LINOVISION

POE-SW806GM-Solar

User Manual

Updated on June 11, 2024

Package Contents

x1

POE-SW806GM-Solar

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Temperature Sensor

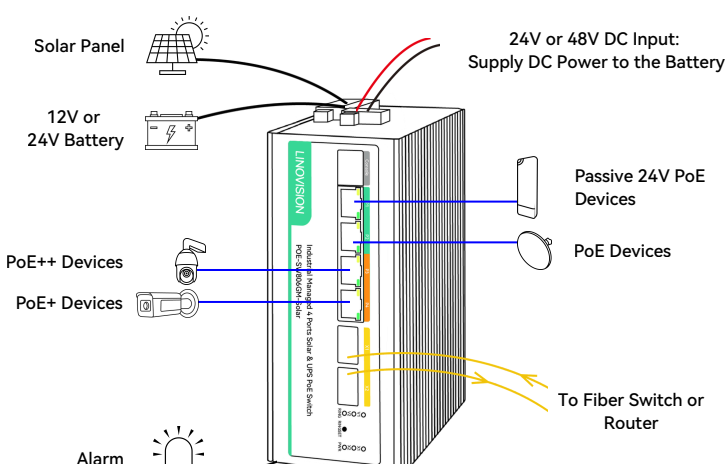
x1

User Manual

Important Notification

1. Please read the user manual carefully before using. The improper operation may cause damage to machine components.
2. Do not use in places near fire sources.
3. Do not throw it in the water and also wet the internal component in the machine.
4. Do not shorting the positive and negative poles of the battery interface with metal conductors.
5. Please connect the battery before connecting the DC power supply to the V3 port to avoid device damage.
6. **Please set DIP switches correctly before connecting any cables and device.**

Connection Diagram

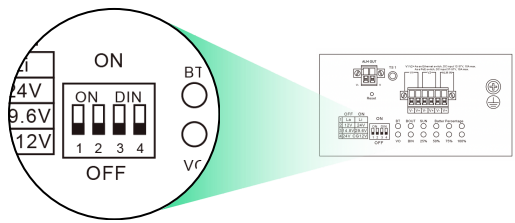


Hardware Installation

Please follow these steps to setup this Solar PoE Switch.
1> Configure DIP Switch
2> Connect Battery
3> Connect Solar Panel
4> Connect external DC input for UPS power application– Skip this step if you do not use it
5> Connect PoE devices and wireless bridges

Step 1: Configure DIP Switch

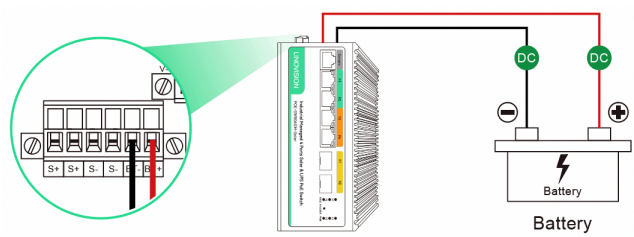
Make sure to set correct battery type, voltage, and solar panel type. Otherwise, the system will not work properly or damaged.



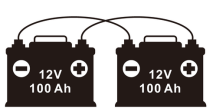
Battery Type	Solar Panel Type	Switch 1	Switch 2	Switch 3	Switch 4	Panel
12V Lead Acid Battery	12V solar panel	OFF	OFF	ON/OFF (invalid)	OFF	
24V Lead Acid Battery	24V solar panel	OFF	ON	ON/OFF (invalid)	OFF	
12V Lithium Battery	12V solar panel	ON	OFF	OFF	OFF	
12V Lithium Battery	24V solar panel	ON	OFF	OFF	ON	
14.8V LiFePO4 Lithium Battery	12V/18V solar panel	ON	OFF	ON	OFF	
24V Lithium Battery	24V solar panel	ON	ON	OFF	OFF	
29.6V LiFePO4 Lithium Battery	24V/36V solar panel	ON	ON	ON	OFF	

Warning:If the battery type is configured on web management page of the switch, the battery type switch is invalid.
When you need to configure the battery type via the DIP button on the switch, please ensure that the power of the device is turned off; turn on the power of the device after the configuration is complete.
The above recommendations are for reference only. Select the solar panel based on the actual open circuit voltage of the battery, the typical work voltage of the solar panel is higher than the open circuit voltage of the battery.
If you accidentally configure the wrong power parameters in the GUI and cause the device to power off, press the fourth button of the DIP button, dial up and down 5 times, and all the lights will flash once to restore.

