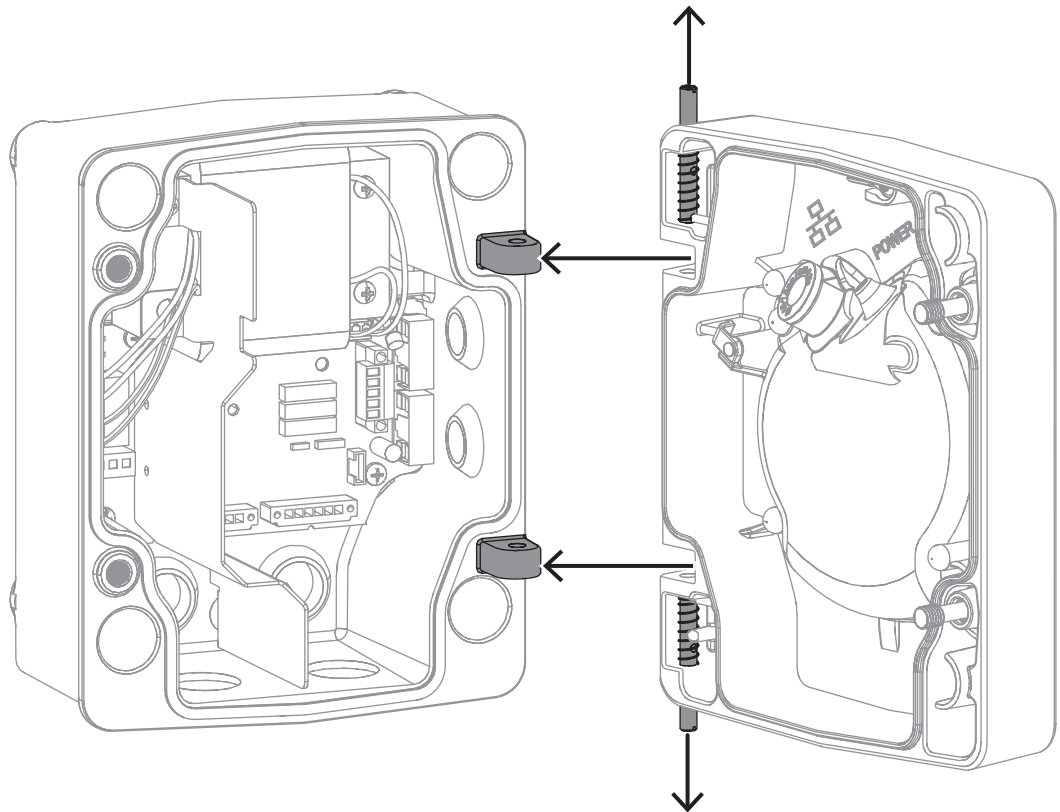
Connect the 24 VAC power supply wires in the NBA-7070-PA0 unit

1	Incoming 24 VAC power supply wires (from PA1 or PA2 unit)
2	Ground wire
3	P101 connector

3.5   Attaching the door

The bottom hinge pin of the door has a Hinge Pin Stop to hold the hinge open when you
attach the arm to the unit.
1.   Push the bottom hinge pin down and rotate it behind the Hinge Pin Stop.
2.   Push the top hinge pin up and hold it.

Notice!
Both Hinge Pins must be fully pushed to unlock the hinges of the door and before you
proceed to the next step.

3.   Hold the top hinge pin open and align the top and bottom hinges of the door to their
      mating points on the unit. See the illustration above.
4.   When you have aligned the hinges, release the top hinge pin to connect with its mating
      hinge on the unit. Then release the bottom hinge pin from the Hinge Pin Stop to lock
      the door to the unit.

Warning!
Serious injury or death can occur if the hinge pins of the door are not fully connected to the
unit. Exercise caution before releasing the door.

3.6   Making connection in unit

Make the connections in the unit, depending on your camera model.
1.   Connect the ground wire to the grounding screw on the left side of the unit.
2.   Connect all wires from the door to their mating wires in the unit. (For Fiber Optic
      models: connect the 6-pin Control to Dome Plug to the P106 connector.)

