Quick Installation Guide

Solar Powered PoE Injector

1 x Solar Powered PoE Injector

WI-PS402-UPS-I

1 x Screwdriver
1 x Quick Installation Guide

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1. Packing Content

2. Appearance

WI-PS402-UPS-I

• Front Panel
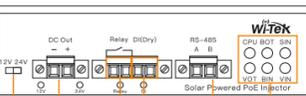
1*2.5Gbps PoE++ RJ45
1*2.5Gbps PoE++ RJ45@12V Battery
1*2.5Gbps PoE++ RJ45@24V Battery
12V/24V DC Out DIP Switch
12V/24V DC Out
Relay
DI(Dry)
RS-485
LED indicators

*(Do not connect active devices to DI(Dry))

• DIP Switch

DIP Switch	Status	Description
12V/24V DC Out	12V(Left)	The DC output works at 12V.
DIP Switch	24V(Right)	The DC output works at 24V.

• LED indicator

LED Indicator	LED Name	Color	Status	Description
BT	BT PoE indicator	Orange	Steady on	The port is providing power at IEEE 802.3bt mode.
			Off	The port is not providing power.
AT	AT PoE indicator	Green	Steady on	The port is providing power at IEEE 802.3at mode.
			Blinking	The port is providing power at IEEE 802.3af mode.
			Off	The port is not providing power.
CPU	System indicator	Green	Steady on	An error has occurred that affects the system.
			1/2s Blinking	The system is running properly.
			1/4s Blinking	Failed to identify the battery.
			Off	The system software is not running.
VOT	Power output indicator	Green	Steady on	The MPPT module is providing power properly.
			Off	The MPPT module is providing power abnormally.
BOT	Battery discharging status indicator	Green	Steady on	The battery is discharging and battery capacity is >15%.
			Blinking	The battery capacity is <15%.
			Off	The battery is end of discharge or not discharge.
BIN	Battery charging status indicator	Green	Steady on	The battery is charging and battery capacity is >99%.
			Blinking	The battery is charging and battery capacity is <99%.
			Off	The battery is full capacity or not charge.
SIN	Solar power input indicator	Green	Steady on	The solar power input is normal.
			1/2s Blinking	The solar power input is delayed charging.
			1/4s Blinking	The solar power input is delayed charging.
			Off	There is no solar power input.
VIN	DC power indicator	Green	Steady on	The DC power input is normal.
			Blinking	The DC power input is in delayed charging.
			Off	There is no DC power input.
12V	DC out status indicator	Green	Steady On	The DC output works at 12V.
24V		Green	Steady On	The DC output works at 24V.
Relay	Relay status indicator	Green	Steady on	The Relay is normal close status.
		Green	Blinking	The Relay is normal open status.
			Off	The Relay is pulse status.
DI	DI(Dry) status indicator	Green	Steady On	The DI input is closed status(with input).
			Off	The DI input is open status(without input).

• Side Panel

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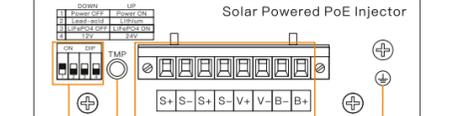
DIP Switch
Temperature Sensor Input
Solar, DC, Battery Power Input
Grounding

• Interface and DIP Switch

Power Input	Description
S+, S-	Solar power input. Two of solar panel input in parallel to obtain greater current input.
V+, V-	DC Power Input.
B+, B-	Battery charging & discharging.

* The solar input cannot supply power to the switch independently without the battery connected.
* Default Input priority: The input priority is determined based on the voltage, and the input with the highest voltage is preferred for the power supply.

DIP Switch	Status	Description
Switch 1: Power	Up	Power on the device.
	Down	Turn off the device.
Switch 2,3,4: Battery type option		
Switch 2	Switch 3	Switch 4	Battery type
Down	Down	Down	12V lead acid battery
Down	Down	Up	24V lead acid battery
Up	Down	Down	11.1V Working voltage: 9-12.6V) lithium battery
Up	Down	Up	22.2V Working voltage: 19-25.2V) lithium battery
/	Up	Down	12.8V Working voltage: 10-14.6V) LiFePO4 battery
/	Up	Up	25.6V Working voltage: 20-29.2V) LiFePO4 battery

*Note: Power on the device after the settings are complete
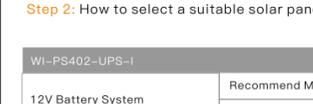

3.Hardware Installation

Step 1: How to get 12V or 24V battery?