Step 2: Connect Battery



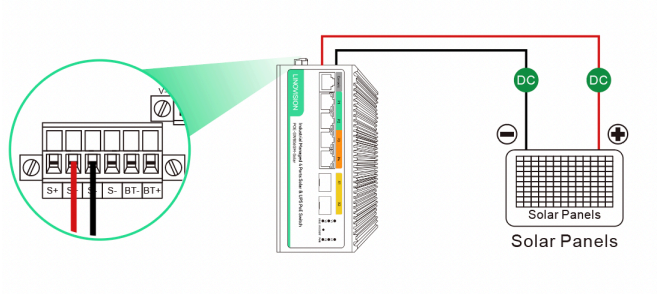
Make connections according to the figure above, and choose the correct battery type according to the figure below.

In parallel for 12V battery	In series for 12V battery
	
12V 100Ah + 12V 100Ah=12V 200Ah	12V 100Ah + 12V 100Ah=24V 100Ah

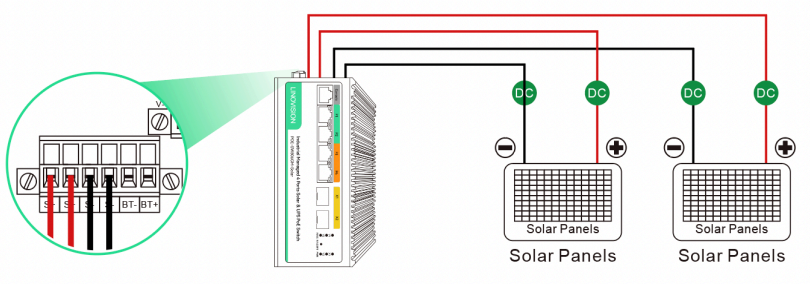
Step 3: Connect Solar Panel

Connecting Solar panels You can choose to connect one or two solar panels （Either a positive or negative electrode can be connected to the solar panel）：

- To connect one solar panel.

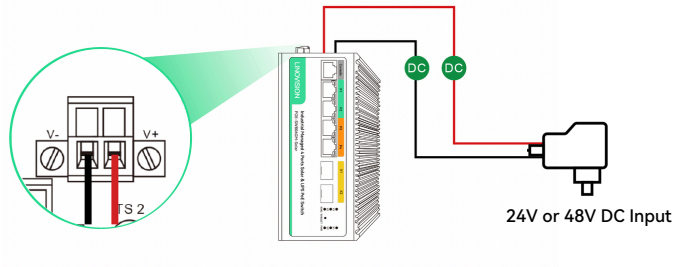


- To connect two solar panels.

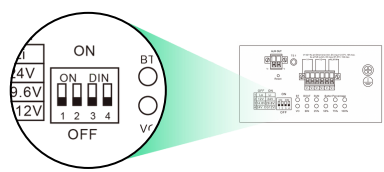


The solar panel can power up the POE-SW806GM-Solar, at the same time, charge the battery.

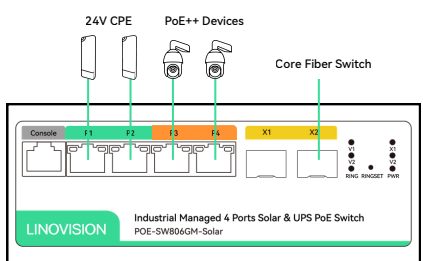
Step 4: Connect external DC input for UPS power application– Skip this step if you do not use it



The V3 port serves as a DC charging port for battery, which is optional. When using DC 24V, it charges 12V batteries, while DC 48V charges 24V batteries. If you want to charge 12V batteries with DC 48V, you must first set it to wide voltage mode through DIP settings or Web settings.



