Quick Start Guide

Industrial Gigabit Ethernet PoE Injectors, PoE++, 802.3bt

Models: NPOEI-60W-1G, NPOEI-90W-1G

Este manual está disponible en español en la página de Tripp Lite: tripplite.com/support

Ce manuel est disponible en français sur le site Web de Tripp Lite : tripplite.com/support

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WARRANTY REGISTRATION

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Product Features

- Deliver power and data up to 328 ft. (100 m) through existing cabling
- Extend power and data to any PoE or PoE+ device installed where no AC outlet is available
- Support Gigabit Ethernet data transfer speeds up to 1000 Mbps (1 Gbps)
- Maximum output of 57V can compensate for voltage drop on long cable runs
- PD detection function determines whether devices connected to the system are compatible
- Compact, hand-sized metal housings ready for mounting on any DIN rail
- Plug-and-play operation with no configuration required for easy, immediate installation

Package Contents

- NPOEI-60W-1G or NPOEI-90W-1G PoE Injector
- DIN Rail Kit
- Quick Start Guide

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Applications

The PoE Injectors provide power up to 60W (NPOEI-60W-1G) or 90W (NPOEI-90W-1G) to use power more efficiently on PoE devices, including surveillance cameras, VoIP phones, outdoor kiosks and smart PoE lights.
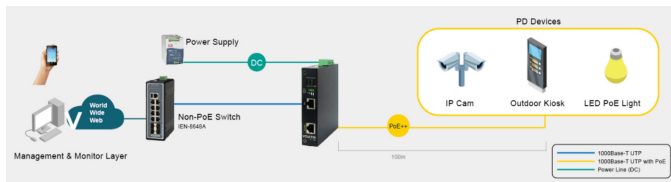
Notes:

- *NPOEI-60W-1G is recommended for Wi-Fi applications that require more than 30W of power.*
- *NPOEI-90W-1G is recommended for outdoor applications to supply power to LED lights, 360° cameras and heater elements.*

Mounting and Dismounting Instructions

Notes:

- *These open-type devices shall be DIN-rail mounted or wall mounted (optional) in a cabinet or enclosure where the ambient temperature shall not exceed 75°C.*
- ***Caution:** Hot surface! Do not touch. Please wear protective equipment before coming into contact.*
- *A corrosion-free mounting rail is advisable. When installing, allow enough space between devices to properly install cabling and provide room for proper airflow.*

To mount, place the PoE injector on the DIN rail using the slot. Push the front of the unit toward the mounting surface until it snaps into place with a "click" sound.

To dismount, press the unit from the top, and pull out the lower edge of it. Remove the unit from the DIN rail.
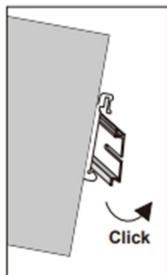
Mounting the Injector
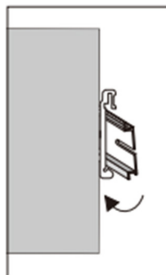
Removing the Injector

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Grounding the PoE Injector

Note: These PoE injectors are intended to be mounted to a well-grounded mounting surface, such as a metal panel.

Grounding and wire routing help limit the effects of line noise due to electromagnetic interferences (EMI). Run the ground connection from the ground screw to the grounding surface before connecting.

Wiring Requirements

Note: Safety measures should be taken before connecting the power cable. Please turn off the power before connecting any modules or wires. The correct power supply voltage is listed on the product label. Check the voltage of your power source to make sure you are using the correct voltage. DO NOT use a voltage greater than what is specified on the product label. If the current exceeds the maximum rating, the wiring can overheat and cause serious damage to your equipment.

- Use separate paths to route wiring for power and devices. If the power wiring and device wiring paths must cross, make sure the wires are perpendicular at the intersection point. *Note: Do not run signal or communications wiring and power wiring through the same wire conduit. To avoid interference, wires with different signal characteristics should be routed separately.*
- You can use the type of signal transmitted through a wire to determine which wires should be kept separate. The rule of thumb is that wiring that shares similar characteristics can be bundled together.
- You should separate input wiring from output wiring.
- It is recommended that you label the wiring to all system devices.

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Wiring Requirements

Wiring Power Input
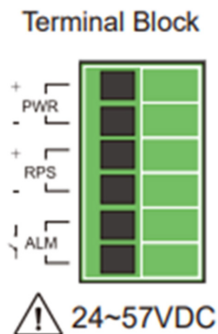
Terminal Block

You can use "Terminal Block (PWR)" for Primary Power Input and "Terminal Block (RPS)" for secondary power source for Redundant Power Input.

