

LA-SB470ES-G0208PB-Z

Solar IoT Box: Solar Control + Managed Switch Module (8GE PoE/Port1-2 BT90w + 2GE SFP)



Overview

LA-SB470ES-G0208P-Z Solar Smart Box is a self-developed product integrating solar energy, IoT, communication, PoE, and intelligent operation and maintenance technologies. It serves the digital new energy weak current integrated system and is a pioneer in the industry with comprehensive functions, intelligent management, and wide application.

This box combines technologies like solar power generation control, battery management, network data handling, and multi-protocol PoE power supply. Using 4G/5G and optical fiber for data transmission, it integrates terminal devices from different industries for innovative applications in network-free and power-free environments.

It employs multi-functional PSE technology to solve power supply issues for various PoE devices. With advanced tech and quality materials, it converts solar energy efficiently, ensuring safety and stability. The box offers IP55 protection, built-in lightning protection, and a unified platform for intelligent monitoring, alarm reporting, and remote maintenance, providing a one-stop solution for outdoor applications like security monitoring, smart agriculture, and water conservancy systems.

Features

Integrated design: AI-in-one box

- Integrating solar controller, power supply, IoT, network communications, PoE, and intelligent O&M into one box.

Wireless installation: 4G; Solar

- Flexible to meet some special place where without power cable and optical fiber cable archived.

Smart solar: Integrated solar controller

- Remote monitoring for status of solar panel and battery. And control the battery charge and discharge.

Intelligent O&M: Management Software

- Real time monitoring and remote operation and maintenance.

Environmental-friendly: Solar power and energy saving:

- Making full use of natural energy, reducing environmental pollution and the dependence on traditional energy.

High protection: Real industrial design

- IP55 protection and rugged galvanized sheet enclosure, voltage and current protection, Surge lightning protection, stable and reliable operation in hard environment.

Functions

Intelligent Box Management

- Support intelligent temperature control, automatic fan control through temperature setting.
- Support temperature and humidity detect and parameter display.
- Support box door on/off status detection.
- Support water inlet detection and auto report alarms.

Power Supply Management

- Support 4*DC12V power supply, single channel control, can remotely turned on/off the power, supports automatic over-current and short-circuit protection and alarm reporting.
- Support 1xDC24V power supply, can remotely turned on/off the power, supports automatic over-current and short-circuit protection and alarm reporting.
- Support 1xAC24V power supply, can remotely turned on/off the power, supports automatic over-current and short-circuit protection and alarm reporting.

Battery Management

- Support battery charging detection.
- Support battery discharging detection.
- Support battery overcharge protection.
- Low temperature protection, charging/discharging stops when the temperature is below the lower limit.
- High temperature protection, charging/discharging stops when the temperature is higher than the upper limit.

Serial Port and Switch Quantity Management

- Support 2x 485/232 serial port, 4x DI/DO switch quantity.
- Support remotely turns on/off the serial port, switch quantity, and detect and display the status.
- Support serial port TX, RX traffic detection.
- Supports serial port baud rate, start bit, check bit, stop bit, flow control, as well as pipit, port number and other Ethernet encapsulation content configuration to enable serial port data transparent transmission.
- Supports indicator lights to indicate the connection status of the serial port and the switch quantity.
- Supports protocol interfacing of devices external connected to the serial port (Customization)

Switching Network Management

- Support Ethernet interfaces management, can remotely turn on/off the interfaces.
- Support MTU setting, ensure stable and reliable transmission of large data frames.
- Support flow control and automatically adjust the occurrence rate.
- Support VLAN.
- Support MAC address whitelist, secure access authentication.
- Support port traffic statistics.
- Support PoE management and query and display the parameter of PoE power supply voltage, current and power. Port1-2 support IEEE802.3bt 90W. Port3-4 support remote 24V/48V PoE mode setting. Port5-8 support IEEE802.3af/at protocol auto identification.

4G Network Management

- Support remote viewing of 4G status, such as the acquired address, module frequency band, signal status, uplink and downlink traffic.
- Support network priority setting: 4G priority/wired interface priority
- Supports both business transmission and data management.
- Support manual modification of APN information.
- Support SIM card presence detection.

Solar Management

- Support reading and displaying the voltage, current and power of solar panels.
- Supports collecting the battery's min/max voltage, min/max charging/discharging current, max/min charging/discharging power, charging/discharging ampere-hours, power generation and power consumption on the day.
- Supports reading device operation days, over-discharge times, and full charge times.
- Supports battery reverse connection protection, battery low temperature protection (stop charging/discharging when the temperature is lower than the lower limit of charging/discharging), battery high temperature protection (stop charging/discharging when the temperature is higher than the upper limit of charging/discharging), and overcharge protection.
- Support fault alarm reports, such as: battery (lead-acid) cannot be detected, solar panel reverse connection, solar panel operating point over voltage, photovoltaic input over voltage, photovoltaic input power is too large, load power is too large or load over current, load short circuit, under voltage, battery over voltage, battery discharged, etc.

