SOLAR & BATTERY POWERED POE SWITCH

Renewable Energy PoE Switch

User Manual

SG08P+2SFP-120WSM

Product introduction

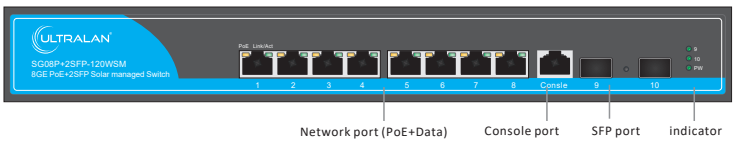
The SG08P+2SFP-120WSM is a layer 2 Managed 8 Port 10/100/1000M PoE RJ45+2SFP Solar & Battery powered PoE switch integrating solar power generation, intelligent POE power supply and full-automatic charge and discharge control. It is a great solution for reliably powering both 802.3af/at and passive POE devices in remote areas where there is either no grid power source (off grid) or the grid power source is unreliable.

Product function

- The first integrated solar power charging management POE switch
- Rich L2 network management functions can easily meet the needs of complex modern network applications
- It supports full-automatic charging and discharging function, with a maximum charging current of 15A
- The advanced MPPT intelligent charging system greatly improves the efficiency of photovoltaic power generation
- It supports two battery types: lead-acid battery and lithium battery. There are 6 built-in battery specifications, and the maximum capacity is 500AH
- Support 12V / 24V(maximum 1200W)solar panel input
- Support AC90-265V 50 / 60Hz input, maximum power 300W
- Using independent intelligent PSE power supply chip
- Support 802.0 3af / at & 24V passive POE power supply (automatically detects active or passive)
- Support ports 1-8 24V / 48V power supply adaptive output
- Support POE power supply output with total power up to 120W
- Support external battery temperature probe (included)
- Adopt Realtek's latest intelligent network CPU

Product display and description

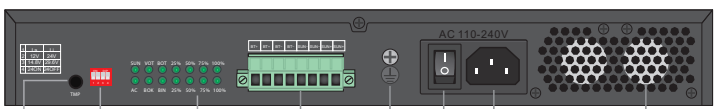
Front Panel



Indicator definition

Front indicator		State	Description
Power indicator:PW		on	Power on
		off	Power off
PoE port indicator : Network port		Green on	Netwonk link on
		Orange on	PoE on
		Port light blink	Network data exchange
PoE port indicator	Orange on	on	It has 24V power receiving equipment connected with it or there is no power supply
		off	It has not 24V power receiving equipment connected with it or there is no power supply
	Green on	on	It has 48V power receiving equipment connected with it or there is no power supply
		off	It has not 48V power receiving equipment connected with it or there is no power supply
Optical port : 9, 10		on	Optical network Link
		off	Optical network down

Rear Panel



Function switch definition

Function switch	Description
1	Battery type switch
2	Battery voltage switch
3	Lithium iron phosphate switch
4	Wide voltage charging switch

Battery type selection

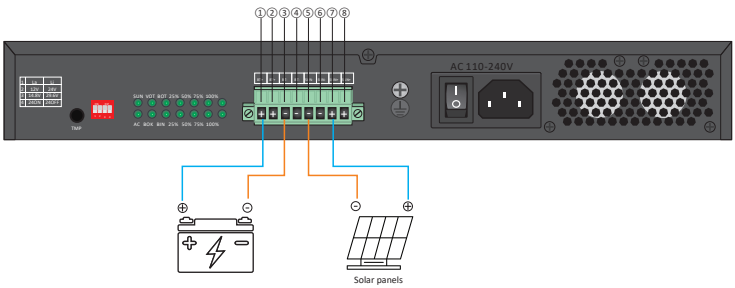
Switch 1	Switch 2	Switch 3	
OFF	OFF	ON	12V lead acid battery
OFF	ON	ON	24V lead acid battery pack
ON	OFF	OFF	12.6V lithium battery pack
ON	OFF	ON	14.8V lithium iron phosphate battery pack
ON	ON	OFF	25.2V lithium battery pack
ON	ON	ON	29.6V lithium iron phosphate battery pack
Switch 4	ON	Support 24V solar charging 12V battery pack	

Warning: Battery type configuration in the software overrides the DIP switch settings.
Make sure the switch is powered off when changing DIP switch settings.