Caution:

- *Use copper conductors only*
- *Wiring cable temperature should support at least 105°C*
- *Tighten the wire to a torque value of 4.5 lb./in.*
- *Wire gauge for the terminal block should range between 14 AWG and 20 AWG*

Wiring Requirements

Connecting to Terminal Block

To insert power wire and connect the 24-57VDC at a maximum of 4A DC power to the power terminal block, please follow the steps below:

1. Use a flat-head screwdriver to loosen the wire-clamp screws.
2. Insert the negative/positive DC wires into the PWR-/PWR+ terminals.
3. Tighten the wire-clamp screws to prevent the wires from loosening.

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Wiring Requirements

Wiring the Relay Contact (ALM)

The NPOEI-60W-1G and NPOEI-90W-1G have one set of relay alarm outputs. This relay contact uses two contacts of the terminal block on the top panel of the unit. The two contacts of the 6-pin terminal block connector are used to detect user-configured events. The two wires attached to the fault contacts form an open circuit when a user-configured event occurs. If a user-configured event does not occur, the fault circuit will remain closed. Therefore, in the event of a power loss by main power or aux power or system overload, an external signal can be detected.

See the chart below:
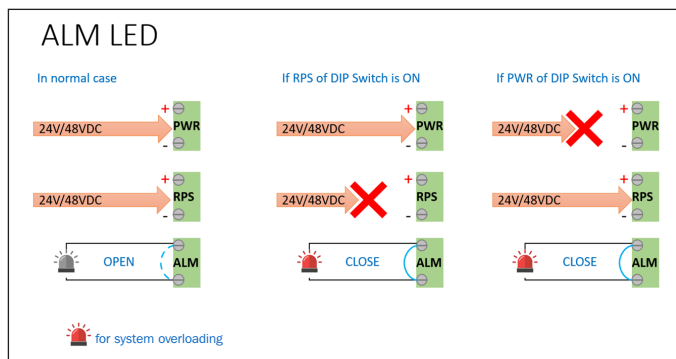
Wiring Requirements

RJ45 Cabling

Connect one end of a user-supplied RJ45 cable to an Ethernet port and the other end to the PoE Injector.
Note: Cat5e cable or above is recommended for best results.

DIP Switch Settings
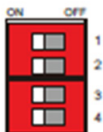
PWR	ON	Primary power alarm reporting enabled
	OFF	Primary power alarm reporting disabled
RPS	ON	Redundant power alarm reporting enabled
	OFF	Redundant power alarm reporting disabled
NBT	ON	Legacy mode enabled; 2-pair detection support
	OFF	802.3bt Standard mode enabled; 4-pair detection support
RSV	Reserved	

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Specifications

General Specifications		
Product Name	NPOEI-60W-1G	NPOEI-90W-1G
Product Type	PoE Injector	PoE Injector
Housing	Metal	Metal
Housing Rating	IP-30	IP-30
Weight	0.85 lb. (385 g)	0.85 lb. (385 g)
Dimensions	1 x 4.6 x 4 in. (2.5 x 11.6 x 10 cm)	0.9 x 4.3 x 2.9 in. (2.4 x 10.9 x 7.4 cm)
Port 1	10/100/1000Base-T RJ45	10/100/1000Base-T RJ45
Port 2	10/100/1000Base-T 60W PoE++	10/100/1000Base-T 90W PoE++
Operating Temperature Range	-40° to 75° C	-40° to 75° C
Operating Humidity Range	5 to 95% RH, Non-Condensing	5 to 95% RH, Non-Condensing
Storage Temperature Range	-40° to 85° C	-40° to 85° C
Storage Humidity Range	5 to 95% RH, Non-Condensing	5 to 95% RH, Non-Condensing
MTBF Calculated @ 25	645,827 hours	645,827 hours
MTBF Calculated @ 75	81,636 hours	81,636 hours
LED Panel	PWR, RPS, ALM, PoE, NBT, 63~66W PoE Usage (15, 30, 60)	PWR, RPS, ALM, PoE, NBT, 93~96W PoE Usage (15, 30, 60, 90)
Cooling Fan	N/A	N/A
DIP Switch Settings	PWR, RPS, NBT, RSV	PWR, RPS, NBT, RSV
Electrical Specifications		
Max PoE Budget	60W	90W
Input Power	Dual 24 ~ 57 VDC, Terminal Block	Dual 24 ~ 57 VDC, Terminal Block
Output Voltage	48 – 57 VDC	48 – 57 VDC
Max Current	600 ma/pair	960 ma/pair
Supported Modes	Mode A, Mode B, 4-Pair Mode	4-Pair Mode Mandatory
Power Management	6 power class levels (1-6)	8 power class levels (1-8)

