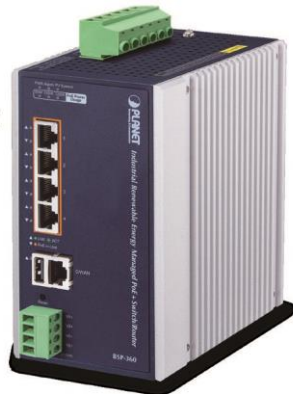# Industrial Renewable Power 5-Port Gigabit Managed Switch/Router with 4-Port 802.3at PoE+

Industry-leading Integration of PoE Technology and Renewable Power System

PLANET's newly-launched Renewable Energy Industrial 802.3at PoE Managed Ethernet Switch, BSP-360, is designed for deploying a surveillance or wireless network and remotely monitoring and managing the IP-based devices. Based on its green technology, the BSP-360 can be charged by the inexhaustible and natural source of energy, such as solar, wind and hydroelectric power to conserve energy so as to economically power these remote IP cameras and wireless APs, especially used for such expansive applications as dams, forests, deserts, national parks, nature/animal protection areas and highways.

PLANET NMS-360 Network Management Controller can centrally manage up to 512 BSP-360 units and 2,048 PLANET IP cameras via MQTT and ONVIF Protocols. (Please regularly check PLANET website for the latest compatibility list of managed devices.)

MPPT (Maximum Power Point Tracking) Charge Controller

An MPPT (Maximum Power Point Tracker) is an electronic DC to DC converter that optimizes the match between the PV solar panels and the battery bank or utility grid. They convert a higher voltage DC output from solar panels (and a few wind generators) to the lower voltage needed to charge the battery effectively. It can support PV module input of up to 400W of power.

Physical Port

- 5-port 10/100/1000BASE-T Gigabit RJ45 copper with 4-port IEEE 802.3at/af PoE injector function (Port 1 to Port 4)
- RJ45 type interface for basic management and setup
- USB type A female for setting

Power over Ethernet

- Complies with IEEE 802.3at Power over Ethernet Plus end-span PSE
- Backward compatible with IEEE 802.3af Power over Ethernet
- Up to 4 ports of IEEE 802.3af/802.3at devices powered
- Supports PoE power up to 36 watts for each PoE port
- Auto detects powered device (PD)
- Circuit protection prevents power interference between ports
- Remote power feeding up to 100 meters
- PoE management
  - Total PoE power budget control
  - Per port PoE function enable/disable
  - PoE port power feeding priority
  - Per PoE port power limitation
  - PD alive check
  - PoE schedule

Battery Management

- Battery type option: Lithium battery or lead-acid battery
- Easy diagnostic of the system operating status via LED indicator
- Current battery usage status
- Low voltage cut-off protection: Send alert and cut off power when the battery is low
- MPPT (Maximum Power Point Tracking) Charge Controller
  - Reverse current protection to prevent the current circuits from flowing back to
  - Over-current protection
 - Reverse polarity protection (for battery and charging electrodes)

Industrial Case and Installation

- IP30 aluminum case
- DIN-rail and wall-mounted designs
- Supports -10 to 60 degrees C operating temperature
- Supports ESD 6KV DC Ethernet protection
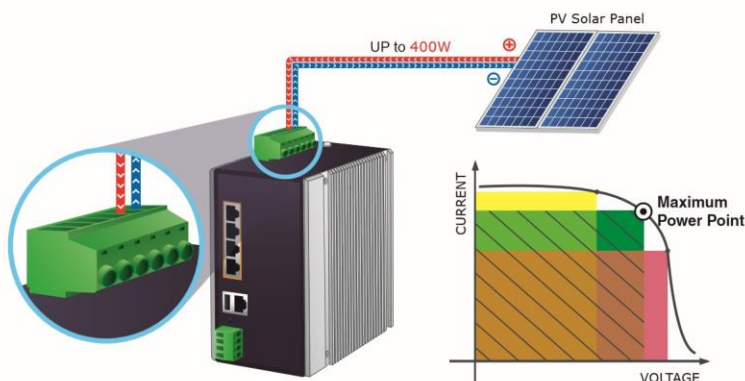
Zero-Carbon and Stable Power Supply

