

**Industrial Renewable Power
5-Port Gigabit Managed Switch/Router
with 4-Port 802.3at PoE+**

BSP-360

Quick Installation Guide

Safety Precautions

Please read the following before using:

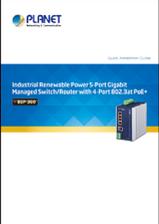
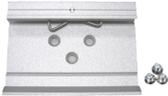
1. All electrical work must be done in accordance with local, and/or international electrical codes.
2. Before installing or using this device, read all instructions and cautionary marking located in (or on) this guide, the controller, the batteries, PV (Photovoltaic) array and any other device used.
3. To reduce the risk of short-circuits, use insulated tools when installing or working with the inverter, the controller, the batteries, or any DC source (e.g., PV).
4. Remove all jewelry. This will greatly reduce the chance of accidental exposure to live circuits.
5. The controller contains more than one live circuit (batteries and PV array). Power may be present at more than one source.
6. This product contains no user serviceable parts. Do not attempt to repair this unit unless fully qualified.

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1. Package Contents

Thank you for purchasing PLANET Industrial Renewable Energy Managed PoE Switch/Router, BSP-360. Open the box of the BSP-360 and carefully unpack it. The box should contain the following items:

<p>1 x BSP-360</p> 	<p>1 x Quick Installation Guide</p> 	
<p>1 x Wall Mounting Kit</p> 	<p>1 x DIN-rail Kit</p> 	<p>5 x RJ45 Dust Cap</p> 

If any of these are missing or damaged, please contact your dealer immediately. If possible, retain the carton including the original packing materials to enable you to repack the product in case there is a need to return it to us for repair.

2. Requirements

PLANET BSP-360 provides a remote login interface for management purposes. The following equipment is necessary for further management:

- Workstation is installed with Ethernet NIC (Network Interface Card)
- Choice of Internet browsers includes Windows XP/2003, Vista, Windows 7, Windows 8, Windows 10, Windows 11, MAC OS X, Linux, Fedora, Ubuntu or other platforms compatible with TCP/IP protocols.
 - The above workstation is installed with Web browser and JAVA runtime environment plug-in.
- Ethernet Port connection
 - Use standard network (UTP) cables with RJ45 connectors.
- PV and battery
 - Two 12V lithium or lead-acid batteries connected in series or one 24V lithium or lead-acid battery.
 - The maximum operating voltage of PV is 45V.



Note

It is recommended to use Chrome 98.0.xxx or above to access the BSP-360.

3. Hardware Introduction

3.1 Front Panel

The front panel of the BSP-360 consists of 5 auto-sensing 10/100/1000Mbps Ethernet RJ45 ports and one USB interface. The LED Indicators are also located on the RJ45 ports of the BSP-360.

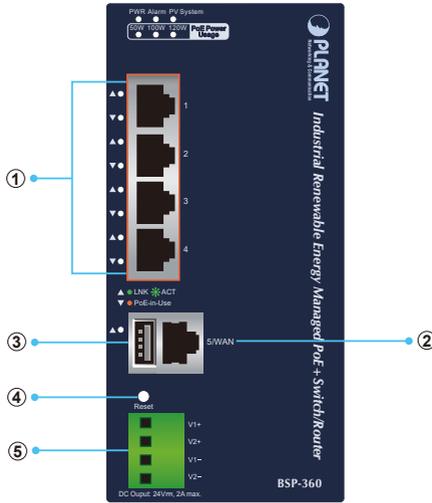


Figure 3-1 Front Panel of BSP-360

Item	Interface	Description
1	Port-1~Port-4	4 10/100/1000BASE-T RJ45 auto-MDI/MDI-X ports with 802.af/at PoE+ injector function.
2	Port-5	One 10/100/1000BASE-T RJ45 auto-MDI/MDI-X port. Port-5 functions as WAN port when the operation mode of BSP-360 is configured to " Gateway mode ".
3	USB	Connect the USB storage to USB port and back up the configuration file.
4	Reset Button	< 5 seconds: System reboot. > 10 seconds: Factory default.
5	4-pin Terminal Block	2 x 24V 2A DC output connector. The output voltage is the same as battery voltage. Maximum power output is clamped at 48W.

