

High PoE Midspans

NPD-6001A | NPD-9501A



BOSCH

en Installation Manual

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1 Safety

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

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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

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

Danger!



High risk: This symbol indicates an imminently hazardous situation such as “Dangerous Voltage” inside the product. If not avoided, this will result in an electrical shock, serious bodily injury, or death.

**Caution!**

Medium risk: Indicates a potentially hazardous situation. If not avoided, this may result in minor or moderate injury. Alerts the user to important instructions accompanying the unit.

**Caution!**

Low risk: Indicates a potentially hazardous situation. If not avoided, this may result in property damage or risk of damage to the unit.

**Notice!**

This symbol indicates information or a company policy that relates directly or indirectly to the safety of personnel or protection of property.

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.

- FOR INDOOR USE ONLY
- The unit is intended only for installation in a Restricted Access Location.
- Installation and removal of the midspan must be carried out by qualified personnel only.
- Follow basic electricity safety measures whenever connecting the midspan to its power source.
- **AC Power Cord Set:** Although the High PoE Midspan 60W, Single port ships with one (1) 120 V power cord and one (1) 230 V power cord, please note the following as it applies to your region:
 - The power cord must have regulatory agency approval for the specific country in which it is being used (i.e., UL, CSA, VDE, etc.).

- The power cord must be a three-conductor type (two current carrying conductors; one ground conductor) terminated on one end by an IEC 60320 appliance coupler (for connection to the midspan), and on the other end by a plug containing a ground (earthing) contact.
- The power cord must be rated for a minimum of 250 VAC RMS operation, with a minimum rated current capacity of 5 Amps (or a minimum wire gauge of 18 AWG (0.75mm²).
- Midspans installed in Australia require power cords with a minimum wire gauge of 16 AWG (1.0 mm²).
- A voltage mismatch can cause equipment damage and may pose a fire hazard. If the voltage indicated on the label is different from the power outlet voltage, do not connect the midspan to this power outlet.
- The AC wall socket-outlet must be near the midspan and easily accessible. You can remove AC power from the midspan by disconnecting the AC power cord from either the wall socket-outlet or the midspan appliance coupler.
- The PoE injector "Data In" and "Data & Power Out" ports are shielded RJ45 data sockets. They cannot be used as Plain Old Telephone Service (POTS) telephone sockets. Only RJ45 data connectors can be connected to these sockets.
- The Data In and Data & Power Out interfaces are qualified as SELV (Safety Extra-Low Voltage) circuits according to IEC 60950-1. These interfaces can only be connected to SELV interfaces on other equipment.

Recycling and Disposal:



Your Bosch product was developed and manufactured with high-quality material and components that can be recycled and reused. This symbol means that electronic and electrical appliances, which have reached the end of their working life, must be collected and disposed of separately from household waste material. Separate collecting systems are usually in place for disused electronic and electrical products. In the United States, please dispose of these units at your local communal waste collection point or at a recycling center. In the EU, please dispose of these units at an environmentally compatible recycling facility, per *European Directive 2002/96/EC*.

1.5 Customer Support and Service

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

Service Centers

USA

Telephone: 800-366-2283 or 585-340-4162

Fax: 800-366-1329

Email: cctv.repair@us.bosch.com

Customer Service

Telephone: 888-289-0096

Fax: 585-223-9180

Email: security.sales@us.bosch.com

Technical Support

Telephone: 800-326-1450

Fax: 585-223-3508 or 717-735-6560

Email: technical.support@us.bosch.com

Repair Center

Telephone: 585-421-4220

Fax: 585-223-9180 or 717-735-6561

Email: security.repair@us.bosch.com

Canada

Telephone: 514-738-2434

Fax: 514-738-8480

Europe, Middle East & Africa Region

Please contact your local distributor or Bosch sales office. Use this link:

<http://www.boschsecurity.com/startpage/html/europe.htm>

Asia Pacific Region

Please contact your local distributor or Bosch sales office. Use this link:

http://www.boschsecurity.com/startpage/html/asia_pacific.htm

More Information

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

2 Unpacking

2.1 Parts List

The package containing the midspan should include the following items:

Quantity	Part
1	Midspan: High PoE Midspan 60W, Single port, AC in or High PoE Midspan 95W
1	120 V power cord
1	230 V power cord
1	Installation Manual (this document)

2.2 Additional Parts Required

The following table lists additional parts (not supplied by Bosch) required to install the midspan:

Quantity	Part	Size	Notes
2	Mounting screws; Select either size (but not both).	Head diameter: 5.8 mm (0.23 in.)	1.5 mm (0.059 in.) clearance from mounting surface
		Head diameter: 7 mm (0.27 in.) Head height: 2 mm (0.08 in.)	2.5 mm (0.098 in.) clearance from mounting surface
2	CAT5 cables	Not to exceed 100 m (333 ft) each	1 cable to connect to the “Data & Power Out” port. 1 cable to connect to the “Data In” port.