Battery Type	Battery Nominal Voltage	Battery Working Voltage	Battery Max Charge Current
Lead-acid	12V	/	15A
	24V	/	
Lithium	11.1V	9-12.6V	
	22.2V	19-25.2V	
LiFePO4	12.8V	10-14.6V	
	25.6V	20-29.2V	

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

Step 2: How to select a suitable solar panel?

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12V Battery System	Recommend Maximum Power voltage(Vmp)	18-26V
	Open Circuit Voltage(Voc)	<32V
24V Battery System	Recommend Maximum Power voltage(Vmp)	30-52V
	Open Circuit Voltage(Voc)	<57V

Note: Model: JYKM Solar Panel

• DC input

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12V Battery System	Recommend DC Power Voltage	18V/24V
	Recommend DC Power	240W + Load Power
24V Battery System	Recommend DC Power Voltage	30V/36V/48V
	Recommend DC Power	480W + Load Power

*Ensure that the DC power input has over-current protection to protect the DC power supply.

Step 3: Calculate battery capacity and solar panel power

Recommended tools for reference:
UPS Wizard in Wi-Tek Cloud APP
Photovoltaic performance in PVGIS provided by the European Commission

Example: There is 20W load in the solar system
If the system should continue working 1night and 2 days in the cloudy & raining days, and discharge capacity is 80%(means remain 20% capacity after 2 days), the battery capacity is about

20W * (0.6+2) days * 24hours * 1.2(system loss coefficient) / 80% (remain 20% capacity) =1,872 Wh = 24V@78Ah battery

If the battery should be charge full from empty in 3 sunny days, the solar panel is about

20W * 24hours * 2.5days + 1872 Wh / (13 days * 2.8(solar panel efficient in days) * 95%(conversion efficiency) *95%(system loss)) = 405W = 38V@10.7A solar panels

Note: the Charging days need to be planned according to local weather.
There is much different at system loss coefficient due to battery type, temperature, quality, cycles and so on, and there is much different at solar panel efficiency due to weather, latitude, month, temperature, install slope and azimuth, system loss, cleanliness, quality, degree of aging and so on.

Get some reference, you can visit recommend tools or contact with us for enhanced support.
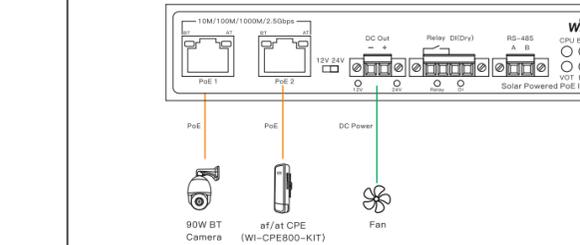
Step 4: Power on device after completing all setting.

Solar Powered PoE Injector

Solar Panel 1 Solar Panel 2 Battery
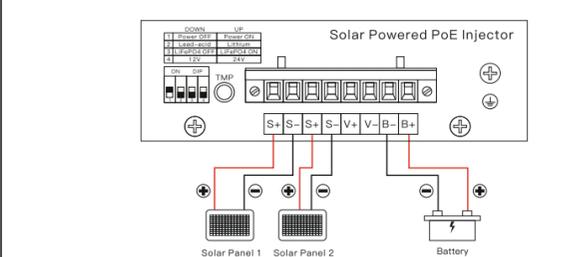
*Default input priority: The input priority is determined based on the voltage. The input with the highest voltage is preferred for power supply.
Example 1: There is no DC input requirement, using 18V working voltage solar panels and the 12V battery.
Example 2: Using 36V solar panels, 24V DC input and 12V battery, 36V Solar power during the day, 24V DC power at night, when there is no DC, battery as a backup power supply.Recommended tools for reference:

S+: Solar positive electrodes
S-: Solar negative electrodes
D+: DC input positive electrodes
D-: DC input negative electrodes
B+: Battery positive electrodes
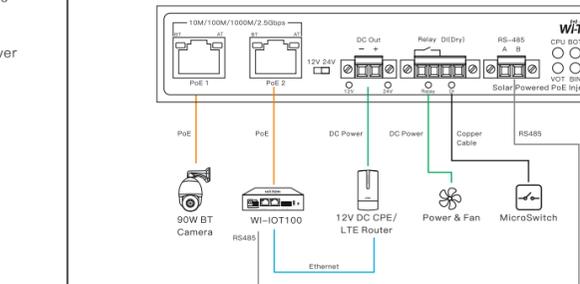B-: Battery negative electrodes
B-: / Battery negative electrodes

Note: Positive to positive, negative to negative.

Step 5: Connect PoE or DC Powered Devices.

Application 1: Typical CCTV solution without Wi-Tek cloud management.

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Application 2: Typical CCTV solution with Wi-Tek cloud management.

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