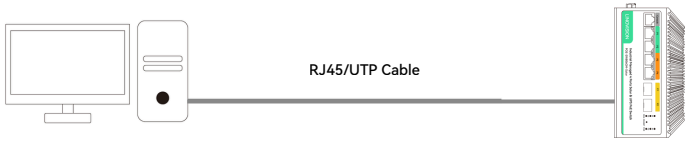
Step 5: Connect PoE devices, IP cameras or wireless bridges



Ports 1~2 of the POE switch are for 802.3bt or 24V passive PoE devices, ports 3~4 are for connecting 802.3af/at PoE devices, and ports X1/X2 are for the fiber switch or fiber media converter.

Web Management

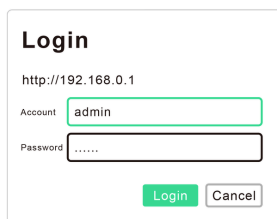
The following shows how to start up the Web Management of the POE-SW806GM-Solar. Please make sure the manager PC must be set to the same IP subnet address.
For example, the default IP address of the POE-SW806GM-Solar is VLAN1 is 192.168.0.1. Then the manager PC should be set to 192.168.0.x (where x is a number between 1 and254, except 1), and the default subnet mask is 255.255.255.0.



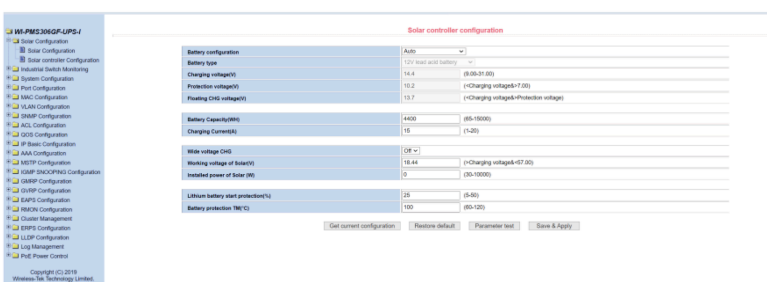
Logging in to the POE-SW806GM-Solar

Step 1: Use Web browser to enter IP address http://192.168.0.1 (default IP address)

Step 2: When the following dialog box appears, please enter the default user name “admin” and password “admin” (or the password you have changed before).



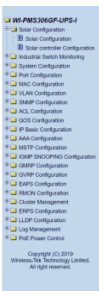
Step 3: After entering the password the main screen appears. The above page shows the information of solar power usage, PoE usage and battery capacity.



Step 4: The battery type and battery capacity will be auto display. The default of Wide Capacity CHG -- Off.

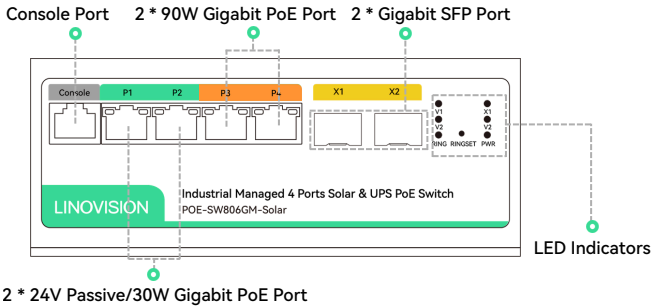
E.g. If you want to connect a 24V 200W solar panel, and 24V 100AH lead-acid battery.

Battery configuration -- Auto, the battery type is automatically displayed 24V lead-acid battery. If it is incorrect, please choose the battery type manually in the drop down box.
Battery Capacity: It is automatically displayed, if the data is incorrect you can enter the right data manually (Formula: Wh= V*Ah).
Charging Current: The max charge current of POE-SW806GM-Solar is 10A max.
Wide voltage CHG: The default is Off for 12V solar panel connection. You connect 24V solar panel, please adjust Wide voltage CHG -- ON.