3.   Connect the 5-pin, 24 VAC to Dome Plug to connector P107.
4.   Connect the 3-pin Power In Plug to its mating connector P101 on the left side of the unit.
5.   Attach the grounding cable from the door to the unit.
6.   After making the connections to the unit, close the door, seal the unit and tighten the 2 captive screws to 10-12 N-m (90-105 in.-lbs).
7.   Refer to the Installation manual of the camera to continue the installation procedure.

Notice!
Make sure that you tighten the screws to 10-12 N-m (90-105 in.-lbs) to ensure the unit is watertight.

3.7   Installing the mounting plate

The mounting plate is used to fix the device to the surveillance cabinet.
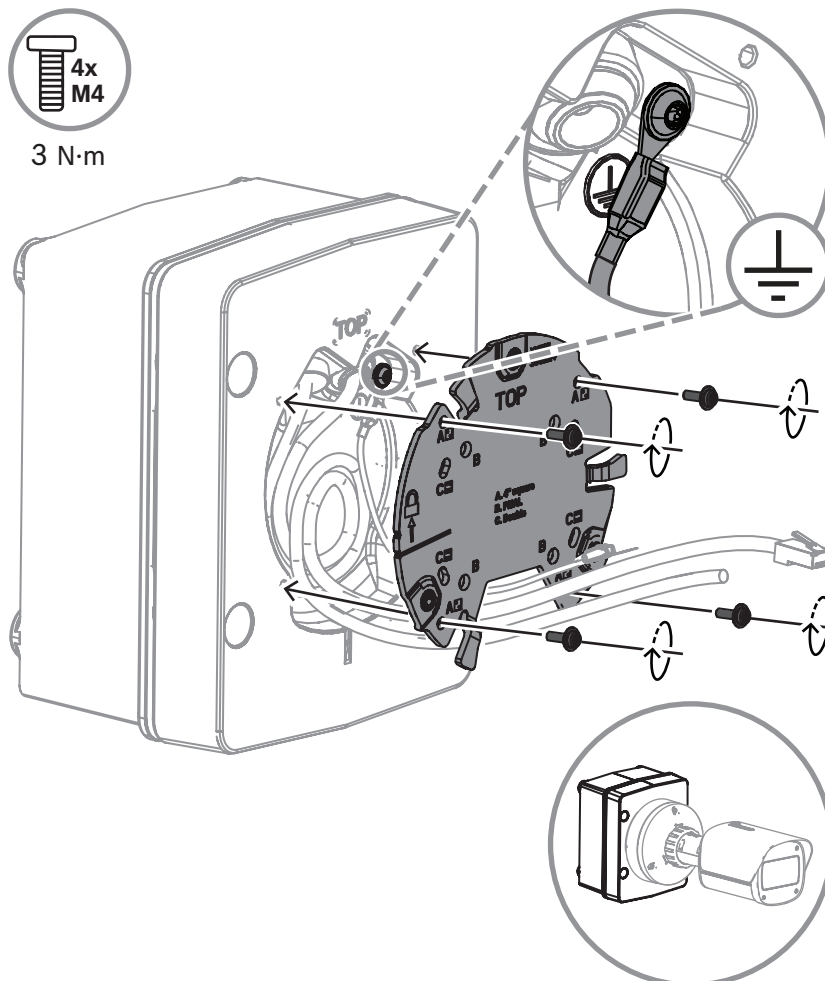
1.   Prepare for installation by having the mounting plate on hand.
2.   Position the mounting plate correctly on the surveillance cabinet. This is ensured by having the TOP indicator facing upwards.
3.   Align your mounting plate with the 4" square box slots.
4.   Attach the mounting plate to the surface with 4 screws. Tighten the screws (3 Nm) to secure.

5.   For further information on camera installation, refer to the device's Installation manual and/or Quick installation guide.

4   Connections for video, control, alarm and relay

4.1   Using fiber optic ethernet media converter to transmit video and control

The Small Form-factor Pluggable (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	60 km (37.3 miles)
Requirement	Media converter receiver (CNFE2MC/IN) at controller end of system
Terminal Connection	Duplex LC or Single SC

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