3.2 LED Indicators

■ System

LED	Color	Function	
PWR	Green	On	To indicate BSP-360 has power.
Alarm	Red	Slow Blinks	To indicate PV < 24V.*
		Fast Blinks	To indicate battery voltage is ≤ LVD.*
PV System	Green	Slow Blinks	To indicate the system is "Not Charging" .
		Fast Blinks	To indicate the battery is "Charging" .
50W	Amber	On	To indicate the system consumes over 50-watt PoE power budget.
100W	Amber	On	To indicate the system consumes over 100-watt PoE power budget.
120W	Amber	On	To indicate the system consumes a total 120-watt PoE power budget.

* The detection voltage will have a tolerance of ±0.7V.

■ PoE 10/100/1000BASE-T Interfaces (Port-1 to Port-4)

LED	Color	Function	
LNK/ACT	Green	Blinks	To indicate the link through that port is successfully established.
PoE	Amber	Lights	To indicate the port is providing DC in-line power.
		Off	To indicate the connected device is not a PoE Powered Device (PD).

■ 10/100/1000BASE-T Interfaces (Port-5)

LED	Color	Function	
LNK/ACT	Green	Blinks	To indicate the link through that port is successfully established.

3.3 Upper Panel

The upper panel of the BSP-360 consists of one terminal block connector with PV and battery power inputs.

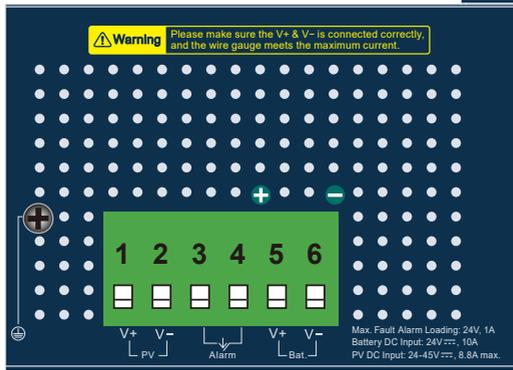
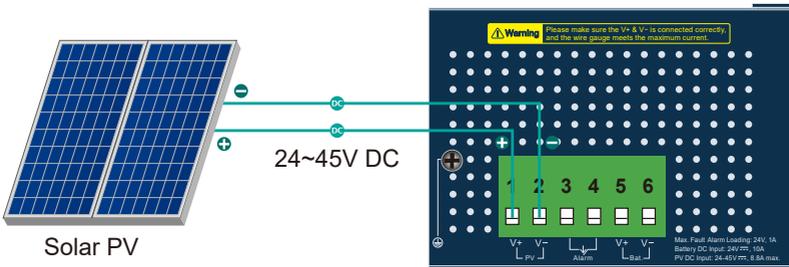


Figure 3-2 Upper Panel

The input voltage range of each interface is shown as follows:

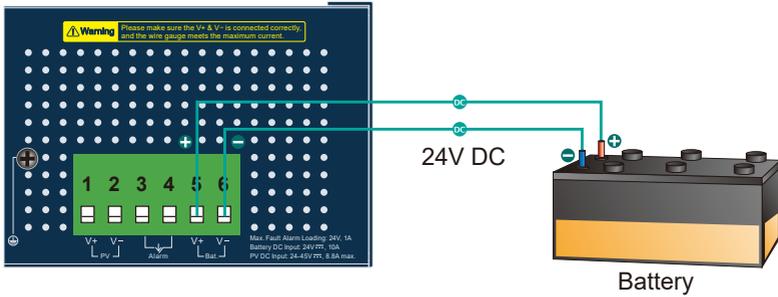
PV In Connector

24~45V DC



Battery In/Out

24V DC



Note

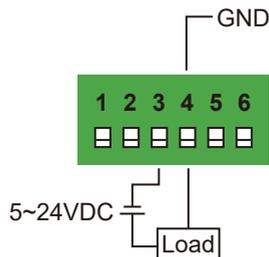
The wire gauge for the terminal block should be in the range from **16 to 20 AWG**.

Fault Alarm Connectors

The fault alarm contacts are in the middle (3 & 4) of the terminal block connector as the picture shows below. Inserting the wires, the Renewable Energy Switch will detect the fault status of the power failure.