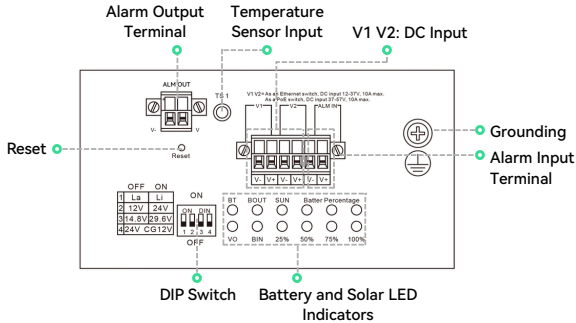
Hardware Introduction

1 Front Panel



LED Indicators	Status	Description	
PoE(Port 1-2)	Green	On	48V 802.3af/at PoE device is connected
	Orange	On	24V passive PoE device is connected
	Off	Off	No power
PoE(Port 3-4)	Green	On	PoE device is connected
		Off	No power
Link/Act	Green	On	Port link is established
		Blink	Data on TX/RX
		Off	Port link down
PWR	Green	On	The device's power supply is operating normally, but the system has not yet been activated.
		Blink	The device's power supply is operating normally, and the system initiates without any issues.
		Off	The device is power off or failed
V1\V2	Green	On	The V1/V2 power is normal
		Off	The V1/V2 power is off or failed
X1\X2	Green	On	The corresponding optical fiber port is connected
		Off	The corresponding optical fiber port is not connected
Ring	Green	On	Ring setting is established
		Off	Ring setting is off or failed

2 Down Panel



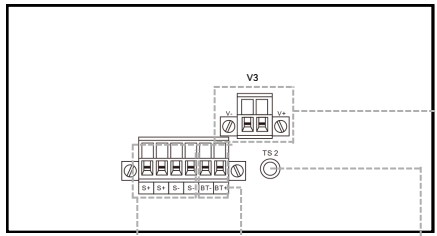
1.V1 V2:DC Input

The solar POE switch can also be used as an ordinary switch, when the power input such as the battery solar panel is not connected. V1, V2 any interface DC input 12-37V, the current maximum 10A, the device is a Ethernet switch; V1, V2 any interface DC input 37-57V, the current maximum 10A, the device is a POE switch. If both V1 and V2 ports supply power at the same time, select the port with the highest voltage.

2. LED Indicators description

LED Indicators	Status	Description
BT:Battery	On	Battery is connected
	Off	Battery is disconnected
VOT:PoE Voltage normal	On	PoE Voltage normal
	Off	PoE Voltage abnormal
BOUT: Battery discharge	Solid on	Battery is discharging and battery capacity is 15%
	Off	End of battery discharge or no discharge
	Blink	1/2S: Battery capacity is ≤15%
SUN: Solar energy input	Solid on	Solar energy input is normal
	Off	No solar energy input
	Blink	1/2S: Solar energy is in delayed charging, the time is 10mins. 1/4S: Solar power voltage is wrong, stop charging
BIN: Battery charging	Solid on	Battery is charging and battery capacity is <98%
	Off	Battery is charged fully or no charging
	Blink	The battery is charging, and battery capacity is ≥98%
Battery percentage	Solid on	Reference the battery capacity 25% 50% 75% 100%

❸ Up Panel



V3: DC input
24V/48V : Supply DC
Power to the Battery

Solar Power
Terminal: 12V/24V

Battery Power
Terminal: 12V/24V

Temperature
Sensor Input

Technical Specification

Solar & UPS Management	
Flexible Power Supply and Priority	Solar Power > External DC > Battery
Built-in Solar Charge Controller	Yes (MPPT Controller)
Solar PV Input	300W Max ≤32V(in DC 12V Mode) or ≤45V(in DC 24V Mode)
Max. Charging Current	15A
Support external DC charging	Yes
DC Input Range	For 12V Battery: DC 20-30V; For 24V Battery: DC 30-57V
Built-in Battery Management	Yes
Battery Type	Lead Acid/Lithium/LiFePO4
Battery Input	12/24V 10A
Battery Capacity	200AH
Discharge Current	15A
POE Switch	
Interfaces	(4) 10/100/1000Base-T RJ45 Ports (2) 1.25G SFP Slot (1) Console Port
PoE Outputs	Port 1-2: 802.3af/at PoE 30W (Pin 1/2+, 3/6-) or Passive 24V PoE 24W (Pin 4/5+, 7/8-) Port 3-4: 802.3bt PoE++ 90W (Pin 1/2/4/5+, 3/6/7/8-)
Total PoE Budge	120W

