User Manual

Super Voltage Booster 12/24/48 VDC Industrial Giga-bit
4 port POE Injector
with RJ-45/SFP combo port and SFP

(P/N: 41NE-IPG42100-A00)

FCC MARKING

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.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received; including interference that may cause undesired operation.

CE MARKING

This equipment complies with the requirements relating to electromagnetic compatibility, EN 55022 class A for ITE, the essential protection requirement of Council Directive 2004/108/EC on the approximation of the laws of the Member States relating to electromagnetic compatibility.

Company has an on-going policy of upgrading its products and it may be possible that information in this document is not up-to-date. Please check with your local distributors for the latest information. No part of this document can be copied or reproduced in any form without written consent from the company.

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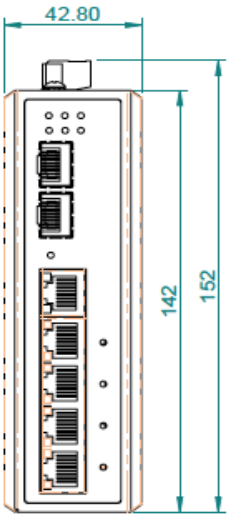
Introduction

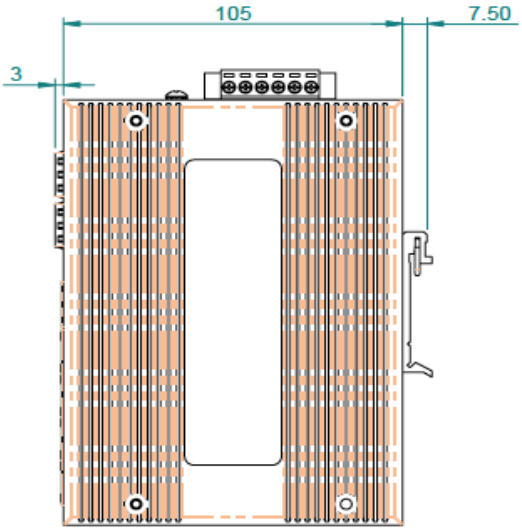
This rugged designed Industrial Ethernet switch / Industrial Giga-bit 4 port POE Injectors and Super Booster Industrial Giga-bit 4 port POE Injectors, which comply with IEEE802.3af and IEEE802.3at, has pass many rigorous environmental test. It delivers 30watts power per POE port. (POE models) And it can generate total 120 watts power to PD devices. the uplink 2 SFP port (varied by models), can extend your environment to a much larger area.

The super voltage booster model uses 12/24/48VDC input to boost voltage to 55VDC. it guaranty to meet IEEE802.3at and to delivery full POE power up to 36Watts per POE port to a PD. With its multi-purpose design, it can also be used for Din-Rail or wall-mounted. It is an ideal unit for IP surveillance, traffic monitoring and Security application in critical environment. It can tolerate -40°C to 75°C in harsh environment to perform a reliable network.