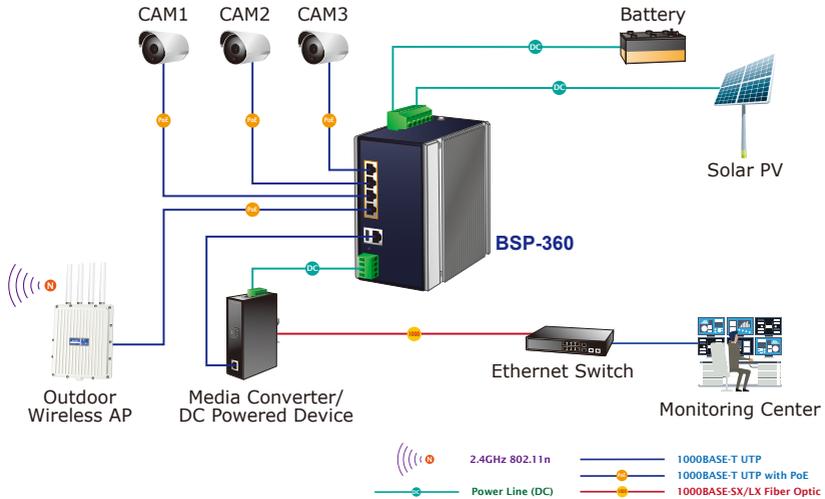
*When the system is "ON", the fault alarm is "off".

*When the system is "OFF", the fault alarm will "trigger".



4. Hardware Installation

The following section describes the hardware installation of the BSP-360. Before connecting any network device to the BSP-360, read this chapter carefully.



Please follow the following steps to install the system:

Step 1. Installing BSP-360

Place the BSP-360 in a desired location using the wall-mount or Din-rail fixtures.



Note

- Please install the BSP-360 in a proper enclosure or shelter.
- The BSP-360 must be grounded.

Step 2. Installing battery



1. Connect the **negative electrode of the battery** to the terminal for the **negative electrode of the battery on the BSP-360**. By default, the lithium battery is in use.
2. Connect the **positive electrode of the battery** to the terminal for the **positive electrode of the battery on the BSP-360**.
3. After the battery is well connected to the BSP-360, the **PWR LED will be ON** and **System LED will slowly blink**, and **Alarm LED will slowly blink**.



The BSP-360 accepts the **24V DC** battery system. Please pay attention to the battery characteristics and also refer to the section -- **Recommended Settings for Different Batteries** in the Quick Installation Guide.



Note

- Be noted for the thickness of electric wire and please refer to the section -- **Recommended Use of the Connected Wires** in the Quick Installation Guide.
- **Before the first installation**
 - The lead-acid battery default **LVD (Low Voltage Disconnection) is set at 22.2V DC**; we suggest charging the voltage of battery to **23.5V DC or above** for the BSP-360.
 - The lithium battery default **LVD (Low Voltage Disconnection) is set at 21.3V DC**; we suggest charging the voltage of battery to **24V DC or above** for the BSP-360.



Check the total power consumption of your connected network device before installation. Improper battery capacity could shorten the battery life or make your network device lack of power supply.



Note

Please link to PLANET Download Center and download **BSP360-PV&BAT_calculation**. The calculation list can help you to select solar panel and battery. Refer to Section 6 for customer support.

Step 3. Installing PV Panel



1. Connect the **negative electrode of the PV panel** to the terminal for the **negative electrode of the PV panel on the BSP-360**.
2. Connect the **positive electrode of the PV panel** to the terminal for the **positive electrode of the PV panel on the BSP-360**.
3. After the PV is well connected to the BSP-360 and providing 24V or above voltage, the **System LED will blink fast** for **battery charge if the battery is not full**.