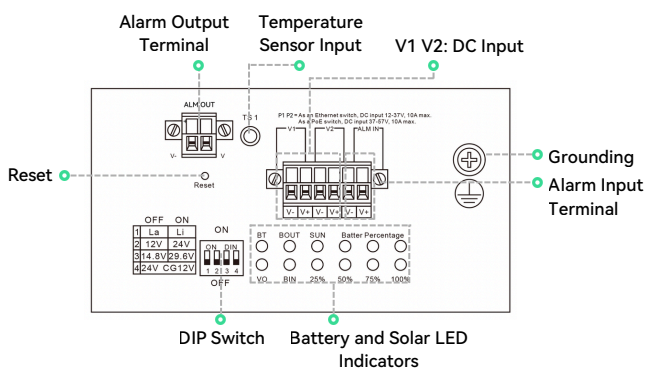
POE Switch	
Exchange Capacity	12Gbps
Packet Forwarding Rate	8.94Mpps
Mac Address Table	8k
Packet Buffer Memory	4.1Mb
Jumbo Frame	10240 Bytes
System	
Enclosure	Metal, fanless design
Dimension	6.14 x 4.53 x 2.6 Inches (156×115×66 mm)
Net Weight	2.82 lbs (1.28kg)
Power Consumption	5W Max (without PoE output) or 125W with PoE outputs
Protection Level	6kV Lightning protection 6kV ESD Contact discharge
Working Temperature	-40 °F ~ 158 °F (-40℃ ~ 70℃)
Storage Temperature	-40 °F ~ 158 °F (-40℃ ~ 70℃)
Working Humidity	10% ~ 90% RH non-condensing
Storage Humidity	5% ~ 90% RH non-condensing

Software Functions

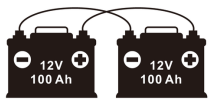
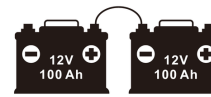
Solar & Battery Controller	
Solar Controller	PV input voltage, PV input current, PV status, DC output voltage, DC output current,
Battery Controller	Battery type, Battery status, Battery voltage, Battery capacity, charging current, charging voltage, discharge voltage, discharge current.
External DC Chargin	AC-DC voltage, AC-DC current, AC-DC status
Alarm Events	AC-DC status, solar timing check, SYS temp sensor, Battery temp sensor, Battery status, battery capacity, alarm input
POE Port Management	
PoE Type	Active 48V, Passive 24V, BT 60W
PoE Port Control	ON/Off Control, PoE Budget
Switch Management	
VLAN	Max 4K VLANs (802.1q Tagged VLAN, MAC-based VLAN, IP-based VLAN, Protocol-based VLAN)
Port Configuration	LACP, Jumbo Frame, Port Shutdown, Link Aggregation(Up to 8 aggregation groups and up to 8 ports per group), Port mirroring(One-to-One Many-to-One Tx/Rx/Both)
Security	IP-MAC-Port Binding, Support static and dynamic ARP, DHCP Snooping, IEEE802.1x AAA, RADIUS/TACACS+, RADIUS, Port Isolation
Access Control	Port based authentication, Secure Command Line Interface (CLI) management with SSHv1/SSHv2, Broadcast/Multicast/Unicast Storm Control, Port MAC address filtering,
QoS	Port-based (uplink and downlink traffic of a single port can be restricted), 802.1p-based Classification, Support WRR, SP, WFQ, DSCP-Based Classification, ACL-Based Classification
Management	Web-based GUI, Command Line Interface (CLI) through console port, telnet, SSH, SNMPv1/v2c/v3