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Specifications

Specification Conformance		
Normal Specification	IEEE 802.3af (Type1), 802.3at (Type 2), 802.3bt (Type 3)	IEEE 802.3af (Type1), 802.3at, 802.3bt Type 3, 4)
MDI/MDX	Yes	Yes
Plug and Play	Yes	Yes
PD Detection Function	Yes	Yes
Overload Protection	Yes	Yes
Meets RoHS 3 Specifications	Yes	Yes
Meets FCC Requirements	Yes	Yes
Vibration Specification	EN 60068-2-6	EN 60068-2-6
Shock Specification	EN-60068-2-27	EN 60068-2-27
Free Fall Specification	EN 60068-2-32	EN 60068-2-32
Meets IEC 61000-4-2 (ESD)	Yes, Air 15KV / Contact 8KV	Yes, Air 15KV / Contact 8KV
Meets IEC 61000-4-3 (RS)	Yes	Yes
Meets IEC 61000-4-4 (EFT)	Yes	Yes
Meets IEC 61000-4-5 (Surge)	Yes	Yes
Meets IEC 61000-4-6 (CS)	Yes	Yes
Meets IEC 61000-4-8 (PFMF)	Yes	Yes
Supports Cisco UPoE Standard	Yes	Yes
Supports Type 1 Devices (15.4W)	Yes	Yes
Supports Type 2 Devices (30W)	Yes	Yes
Supports Type 3 Devices (60W)	Yes	Yes
Supports Type 4 Devices (90W)	No	Yes
Supports 802.11ax Wi-Fi 6	Yes	Yes
Supports IEEE 802.bt IP Cameras from Bosh and Axis	Yes	Yes

LED Indicators

NPOEI-60W-1G		
PWR (Green)	Illuminated	Primary Power on
	Off	Primary Power off or failure
RPS (Green)	Illuminated	Redundant Power on
	Off	Redundant Power off or failure
ALM (Red)	Illuminated	Alarm for following conditions (when DIP switches are turned on): • Primary Power lost • Secondary Power lost • PoE overload
	Off	Normal operation
PoE (Green)	Illuminated	PoE in use & <15W if w/o illumination of PoE Usage LEDs
	Off	No PoE in use
NBT (Green)	Illuminated	2-pair detection mode enabled
	Off	Default 4-pair detection mode enabled
63~66W (Red)	Blinking	Overload (>=63W, <=66W)
	Off	No power delivery or <63W or >66W of PoE max loading (PoE power cutting)
PoE Usage (Green)	15	Injector provides PoE power range 15W~<30W
	30	Injector provides PoE power range 30W~<60W
	60	Injector provides PoE power range >60W

LED Indicators

NPOEI-90W-1G		
PWR (Green)	Illuminated	Primary Power on
	Off	Primary Power off or failure
RPS (Green)	Illuminated	Redundant Power on
	Off	Redundant Power off or failure
ALM (Red)	Illuminated	Alarm for following conditions (when DIP switches are turned on): • Primary Power lost • Secondary Power lost • PoE overload
	Off	Normal operation
PoE (Green)	Illuminated	PoE in use & <15W if w/o illumination of PoE Usage LEDs
	Off	No PoE in use
NBT (Green)	Illuminated	2-pair detection mode enabled
	Off	Default 4-pair detection mode enabled
93~96W (Red)	Blinking	Overload (>=93W, <=96W)
	Off	No power delivery or <93W or >96W of PoE max loading (PoE power cutting)
PoE Usage (Green)	15	Injector provides PoE power range 15W~<30W
	30	Injector provides PoE power range 30W~<60W
	60	Injector provides PoE power range 60W~<90W
	90	Injector provides PoE power range >90W

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Warranty and Product Registration

3-Year Limited Warranty

Seller warrants this product, if used in accordance with all applicable instructions, to be free from original defects in material and workmanship for a period of three (3) years from the date of initial purchase. If the product should prove defective in material or workmanship within that period, Seller will repair or replace the product, at its sole discretion.

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Under the Waste Electrical and Electronic Equipment (WEEE) Directive and implementing regulations, when customers buy new electrical and electronic equipment from Tripp Lite, they are entitled to:

• Send old equipment for recycling on a one-for-one, like-for-like basis (this varies depending on the country)

• Send the new equipment back for recycling when this ultimately becomes waste

Use of this equipment in life support applications where failure of this equipment can reasonably be expected to cause the failure of the life support equipment or to significantly affect its safety or effectiveness is not recommended.

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