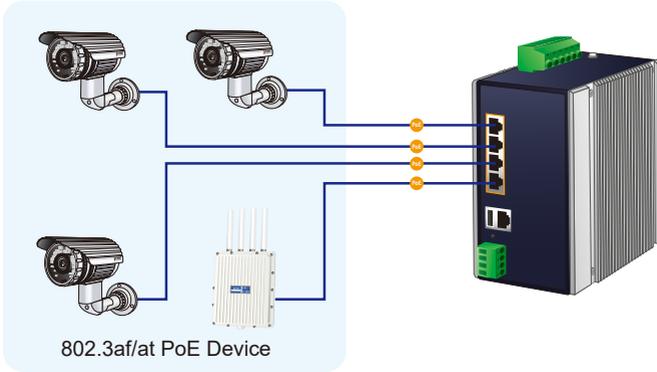
Note

- Be noted for the thickness of electric wire and please refer to the section -- **Recommended Use of the Connected Wires** in the Quick Installation Guide.
- Check the total power consumption of your device and the sunshine duration of your area from the weather bureau for a proper PV. Improper PV could shorten the battery life or provide insufficient power to the BSP-360.



The BSP-360 supports a maximum of **45V 8.8A DC input**.

Step 4. Connecting 802.3af/802.3at PoE Device



1. Connect the PoE devices to ports 1~4 on the BSP-360.
2. Check the PoE-in-Use LED. If the network devices such as PoE camera and PoE wireless AP are powered, the **PoE-in-use LED will turn ON** and **Link/Act LED will blink** for a successful connection or data receiving.



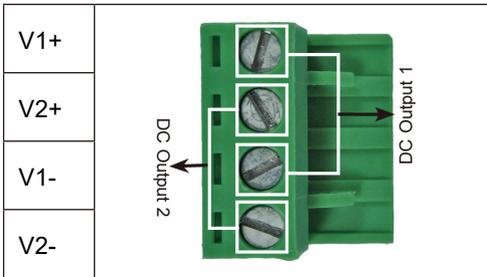
Note

- Please use **Cat5/5e or above cable** and the maximum distance should be within **100 meters**.
- If the Network devices are installed outdoors, please consider to install a well-grounded lightning arrester (such as PLANET ELA-100) to protect the network device and the BSP-360.

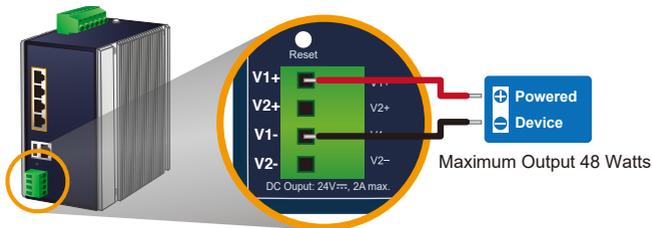
Step 5. Wiring the DC Outputs

Please follow the steps below to insert the power wires for DC power required equipment.

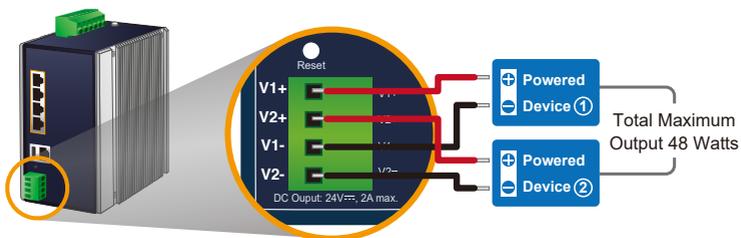
1. Please find the terminal block connector with two DC power outputs shown below:



2. Insert the **Positive and Negative DC wires** into the **V+ and V- terminals**, respectively; Terminals 1 and 3 for Power 1, and Terminals 2 and 4 for Power 2.
3. Connect the other points of DC power wires to the power devices. Tighten the wire-clamp screws for preventing the wires from loosening.



One Powered Device



Two Powered Devices

4. Install the terminal block on the BSP-360.

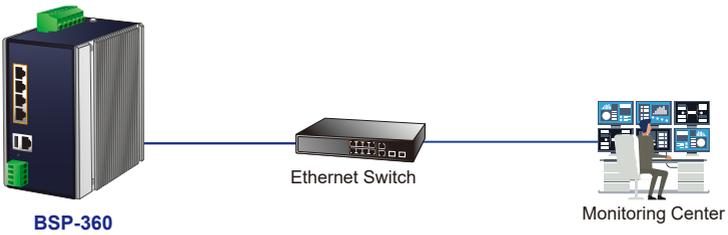


- a. The voltage of DC out is based on the battery voltage and the maximum DC out from the BSP-360 is **24VDC, 2A**.
- b. The wire gauge for the terminal block should be in the range from **16 to 20 AWG**.
- c. The external device should also be grounded properly.