Function indicator definition

Function indicator (rear)	State	Description	Function indicator (front)	State	Description
SUN:Solar energy indicator	on	The solar energy input is normal	AC:Input indicator	on	The AC input is normal
	off	Solar energy not input		off	AC not input
	Blink	1/2S flash indicates that the solar energy is in delayed charging, and the time is 10 minutes 1/4S flash indicates that the solar energy input voltage is wrong and the charging is stopped		Blink	AC input error, stop input
VOT:Output voltage OK indicator	on	PoE voltage is normal	BOK:Battery OK indicator	on	Battery is normal
	off	PoE voltage abnormality		off	Battery abnormality
	Always on	Battery discharge >15%	BIN: Charging indicator	Always on	Charging and power <98%
BOT:Discharge indicator	Always off	End of battery discharge or no discharge		Always off	End of battery charging or no charging
	Blink	1/2S flashing, power <15%		Blink	When the battery is charged or not charged, it will be fully charged, and the power is ≥98%
25%-100%: battery indicator	on	Corresponding charge			
BOT and BIN lights are off at the same time and the equipment works normally: charging has been completed					

Controller connection diagram



1. BT+ The first group of battery positive
2. BT+ Second group of battery positive
3. BT- The first group of battery negative electrode
4. BT- Second group of battery negative electrode
5. SUN- The first group of solar negative electrodes
6. SUN- Second group of solar negative electrodes
7. SUN+ The first group of solar positive electrodes
8. SUN+ Second group of solar positive electrodes

Reference instructions for supporting battery and solar panel

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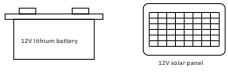

12V 400W solar panel + 12V 50AH lithium battery. When the sunlight is good, the charging time is about 5 hours and runtime is 20 hours (30W load) and 5 hours (120W load) respectively.

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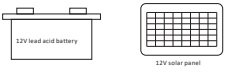

12V 400W solar panel + 12V 50AH lead-acid battery. When the sunlight is good, the charging time is about 5 hours and runtime is 20 hours (30W load) and 5 hours (120W load) respectively.

Note: the maximum reference open circuit voltage is 32V, and the working voltage is 18.5V (please configure the solar panel power according to the actual conditions)

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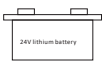

24V 400W solar panel + 25.2V 50AH lithium battery. When the sunlight is good, the charging time is about 5 hours and runtime is 42 hours (30W load) and 10 hours (120W load) respectively.

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24V 400W solar panel + 24V 50AH lead-acid battery. When the sunlight is good, the charging time is about 5 hours and runtime is 42 hours (30W load) and 10 hours (120W load) respectively.

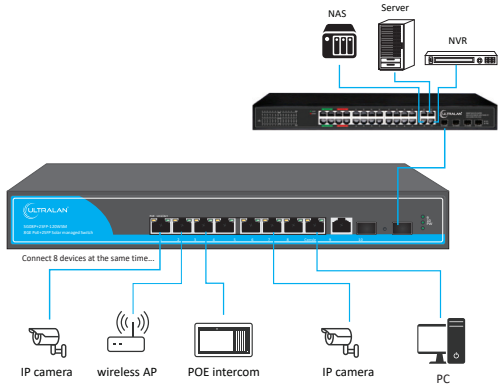
Note: the maximum reference open circuit voltage is 45V and the working voltage is 33V
(Please configure the solar panel power according to the actual conditions)

Charging time reference formula = = battery ampere hour ah (solar panel short-circuit current a * 0.55) = charging hours
Discharge time reference formula = = (battery rated voltage * battery ampere hour ah) battery capacity watt hour / actual discharge power

The above calculation results are only used as a reference for selection and installation and may vary from installation to installation depending on external factors such as load, weather, sunlight, and other factors.