2.3 Tools Required

Screwdriver

2.4 Additional Parts Recommended But Not Required

The following table lists additional parts (not supplied by Bosch) recommended to install the midspan:

Quantity	Part
1	Surge suppressor
1	Splitter
1	Universal Power Supply (UPS)

3 System overview

Bosch sells two (2) models of midspans (a 60 W model and a 95 W model) that enable remote power over an IP network connection for specific Bosch IP cameras. Rated for indoor installation only, the midspans can be installed indoors and wired to a camera installed outdoors.

Each midspan has a single port and is designed to carry data and power over a standard CAT5e (or better) cable, delivered through all 4 pairs.

60 W Midspan

The 60 W midspan (NPD-6001A) enables remote High Power over Ethernet (High PoE) for various Bosch IP/HD PTZ cameras. Generating a maximum of 60 W, it complies to both the IEEE 802.3af and the IEEE 802.3at standards, while doubling the available power.

This model of midspan is necessary to supply power to the heater for an outdoor AUTODOME 7000 camera.

It can also supply power to a standard model of MIC7000 without an illuminator accessory.

95 W Midspan

The 95 W midspan (NPD-9501A) is a high-power PoH (Power Over HDBase T) device that provides data and power between an Ethernet (remote network) switch and a MIC7000 camera. It supports the proposed standard for a 95 W output device, and is backwards compatible to both the IEEE 802.3af and the IEEE 802.3at standards (15.4 W and 25.5 W).

This model of midspan can supply power to all models of MIC7000.

Notes

Note: Do NOT use cross-over cable between the Data & Power Out port and the camera!

Note: The midspan is not a repeater and does not amplify the Ethernet data signal.

Note: The total length of Cat5e/Cat6 cable must be less than 100 m (328 ft) between the camera and the head-end system.

4 Installation

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, Inc. accepts no liability for any damages or losses caused by incorrect or improper installation.



Warning!

FOR INDOOR USE ONLY

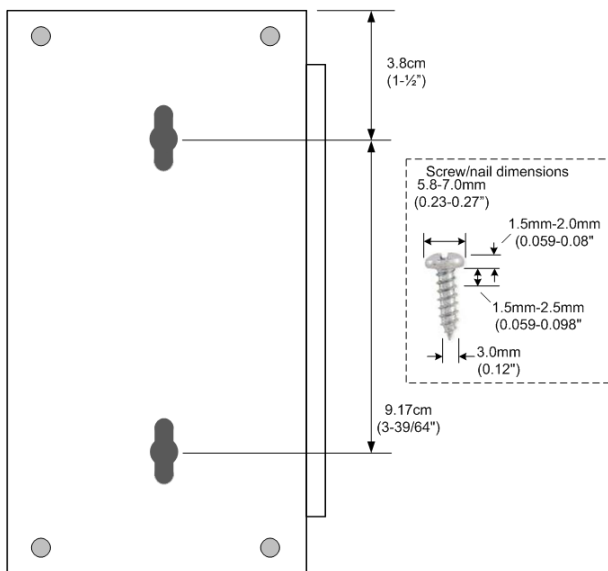
Place the midspan on a desktop, or mount it to a wall, a bench, or a shelf using the mounting holes in the bottom of the device. Before mounting the midspan to a fixed location, note the following:

- Do not cover the midspan or block the airflow to the PoE with any foreign objects.
- Keep the midspan away from excessive heat and humidity and free from vibration and dust.
- Ensure that the cable length from the Ethernet network source to the terminal does not exceed 100 meters (333 feet). The midspan is not a repeater and does not amplify the Ethernet data signal.
- No “on-off” switch exists; simply plug the midspan into an AC power source.

Mount the Unit Directly to a Flat Surface

1. Select the mounting location and surface. Ensure that the selected surface will be able to support the weight of the unit (400 g / 0.88 lb). Note that this unit is intended only for installation in a Restricted Access Location.

2. Install two mounting screws (user-supplied) in the selected mounting surface, at a distance of 9.17 cm / 91.7 mm (3.61 in.) apart from the center of each screw.
3. Align the mounting holes on the bottom of the unit to the screws. Slide the unit into place.



Stack One Unit on Top or on the Side of Another Unit

Slide the rail on the right side (when facing the ports) of one unit to the left side (when facing the ports) of a second unit.

5 Connection

Notice!



The PoE ports “Data In“ and “Data & Power Out“ are shielded RJ45 data sockets. They cannot be used as “Plain Old Telephone Service” (POTS) telephone sockets. Connect only RJ45 data connectors (EIA 568A and 568B) to these ports. The “Data In” and “Data & Power Out” interfaces are qualified as “Safety Extra Low Voltage” (SELV) circuits according to IEC 60950-1. These interfaces can be connected only to SELV interfaces on other equipment.

1. Connect the midspan to an AC power outlet (100 – 240 VAC), using one of the two power cords supplied, or one that has the appropriate ratings and specifications (see the Safety chapter).
Note: The voltage of the power outlet must match the voltage indicated on the midspan label.
2. Connect the Data In (input) port to the remote Ethernet network switch.
3. Connect the Data & Power Out (output) port to the Ethernet port on the AutoDome camera.
Note: Do NOT use cross-over cable!