Please ensure the output voltage is correct for remote device. Otherwise, it will damage your remote device.

Step 6. Connecting to PC or your remote Ethernet network.

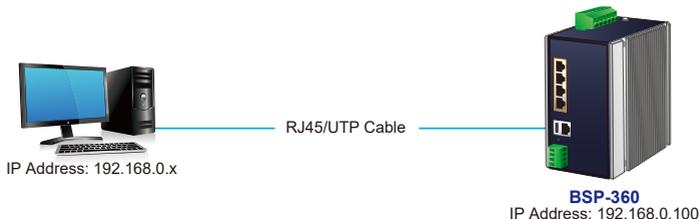


After completing the above 6 steps, the BSP-360 is ready for service.

5. Web Management

The following shows how to start up the **Web Management** of the BSP-360. Note the BSP-360 is configured through an Ethernet connection. Please make sure the manager PC must be set to the same **IP subnet address**.

For example, the default IP address of the BSP-360 is **192.168.0.100**, then the manager PC should be set to **192.168.0.x** (where x is a number between 1 and 254, except 100), and the default subnet mask is 255.255.255.0.



Logging in to the BSP-360

Step 1. Use Internet Explorer 8.0 or above for Web browser and enter IP address **<http://192.168.0.100>** (the factory-default IP address) to access the Web interface.

Step 2. When the following dialog box appears, please enter the default user name "admin" and password "admin" (or the password you have changed before).

Default IP Address: **192.168.0.100**

Default User Name: **admin**

Default Password: **admin**

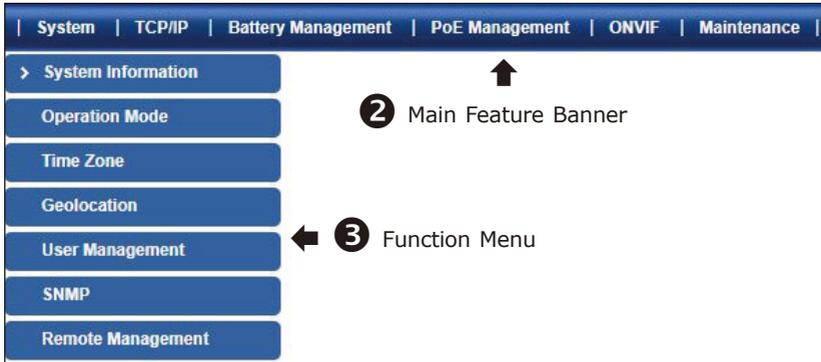


Step 3. After entering the password, the main screen appears. The above banner shows the information of Green Power, Total Power Usage, PoE Usage and Battery Capacity.

1 Top Banner



Step 4. The Function Menu on the left of the Web page lets you access all the functions and status the BSP-360 provides.



Now, you can use the Web management interface to continue the BSP-360 management. Please refer to the user manual for more details.



Note

For security reason, please change and memorize the new password after this first setup.

6. [OPTIONAL] Deployed Devices Monitored via NMS-360 Controller



Note

If you also have an NMS-360 controller, please refer to the following steps to set up the central management.

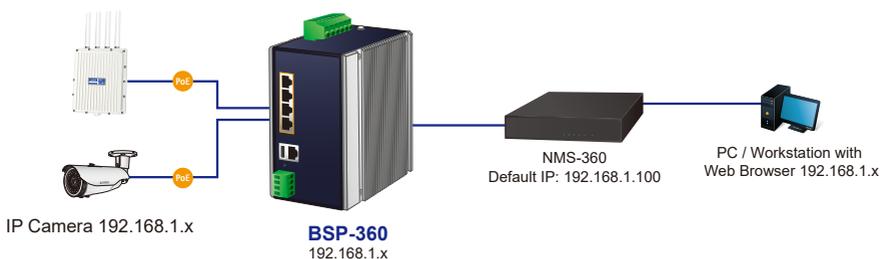
The NMS-360 is used to centrally manage a large number of BSP-360. Therefore, you need to upgrade the BSP-360 firmware before using NMS-360. Please download and use the latest BSP-360 firmware from the website so that setting can be completed smoothly.