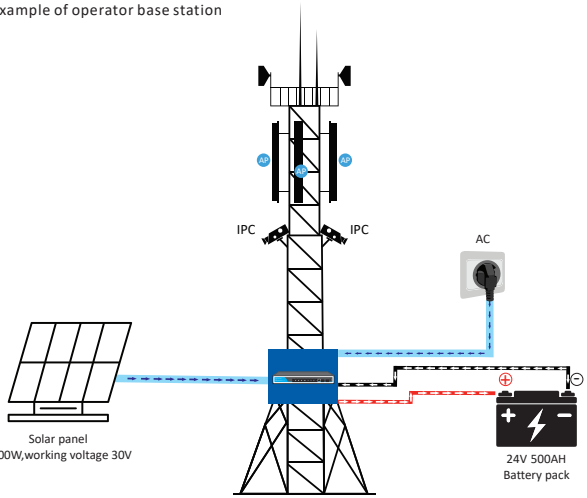
Product application

Schematic diagram of switch connection



Scene diagram

Application example of operator base station



Technical parameter

Model	SG08P+2SFP-120WSM
Product name	8+2 Solar MPPT Managed PoE Switch
Fixed port	8*10/100/1000Base-TX PoE port(Data) 2*1000M SFP
Console port	1 * console port
Reset Key	1
PoE port	8-port fully automatic 24V / 48V matching PoE IEEE 802.3af/at, PoE port maximum output 30W dynamic 24V, PoE port maximum output 25W Configurable 48V 24V PoE output; Support 48V / 24V PoE equipment power supply; Ports 1-8 support PoE power supply
PoE total power	120W Max
Network protocol	IEEE 802.3;IEEE 802.3u 100BASE-TX IEEE 802.3ab1000BASE-T;IEEE 802.3x IEEE 802.3z 1000BASE-X;IEEE 802.3ad IEEE 802.3q 、IEEE 802.3q/p;IEEE 802.1w 、 IEEE 802.1d 、 IEEE 802.1S STP(Spanning Tree Protocol);RSTP/MSTP(Rapid Spanning Tree Protocol) EPPS ring network protocol;EAPS ring network protocol
Port Specification	10 / 100 / 1000baset(x)automatic detection, full / half duplex MDI/MDI-X adaptive
Transmission Mode	Store and Forward(full wirespeed)
Bandwidth	56Gbps
Packet forwarding rate	40.32Mpps
MAC address	8K
Buffer	4.1M
Transmission Distance	10BASE-T :Cat3,4,5 UTP(=250 meter) 100BASE-TX : Cat5 or later UTP(=100 meter) 1000BASE-TX : Cat6 or later UTP(=1000 meter) 1000BASE-SX:62.5μm/50μm MMF(2m~550m) 1000BASE-LX:62.5μm/50μm MM(2m~550m) or 10μm SMF(2m~5000m) The maximum transmission distance of single-mode fiber is 120KM
Speed	Ethernet 10Mbps half duplex; 20Mbps full duplex Fast Ethernet 100Mbps half duplex; 200Mbps full duplex Gigabit Ethernet 2000Mbps full duplex
CPU	500MHZ
FLASH	16M
RAM	128M
Power supply pin	48V power supply: 12 + 36 -; 24V power supply: 45 + 78-
Power Load	Charging + full load: 450W; Discharge + full load: 150W
Charging function	Full function charge discharge control and management
PoE function	8-port fully automatic matching 24V / 48V PoE power supply; hasivo IEEE802. 3AF/AT; PoE maximum output 30WHasivo active 24V_ PoE maximum output 25W; To program and configure PoE power supply output mode 48V 24V Poe output
Battery type	Solar panel AC90-265V 50 / 60Hz input, maximum power 300W
Switch LED	PW: power indicator; Port: (PoE_; work indicator orange; network connection indicator green) 9 10: (optical port link indicator); Sun: solar indicator
Function indicator	Sun: solar indicator;AC: AC input indicator; VOT: output voltage normal indicatorBok: Battery normal indicator; BOT: normal discharge indicator; Bin: charging indicator 25% / 50% / 75% / 100%: charge discharge indicator
Operating temperature / Humidity	-20~+65°C;10%~90% RH Non coagulation
Storage temperature / Humidity	-40~+70°C;5%~90% RH Non coagulation
Product size / package size (L * W * H)	330mm*190mm*45mm 410mm*280mm*100mm
Net weight / gross weight(kg)	3.5/4.1kg(solar panel and battery excluded in the product)
Lightning protection / protection grade	3KV 8/20us;IP30
Safety regulation certification	3C ； CE mark, commercial ； CE/LVD EN60950 ； FCC Part 15 Class B - RoHS
Warranty period	Whole device for 1 year (Accessories not included)

Parameters of power generation controller

Battery type	Lead acid battery		Lithium battery		Lithium iron phosphate battery	
Battery voltage	12V	24V	12.6V	25.2V	14.8V	29.6V
Charging mode	MPPT(current and voltage limiting - constant current - voltage limiting - Pressure and current limiting --- floating charge)		MPPT (current and voltage limiting constant current constant voltage)			
Consumable supplement function	Support					
Consumable detection voltage	<12.6V	<24.8V	<12.2V	<24.4V	<14.2V	<28.8V
Rated charging current	15A					
Float current	50mA-1000mA		-			
Float time	3 hours		-			
Charging stop	Arrival float timing		Rated voltage and simultaneous charging current < 30mA			
Rated discharge current	6.5A	3.6A	8.5A	4A	6.5A	4A
PoE output voltage	42~57V					
PoE output power	Maximum 120W					
Photovoltaic open circuit voltage	32V	45V	32V	45V	32V	45V
Photovoltaic input	1200W max					
Maximum charging voltage	14.7V	29.6V	12.6V	25.2V	14.8V	29.6V
Floating charge voltage	13.7V	27.4V	-	-	-	-
Discharge cut-off voltage	10.1V	20.2V	9V	18V	10.2V	20.4V
Overtemperature protection	Support automatic shutdown when the main board is over temperature and automatic shutdown when the battery is over temperature(optional)					
Input protection	Overcurrent, overvoltage, delayed start and anti connection protection					
Output function	Overcurrent, overvoltage and short circuit					
Indicator light	System normal operation indicator, battery lamp, input normal indicator, charge discharge indicator and multi-functional composite fault indicator					
Working temperature	-20℃~+65℃					

Matters needing attention

1. Please read the operation manual carefully before use. Improper operation may cause damage to this and other devices.
2. Don't use in places near a fire source.
3. Don't put the product into water or wet the built-in machine components.
4. Don't short circuit the positive and negative poles of the battery interface with metal conductors
5. Don't disassemble or unravel the internal parts of the product as this may void the product warranty.

Product supporting list

Switch

User manual and warranty card

Rack mount kit

Power cable

Temperature monitoring sensor