

LA-SB600EH-G0208PB-Z

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



Overview

LA-SB600EH-G0208PB-Z Solar Smart Box is a self-developed product highly integrated with solar energy, IoT, communication, PoE, and intelligent operation and maintenance technologies. It serves the digital new energy weak current integrated system and stands out as the industry's first solar power supply system box with comprehensive functions, intelligent management, and wide application.

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

It adopts multi-functional PSE technology to solve power supply issues for various PoE devices. With advanced tech and high-quality materials, it efficiently converts solar energy, 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. It's a one-stop solution for outdoor applications such as 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/5G, 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.
- Supports mains monitoring and mains voltage and current display; automatically collects over voltage, under voltage, and over current alarm information, and remotely controls the switch to automatic foreclosing.
- Support SPD status monitoring through contraindicate inspection.
- Support temperature and humidity detect and parameter display.
- Support box door on/off status detection.
- Supports linkage between lighting and door, door open, lighting on; door close, lighting off.
- 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.

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 TCP IP, 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)

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.

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/48VPoE 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

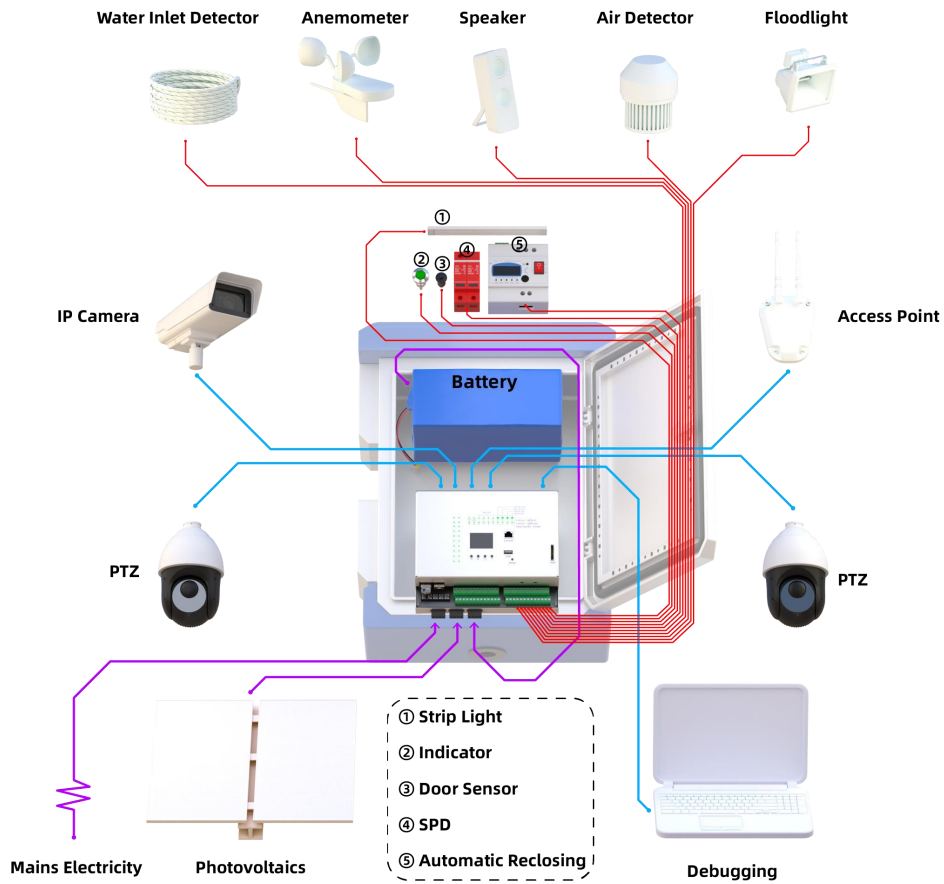
- Widely applied to security monitoring, forest fire prevention, smart agriculture, environmental monitoring, oil, electricity, water conservancy, geological disaster prevention, scenic spots and various unattended environments.

Specifications

Model No.	LA-SB600EH-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; Mains AC100~240V 50/60Hz
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)	730x380x220mm
Working Temperature	-40℃ ~ +75℃
Installation	Pole mounted


Application Diagram



Ordering Information

P/N	Description
LA-SB600EH-G0208PB-Z	Hybrid Solar IoT Box Solar Control + Mains Electricity + 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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