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# 8GE + 2GF Managed IoT Solar Industrial PoE Switch
## Model: SIPM-8G2F-BT90-IOT
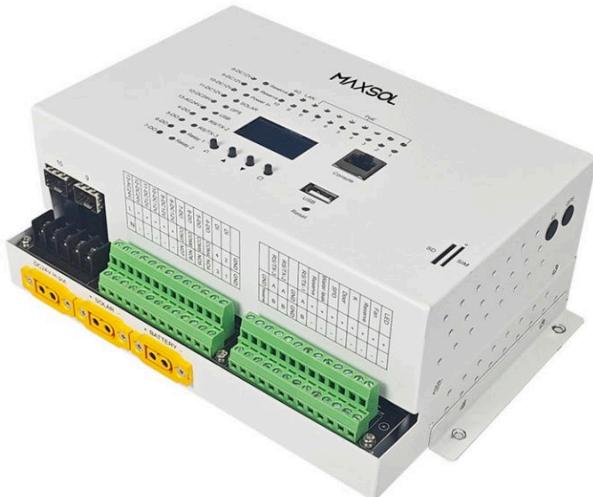
The SIPM-8G2F-BT90-IOT Is A Solar-Powered Intelligent Terminal Integrating IoT, PoE, Communications, And O&M Technologies. Designed For Off-Grid And Weak-Current Systems, It Delivers Efficient, Safe, And Stable Power, Supports Remote Management And Wired/Wireless Communications, Ideal For Outdoor Security, Smart Agriculture, Water, And Power Applications.

- 8GE + 2GF Managed Solar Industrial PoE Switch with IoT Functions | BT 90W | 120W Budget | PV & Battery Monitoring
- 1*RJ45 OOB RJ45 port, 1*RJ45 Console, 1*USB Port, 1*SIM Slot
- Port 1-8: IEEE802.3af/at; Port 1-2: IEEE802.3bt; Port 3-4: 24V PoE
- 1.3-inch OLED display screen
- Power Input: Solar DC24V, Mains AC100-240V 50/60Hz / Adapter Power Supply DC24V
- Power Out: 1* AC24V, 1* DC24V, 4* DC12V
- Indicator: DC24V operation, alarm indicator lights, interface indicator lights, status indicator lights, etc.
- Support Serial port transparent transmission, MQTT, TCP/IP, HTTP, HTTPS, etc.
- Operating Temperature: -40℃-75℃

# Features

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| Model | SIPM-8G2F-BT90-IOT |
| Highly Integrated Design | Integrates solar, IoT, communications, PoE and intelligent O&M technologies for easier installation. |
| Safe & Efficient | Utilizes advanced technology and high-quality materials to achieve high-efficiency solar conversion and ensure safety and stability |
| Eco-Friendly & Energy-Efficient | Achieves zero pollution and reduces dependence on traditional energy sources. |
| Remote Intelligent O&M | Provides predictive alerts (threshold-based), real-time handling and post-analysis, increasing uptime while cutting O&M costs. |
| Intelligent Enclosure Management | Intelligent temperature control (autofan on/off by temperature threshold).<br><br>Mains monitoring (voltage, current, over/under-voltage, over-current alarm and remote auto-reclosing).<br><br>Surge-protector status via telemetry.<br><br>Real-time temperature, humidity and door-status detection.<br><br>Lighting linked to door status (lights on when door opens).<br><br>Water-immersion detection with proactive alarm. |