The 24V lithium or lead-acid battery gets recharged by way of the BSP-360 where solar power is sourced. Thus, the BSP-360 will keep powering PD devices without the need of any cabling. Its zero-carbon feature is made possible as the energy the unit gets is renewable. Most importantly, the operation of outdoor wireless IP-based surveillance can be continued into the night as the battery is charged during the day.
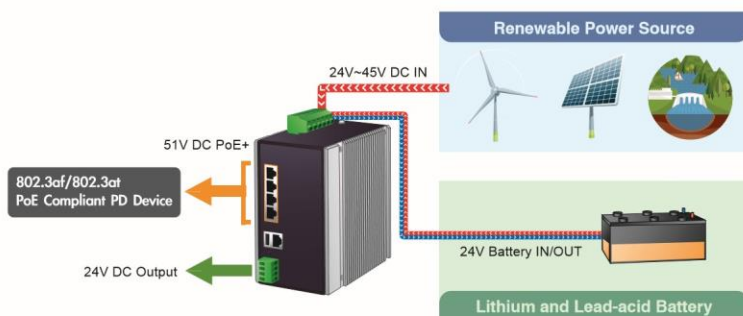
Smart Battery Management

The BSP-360 features the following special power management functions:

- Current battery usage status by percentage
- Low voltage cut-off protection
- Fully-charged hold time protection

User-friendly and Secure Management

The administrator can remotely access the BSP-360 to know the power status of the battery and renewable energy, and the estimated time of power consumption.

- Redundant power supply
- 24V~45V DC wide power input

Switching

- Hardware-based 10/100Mbps (half/full duplex), 1000Mbps (full duplex), auto-negotiation and auto MDI/MDI-X
- Features Store-and-Forward mode with wire-speed filtering and forwarding rates
- IEEE 802.3x flow control for full duplex operation and back pressure for half duplex operation
- 8K MAC address table size
- Automatic address learning and address aging

Router

- Internet types: Dynamic IP, static IP, PPPoE, L2TP, PPTP
- Static and dynamic (RIP1 and 2) routing
- IP/MAC-based bandwidth control
- Supports Port Forwarding, DMZ, UPnP and Dynamic DNS for various networking applications
- 802.1d STP and IGMP Proxy

Security

- Port filtering allows which application can access the Internet.
- MAC filtering allows you to include or exclude computers and devices based on their MAC address
- URL filtering allows you to control access to Internet websites in an URL list
- IP source guard prevents IP spoofing attacks
- DoS attack prevention

Management

- Switch Management Interface
  - IPv4 Web switch management
  - SNMP v1, v2c
- Static and DHCP for IP address assignment
- System Maintenance
  - Firmware upload/download via HTTP
  - Configuration upload/download through HTTP
  - Hardware-based reset button for system reboot or reset to factory default
- Network Time Protocol
- SNMP trap for Link Up and Link Down notification
- Event message logging to remote syslog server
- Supports PLANET ONVIF IP camera and snapshot function
- PLANET Smart Discovery Utility
- Supports PLANET NMS-360 Network Management Controller

For efficient management, the BSP-360 is equipped with web and SNMP management interfaces. With the built-in web-based management interface, the BSP-360 offers an easy-to-use, platform-independent management and configuration facility. By supporting the standard SNMP, the switch can be managed via any standard management software.
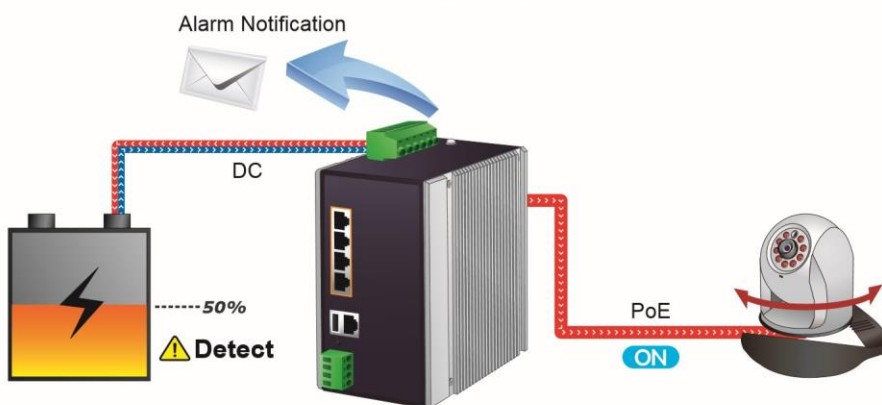

Battery Management **System Status** **NMS-360 Web GUI**

Low Voltage Cut-Off Protection

If the remaining energy is too low to power the network, the system will automatically power off the device to make sure the system works normally, and an alert is then sent to the administrator at the same time.

Status A: Normal Operation

Status B: Middle Battery Capacity

Status C: Low Battery Capacity