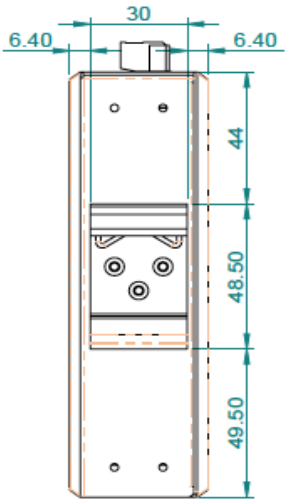
Housing Dimension



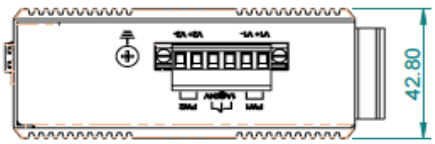
Front view



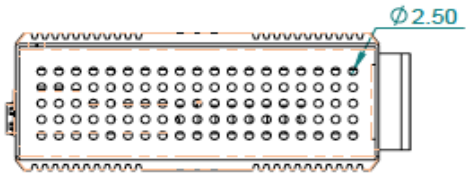
Side view



Back view



Top view

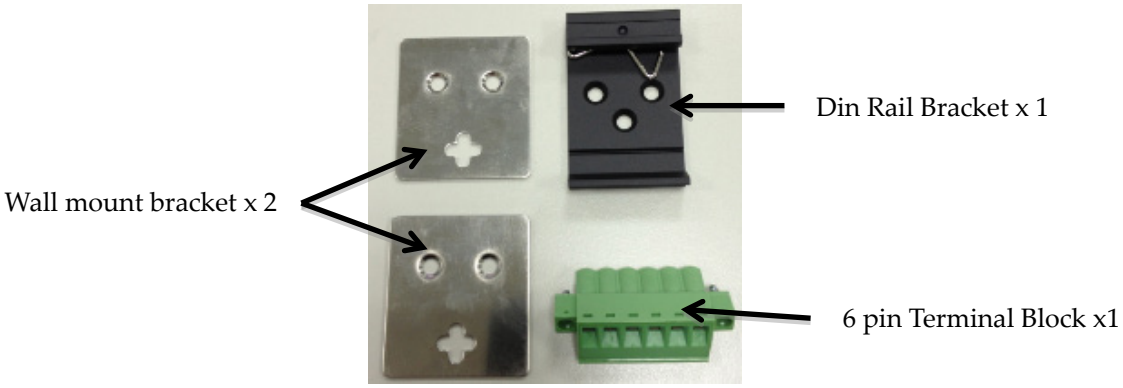


Bottom view

MODELS –
Super Booster Industrial Giga-bit 4 port POE Injector, 12/24/48 VDC input
This Super Voltage Booster --- The high power 4 port industrial POE+ Injector is equipped with our high efficiency ColdDesign technology which allows low input voltage, such as 12/24/48VDC be boost up to 55VDC to meet IEEE802.3at requirement. The ColdDesign technology will not only boost up Input Voltage, also reduce the excessive heat problem to a minimum. It accepts the input voltage as low as 12VDC, to be boost up to 55VDC. And it is also equipped with 2 port SFP fiber that can be used as fiber redundancy, cascaded to your other devices to expand your network application. It is being rigorously tested for your Security, Transportation and Telco application.

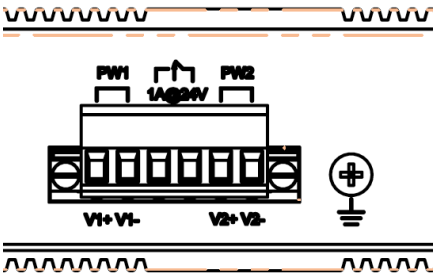
Installation package

This unit can be installed by din-rail mounted or wall-mounted. Din-rail brackets and wall-mounted bracket are included.



Power connection

This unit provides 6 pin terminal block. And it can be operated using either 12 VDC, 24 VDC, or 48VDC power source. Input voltage varies by models, please check the label on the side of this unit to determine the exact power input voltage for each model. The VDC power range can be 48VDC only, or wide range from 12VDC to 55VDC. Always Make sure your input voltage is within this supported voltage range for each model.



WARNING – any exceeded input voltage will not make this unit function and may damage this unit.

To make power connection – Follow the printed polarity for V1+, V1-, V2+, V2-, and ground. Connect positive wire to V+ , connect negative wire to V-, also connect neutral wire to the ground screw as shown .

Relay -- You may use 24V@1A relay connection to your external device for special purpose. When 2 powers are connected, the relay is in SHORT mode. When any power source fails, the relay change to OPEN status.

Power connecting procedure:

STEP 1 – Pull out 6 pin terminal block.

STEP 2 – Connect wire to V1+, V1-, or V2+, V2-, and Ground the neutral wire to the ground screw.

STEP 3– Plug back 6 pin terminal block to its place.

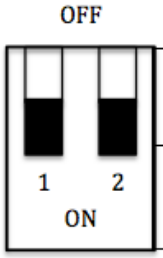
WARNING –

Always ground the power source to maintain a clean power input. Due to too many cheap made power supplies, it creates too much noise, and it will cause the power input fluctuates when connect to this unit. To avoid this, always ground the power source to gain a clean power input.

Dip switch function

This unit is equipped with dip switches, located on the front panel. Adjusting the dip switches will change the default function of this unit. This unit has set to manufacturer default as: Port 5 SFP and the speed is set to 1000M for both port 5 and port 6 SFP ports. you may adjust dip switch setting to select port 5 as TX (disable port 5 SFP) or set SFP speed to 100M. The detail setting as shown below:

Warning:
Dip switch function will not work if it is changed when power is connected. Always turn off or disconnect power supply to change dip switch settings.