The NMS-360 incorporated in a workstation can monitor the BSP-360s compliant with the MQTT Protocol, SNMP Protocol, ONVIF Protocol and PLANET Smart Discovery utility.

Follow the steps below to set up the NMS-360 and BSP-360 accordingly.

Step 1. Connect the devices, NMS-360 Controller and your computer to the same network.

Managed AP 192.168.1.x



IP Camera 192.168.1.x

BSP-360
192.168.1.x

NMS-360
Default IP: 192.168.1.100

PC / Workstation with
Web Browser 192.168.1.x

Step 2. BSP-360: Log in to the BSP-360 Web User Interface and **enable both the SNMP and NMS controller functions.**

> System Information	SNMP Management
Operation Mode	System Community
Time Zone	SNMP Agent: Enable 2
Geolocation	SNMP Read Community: public
User Management	SNMP Write Community: private
1 SNMP	System Option
Remote Management	System Name: BSP-360
	System Location: Default Location
	Contact: Default Contact
	SNMP Trap Receiver Configuration
	SNMP Trap: Disable
	SNMP Trap Destination: 192.168.0.200
	Apply Reset

Enable "SNMP"

> System Information	Remote NMS Configuration
Operation Mode	Remote NMS Enable: PLANET NMS Controller - LAN 2
Time Zone	PLANET NMS Controller - LAN
Geolocation	NMS Controller IP address: N/A
User Management	Authorization Status:
1 SNMP	Apply Reset
1 Remote Management	

Enable "NMS"



Note

If you want to use central management, and ONVIF monitoring functions, please refer to the user manual or NMS-360 series related profile.

7. Customer Support

Thank you for purchasing PLANET products. You can browse our online FAQ resource on PLANET web site first to check if it could solve your issue. If you need more support information, please contact PLANET switch support team.

Support team mail address:
support@planet.com.tw

BSP-360 User's Manual:

<https://www.planet.com.tw/en/support/downloads?&method=keyword&keyword=BSP-360&view=3#list>



BSP-360 PV&BAT Calculation:

<https://www.planet.com.tw/en/support/faq?method=keyword&keyword=BSP-360+Calculation>



Appendix A: Recommended Use of the Connected Wires

The wire gauges for the current are shown below:

Gauge	Diameter	Amp
AWG #16	1.295	10.00
AWG #17	1.143	8.40
AWG #18	1.016	6.40
AWG #19	0.914	5.20
AWG #20	0.813	4.00

Appendix B: Recommended Settings for Batteries

Use **Lead-acid** battery for BSP-360. You could set the Battery type at **Battery Management** on the web of BSP-360.

Battery Management

Battery Type	Lead-acid Battery ▾		
Battery Capacity	0	Ah	
Install Time of Battery	2022	2	8 Today
Battery Life	365	Days	
Fully-Charged Hold Time	60	Minute(s) (0~255) ⓘ	
Float Charge Voltage	27.2	V (26.0~30.0V)	
Absorption Charge Voltage	29.2	V (28.0~32.0V)	
Low Voltage Disconnection	22.2	V (21.0~23.0V)	
Low Voltage Reconnection	23.5	V (23.5~27.0V)	
Low Voltage Cut-off Protection Mode	OFF ▾		

Use **Lithium** battery for BSP-360. You could set the Battery type at **Battery Management** on the web of BSP-360.

Battery Management

Battery Type	Lithium Battery ▾		
Battery Capacity	0	Ah	
Install Time of Battery	2022	2	8 Today
Battery Life	365	Days	
Fully-Charged Hold Time	60	Minute(s) (0~255) ⓘ	
Low Voltage Disconnection	21.3	V (19.6~23.0V)	
Low Voltage Reconnection	24	V (23.5~25.0V)	
Low Voltage Cut-off Protection Mode	OFF ▾		

Appendix C: BSP-360 Battery Default Setting

Battery Information		
Setting \ Type	Lithium Battery (Default)	Lead-acid Battery
FCV (Float Charge Voltage)	26.6V	27.2V
ACV (Absorption Charge Voltage)	28.7V	29.2V
LVD (Low Voltage Disconnection)	21.3V	22.2V
LVR (Low Voltage Reconnection)	24.0V	23.5V
Default Charge Board LVD	21.3V	
Default Charge Board LVR	24.0V	

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