# Specification

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| Interfaces | 8*10/100/1000M RJ45 ports |
| | 1*RJ45 OOB management port |
| | 1*RJ45 Console |
| | 2*1000M Fiber ports |
| | 1*USB Port |
| | 1*SIM Slot |
| I/O interfaces | 4 channels of DI and 4 channels of DO |
| Serial interfaces | 3 channels in total for RS232/RS485 |
| Processor | Quad-core Cortex-AT processor @1.2GHz main frequency |
| Relays | 1 NO, 1 NC |
| Power Output | 1* AC24V |
| | 1* DC24V |
| | 4* DC12V |
| Battery | Nominal voltage 24V (Max 25.6V) |
| | Nominal capacity 30AH |
| | Total power 720wh |
| PoE | Port 1-8: IEEE802.3af/at |
| | Port 1-2: IEEE802.3bt |
| | Port 3-4: 24V PoE |
| Working Temperature | -40°C – +75°C |
| Communication Method | 4G and optical fiber or RJ45 uplink |
| OLED Screen | 1.3-inch OLED display screen |
| Power Input | Solar DC24V |
| Indicators | DC24V operation, alarm indicator lights, interface indicator lights, status indicator lights, etc. |
| Protection Class | IP20 |
| Dimension(H×W×D) | 163.5*216*88.7mm |
| Weight | Net weight: 1.90kg |

# Power Management

| Power Management | Supports 4-channel DC12V independent control, with a maximum current of 2.5A. It allows remote activation or deactivation of individual power channels, and features automatic overcurrent and short circuit protection with alarm reporting; |
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| | Supports 1-channel DC24V, with a maximum current of 2.5A. It can remotely turn on or off a single-channel power supply, supports automatic overcurrent and short circuit protection, and reports alarms; |
| | Supports 1-channel AC24V, with a maximum current of 2.5A. It can remotely turn on or turn off a single-channel power supply, and supports overcurrent protection with alarm reporting. |
| Battery Management | Support battery charging management; |
| | Support battery discharging management; |
| | Support reverse battery protection; |
| | Support battery overcharge protection; |
| | Support battery over-discharge protection; |
| | Low temperature protection for battery charging (charging ceases when temperature falls below 0ºC); |
| | Low temperature protection for battery discharge(discharge stops when temperature is below 20ºC); |
| | High-temperature protection for battery charging(cease charging when temperature exceeds 70ºC); |
| | High temperature protection for battery discharge(discharge stops when temperature exceeds 70ºC). |
| Serial Port & DI/DO Management | Supports 2-channel 485/232 serial ports and 4-channel DI/DO switch signals; |
| | Support remote opening/closing of serial ports and DI/DO states, and display the detection status of serial port and switch connections; |
| | Supports detecting serial port TX and RX traffic; |
| | Supports configuration of serial port baud rate, start bit, parity bit, stop bit, flow control, and other parameters, as well as serial port data transparent transmission supporting Ethernet encapsulation content such as TCP/IP and port number configuration; |
| | Support indicator lights to display the connection status of serial ports and DI/DO. |
| Switch Network Management | Support jumbo frames to ensure stable and reliable transmission of large data frames; |
| | Support flow control function, automatically adjust the sending rate; |
| | Support 802.1Q VLAN function to divide different services without interference; |
| | Support MAC address whitelist and secure access authentication; |
| | Support port traffic statistics. |
| 4G LTE Management | Support remote viewing of 4G status, such as obtained addresses, module frequency band information, and signal status; |
| | Support network priority settings: priority 4G/priority wired transmission; |
| | Support manual modification of APN settings; |
| | Support SIM card presence detection. |

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| Solar Control and Management | Support reading and displaying voltage, current, and power of solar panels;<br><br>Support reading battery status;<br><br>Support the collection of the following data: the lowest voltage of the battery on the current day, the highest voltage of the battery on the current day, the maximum charging current on the current day, the maximum discharging current on the current day, the maximum charging power on the current day, the maximum discharging power on the current day, the ampere-hours of charging on the current day, the ampere-hours of discharging on the current day, the amount of electricity generated on the current day, and the amount of electricity consumed on the current day;<br><br>Supports reading the device's operating days, over-discharge count, and full charge count. |
| System Management | Support username and password management;<br><br>Support display of software and hardware versions;<br><br>Support remote upgrade of firmware and configuration;<br><br>Support remote restarting;<br><br>Support resetting to factory settings;<br><br>Support NTP clock protocol. |

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