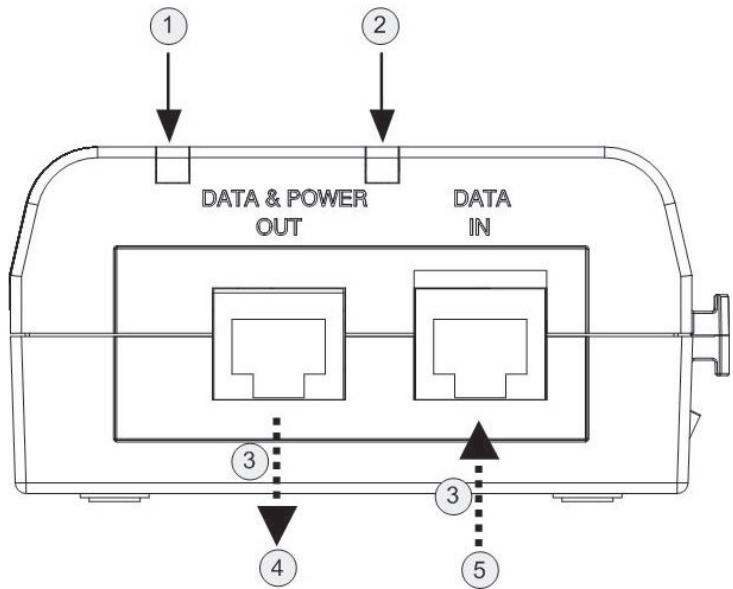


Figure 5.1: Midspan_DataIn_DataOut_Connections

1	AC input connectivity indicator
2	Port connectivity indicator
3	CAT5 cable
4	Connection to camera
5	Connection to Ethernet switch

6 Troubleshooting

The following tables identify the LED indicators on the top of the midspan.

AC (Main) LED Indicator (60 W and 95 W)

AC (Main) LED	OFF	Green
Green	Power off indicator	Power on indicator (power is active)

Port LED Indicator (60 W)

Port LED	Behavior
– OFF	– No detection or disconnected or no load is connected.
– Yellow ON	– Power is supplied over the data pair or over the spare pair.
– Green ON	– Power is supplied over the data and spare pairs together.
– Blinking yellow at 1 Hz rate	– Over current or short circuit condition at one of the 2 pairs (the other pair is OFF) - data or spare, (PD or cable fault)
– Blinking yellow and green at 1 Hz rate	– Over current or short circuit condition at one or both pairs - data or/and spare, (PD or cable fault)
– Blinking yellow or green at 4 Hz rate	– Internal fault condition

Port LED Indicator (95 W)

Port LED	Behavior
– OFF	– Nothing is connected to the port.
– Yellow ON	– Power is supplied over the data pair or over the spare pair.
– Green ON	– Power is supplied over the data and spare pairs together.
– Blinking green at 0.5 Hz rate	– Port was powered at four pairs, then a short circuit condition or an over voltage limit (OVL) event occurred.
After AC voltage is supplied, the green LED will blink, and then the yellow LED will blink, each for one second.	

Troubleshooting Steps

Symptom	Corrective Steps
<ul style="list-style-type: none"> - The midspan does not power up. 	<ol style="list-style-type: none"> 1. Verify that a reliable power cord is used. 2. Verify that the voltage at the power inlet is between 100 and 240 VAC. 3. Remove and re-apply power to the device and then check the indicators during power up sequence.
<ul style="list-style-type: none"> - The midspan does not operate, but no port indicator is lit. 	<ol style="list-style-type: none"> 1. Verify that the midspan detects the camera. 2. Verify that you are using a standard Category 5/5e/6, straight-wired cable, with four pairs. 3. If an external power splitter is used, replace it with a splitter known to operate. 4. Verify that the input Ethernet cable is connected to the Data In port. 5. Verify that the camera is connected to the Data & Power Out port. 6. Try to reconnect the camera to a different midspan. If the camera works, then there is probably a faulty port or RJ45 connection on the midspan. 7. Verify that there is not a short over any of the twisted pair cables or over the RJ45 connectors.

<p>– The camera operates, but there is no data link.</p>	<ol style="list-style-type: none">1. Verify that the port indicator on the front panel is continuously lit.2. If an external power splitter is used, replace it with a splitter known to operate.3. Verify that for this link, you are using standard UTP/FTP Category 5 straight (non-crossover) cabling, with all four pairs.4. Verify that the Ethernet cable length is less than 100 meters from the Ethernet source to the camera.5. Try to reconnect the camera to a different midspan. If the camera works, then there is probably a faulty port or RJ45 connection on the midspan.
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Bosch Security Systems, Inc.

850 Greenfield Road
Lancaster, PA, 17601
USA

www.boschsecurity.com

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Bosch Sicherheitssysteme GmbH

Robert-Bosch-Ring 5
85630 Grasbrunn
Germany