System Management

- Support username and password management.
- Support software and hardware version viewing
- Support remote upgrade of firmware and configuration.
- Support remote restart.
- Support factory setting.
- Support NTP.

Application

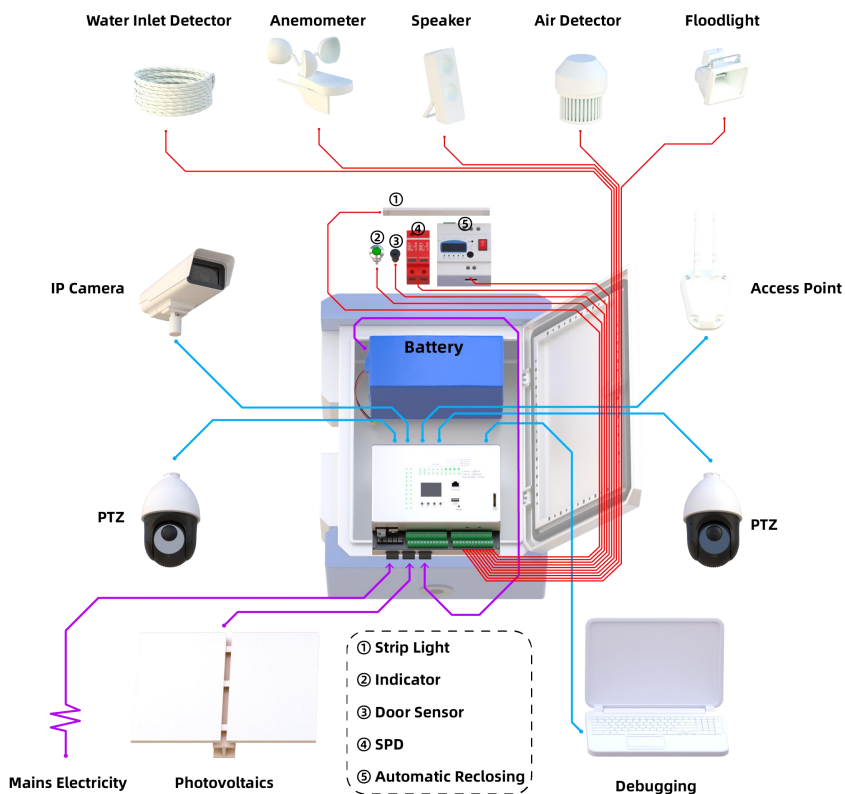
- Widely applied to security monitoring, forest fire prevention, smart agriculture, environmental monitoring, oil, electricity, water conservancy, geological disaster prevention, scenic spots and various unattended environments.

Specifications

Model No.	LA-SB470ES-G0208PB-Z
Interface	8*10/100/1000M Ethernet port+ 2*1000M fiber port 1*RJ45 OOB 1*RJ45 Console 1*USB 1*SIM
Performance	
Processor	Quad-core Cortex-AT processor @1.2GHz main frequency
Protection	
IP Rating	IP55
Power Supply	
Power Input	Solar DC24V
Power Output	1* AC24V 1* DC24V 4* DC12V
Battery	
Nominal Voltage	24V (Max 25.6V)
Nominal Capacity	30AH
Total Power	720wh
Continuous Discharge Current	15A
Peak Discharge Current	45A
Standard Charging Current	10A
Max Charging Current	15A

Battery Operating Voltage Range	29.2V-20.0V
Limited Charge Voltage	29.2V
Limited Discharge Voltage	20.0V
Charge And Discharge Mode	The same port for charging and discharging
Dimension (L x W x H)	220x153x92mm
Weight	6KG
Battery Life	≥3000 cycles; 0.5C charge 1C discharge 90%DOD; Capacity ≥ nominal capacity* 80%
PoE	
PoE Protocol	IEEE802.3af/at/bt
PoE Port	Port 1-2: IEEE802.3bt Port 3-4: 24V PoE Port 1-8: IEEE802.3af/at
Hardware Specification	
Box Door	Built-in waterproof strips and reinforcement ribs
Lock	Triangle lock
Communication Path	4G+ Fiber uplink/ RJ45 Uplink
Communication Protocol	Serial port transparent transmission, MQTT, TCP/IP, UDP, HTTP, etc.
OLED Display	13inch
Fan	DC24V intelligent temperature-controlled fan
Indicator	DC24V running, alarm indicator, port indicator, status indicator
I/O Module	4*DI, 4*DO
Serial Port	RS232/RS485, 3 channels in total
Box Dimension (H x W x D)	550x380x220mm
Weight	21.2KG
Working Temperature	-40℃ ~ +75℃
Installation	Pole mounted


Application Diagram



Ordering Information

P/N	Description
LA-SB470ES-G0208PB-Z	Solar IoT Box Solar Control + Managed Switch Module (8GE PoE/Port1-2 BT90w + 2GE SFP) Optional: 4G/5G Router + GPS/Battery/Solar Panels



<https://www.lanaotek.com> 

Specifications & design are subject to change without prior notice.

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