Battery Type and Solar Panel Type Option				
Switch 1	**Switch 2**	**Switch 3**	**Battery Type**	**Solar Panel Type**
Off	Off	on/off(invalid)	12V lead acid battery	12V solar panel
Off	On	on/off(invalid)	24V lead acid battery pack	24V solar panel
On	Off	Off	12V lithium battery pack	12V solar panel
On	Off	On	14.8V lithium iron phosphate battery pack	12V/18V solar panel
On	On	Off	24V lithium battery pack	24V solar panel
On	On	On	29.6V lithium iron phosphate battery pack	24V/36V solar panel
Switch 4	On	24V solar panel can charge 12V batteries for all types of batteries		

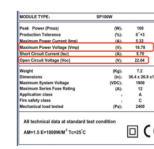
Warning:If the battery type is configured on web management page of the switch, the battery type switch is invalid.
When you need to configure the battery type via the DIP button on the switch, please ensure that the power of the device is turned off; turn on the power of the device after the configuration is complete.
The above recommendations are for reference only. Select the solar panel based on the actual open circuit voltage of the battery, the typical work voltage of the solar panel is higher than the open circuit voltage of the battery.
If you accidentally configure the wrong power parameters in the GUI and cause the device to power off, press the fourth button of the DIP button, dial up and down 5 times, and all the lights will flash once to restore.



V1V2 As an Ethernet switch, DC input 12-37V, 10A max.
As a PoE switch, DC input 37-57V, 10A max.

In parallel for 12V battery	In series for 12V battery
	
12V 100Ah + 12V 100Ah=12V 200Ah	12V 100Ah + 12V 100Ah=24V 100Ah

Step 2: How to select a suitable solar panel?

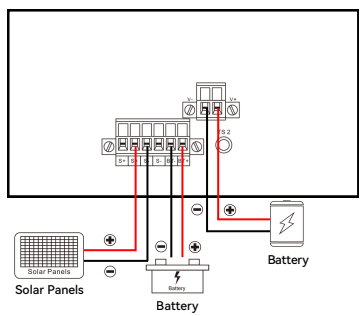
Solar Panel Type			
12V Solar Panel	Maximum power voltage(Vmp)	≤26V	
	Open circuit voltage(Voc)	<30V	
24V Solar Panel	Maximum power voltage(Vmp)	≤30V	
	Open circuit voltage(Voc)	≤57V	
S+ S- Input Voltage		12-57V	

Step 3: Calculate solar panel and battery capacity
Example: Load=15W (1 pc UPS PoE switch, 2 pcs IP camera, 1 pc wireless CPE)
Sun: 8h/day. Solar Panel: 100W. Battery: 12V/40Ah = 480Wh (100%)
DAY TIME:
Battery capacity at sunrise: 0%
Charge: 100W x 8h x 70% efficiency = 560Wh
Consumption: 15W x 8h = 120Wh
Battery capacity at sunset: 560-120 = 440Wh = 93%
NIGHT TIME
Battery capacity at sunset: 440Wh (93%)
Consumption: 15W x 16h = 240Wh
Battery capacity at sunrise: 440-240Wh = 42%< 50% battery capacity , it's ok.
If the battery used is lithium battery, system will work fine. If the battery used is a lead acid battery, we don't recommend cycling it below 50% to prevent premature battery wear.

The POE-SW806GM-Solar max charge current is 10A, so solar power is 300W max.

PoE Load (if back up 24hours,8hours for solar charge, 16hours for battery discharge)	Battery Need	Solar Need
5W Max	12V 14AH	12V 50W
10W Max	12V 24AH	12V 120W
15W Max	12V 40AH	12V 150W
20W Max	24V 35AH	24V 240W
25W Max	24V 40AH	24V 260W
30W Max	24V 50AH	24V 280W

Step 4: Power on device after completing all setting.



Power Priority: Solar Panel>DC IN>Battery
B+:Battery positive electrodes
B-: Battery negative electrodes
S-: Solar negative electrodes
S+:Solar positive electrodes

The solar panel can power up the POE-SW806GM-Solar, at the same time, charge the battery.