DIP 1 to select port 5 TX or SFP	0N	TX
	OFF	SFP (default)
Dip 2 to select SFP speed	ON	100M
	OFF	1000M(default)

LED indicator

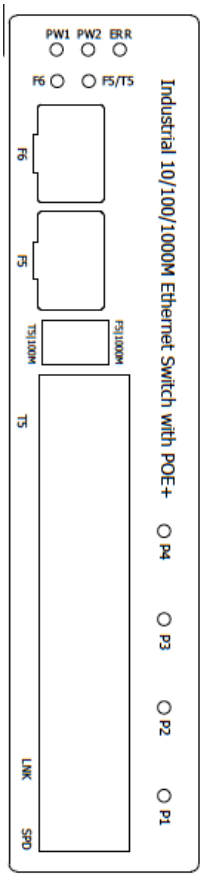
PW1
ON -- when V1+, V1- is connected

PW2
ON -- when V2+, V2- is connected

ERR
ON –
connect only PW1 or PW2.
OFF-
both PW1 and PW2 are connected

LNK
ON—TX link is detected
OFF – TX port is not detected
Flashing – TX port is active

SPD
ON – 1000M speed is detected.
OFF – 10M or 100M speed is detected



F5
ON – port 5 SFP fiber is detected
OFF –port 5 SFP fiber is not detected.
Flashing – port 5 SFP fiber is active

F6
ON – port 6 SFP fiber is detected
OFF – port 6 SFP fiber is not detected.
Flashing – port 6 SFP fiber is active

P1,P2,P3,P4
ON—PD is detected on designated port.
OFF – no PD is detected

Specification:

IEEE Standard	IEEE 802.3 10Base-T Ethernet IEEE 802.3u 100Base-TX Fast Ethernet IEEE 802.3ab 1000Base-T Gigabit Ethernet IEEE 802.3z 1000Base-X Gigabit Ethernet IEEE802.3x Flow Control and Back Pressure, IEEE802.3af for POE IEEE802.3at for POE+
Switch Architecture	Back-plane (Switching Fabric): 12Gbps
Data Processing	Store and Forward
Flow Control:	IEEE 802.3x Flow Control and Back Pressure
Jumbo Frame	9KB
MAC address Table Size	1K
Packet Buffer Size	1M
Network Connector :	5xRJ-45 10/100/1000BaseT(X) auto negotiation, 4 Giga POE+ 802.3at/af PSE port Auto MDI/MDI-X function, Full/Half duplex 2 x SFP 100/1000M BaseX
Network Cable	UTP/STP above Cat.5e Cable
	EIA/TIA-568 100-ohm (100m)
	Fiber Cable (Multi-mode):50/125um,62.5/125um Fiber Cable (Single-mode): 9/125um
Protocol	CSMA/CD
LED	PW1(Power 1) Green, PW2(Power 2) Green, ERR(Fault) Amber,
	TX/RJ-45 port: LNK (Link/Active) Green, SPD(Speed) 10/100(OFF) ,1000 (Green)
	SFP Fiber Per port: Link (Green) Active Flash
DIP Switch	DIP 1: OFF: Port 5 SFP (DEFAULT) ON: Port 5 TX DIP 2: OFF: SFP 1000M (DEFAULT) ON: SFP 100M
Reserve polarity protection	Present
Overload current protection	Present
Power Supply	Redundant Dual DC 12V-55V Power Input
Power Consumption	5.76W@12/24/48 VDC full load, Without POE

Alarm Relay Contact	Relay outputs with current carrying capacity of 1 A @24VDC, Relay in short circuit mode when 2 powers are connected. in open circuit mode when only one power supply is connected
Ethernet Switch power input	Ethernet switch power input 9VDC -57VDC
POE power	Standard 48VDC POE model, input Voltage 48VDC-55VDC. Super Voltage Booster models---- POE power per port 30watts. Maximum 36Watts per port at 12/24/48VDC input Maximum total power 126Watts at 24VDC and 48VDC power input. At 75°C ---- Maximum total power 85W at 12VDC power input .
Removable Terminal Block	Provide 2 Redundant power , Alarm relay contact ,6 Pin Wire range: 0.34mm^2 to 2.5mm^2 Solid wire (AWG):12-24/14-22 Stranded wire(AWG): 12-24/14-22 Torque:5lb-In/0.5Nm/0.56Nm Wire Strip length: 7-8mm
Operating Temperature	-40℃~75℃ fully tested.
Operating Humidity	5% to 95% (Non-condensing)
Storage Temperature	-40℃~85℃
Housing	Rugged Metal ,IP30 Protection
Case Dimension (W X D X H)	142mmx43mmx105mm (LxWxD)
Installation mounting	DIN Rail mounting and Wall Mounting
EMC/EMS	CE, FCC,VCCI
EMI	FCC Part 15 Subpart B Class A, CE EN 55022 Class A