Industrial Wall-mount Gigabit Router with 4-Port 802.3at PoE+

All-in-One Industrial Router Enhances IoT Network

PLANET WGR-500-4P is an industrial router with 8023at PoE+ capability, designed for Internet of Things (IoT) network. It is capable of having a maximum of up to 120 watts of power output and unique PoE mechanism that facilitates the Ethernet PoE PD management more efficiently in Industrial networks, such as factory, transportation, government buildings, and other public areas. It also features the following special management and operation functions. The WGR-500-4P is the best solution for industry router application.
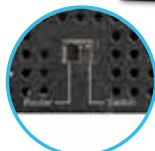
- Wizard design and IPv6 / IPv4 support
- Router and switch working mode
- Firewall with 802.1Q VLAN security
- PoE usage indicator and management
- 48-56V DC dual power design

Dual power design PoE usage indicator

DIP switch for router/switch mode USB backup and restore of system

Physical Port

- 4-port 10/100/1000BASE-T RJ45 with IEEE 802.3af/802.3at PoE injector
- 1-port 10/100/1000BASE-T RJ45 for WAN port or LAN port interface (router mode/switch mode)
- 1 x USB 3.0 port for back up and restoration of configuration file

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)
- Remote power feeding up to 100 meters
- PoE Management
  - PoE Port status monitoring
  - Total PoE power budget control
  - Per port PoE function enable/disable
  - PoE Port power feeding priority
  - Per PoE port power limit
  - PD classification detection
  - PoE alive check

Industrial Case and Installation

- Compact size with fixed wall mounting, magnetic wall mounting or DIN-rail design
- IP30 metal case
- Supports **-10 to 60** degrees C operating temperature
- Supports ESD 6KV DC Ethernet protection
- Dual power input design
  - 48V~56V DC wide power input with polarity reverse protect function
  - 3-pin terminal block or DC jack connector

Layer 2 Features

- Supports IEEE 802.1Q tagged VLAN
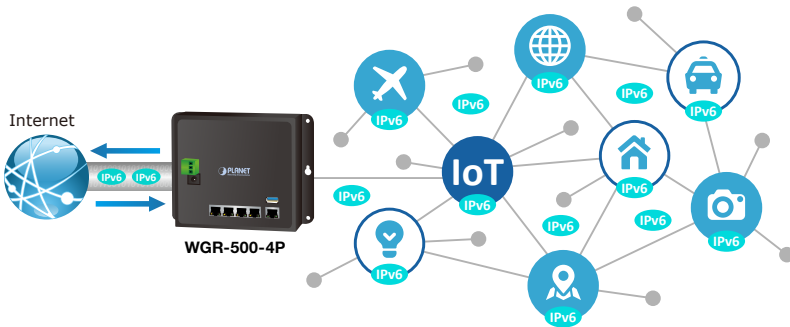- Supports IEEE 802.1D Spanning Tree Protocol (STP)

Layer 3 IP Routing Features

- IPv6 support
- WAN Internet types: Dynamic IP(DHCP Client), static IP, PPPoE, L2TP, PPTP
- Static and dynamic (RIP1 and 2) routing
- Supports Port Forwarding, DMZ, UPnP and for various

IPv6 Support for IoT Networking

With billions of new IoT devices entering the market each year, IPv4 is faced with the issue of not being able to fulfill the requirements of connecting all the IoT products together. IPv6 offers a highly-scalable address scheme that provides a unique 64-bit host ID to every present and future IoT device. It is sufficient to address the needs of any present and future communication device. That means IPv6 allows IoT products to be uniquely addressable without having to work around all of the traditional NAT and firewall issues.
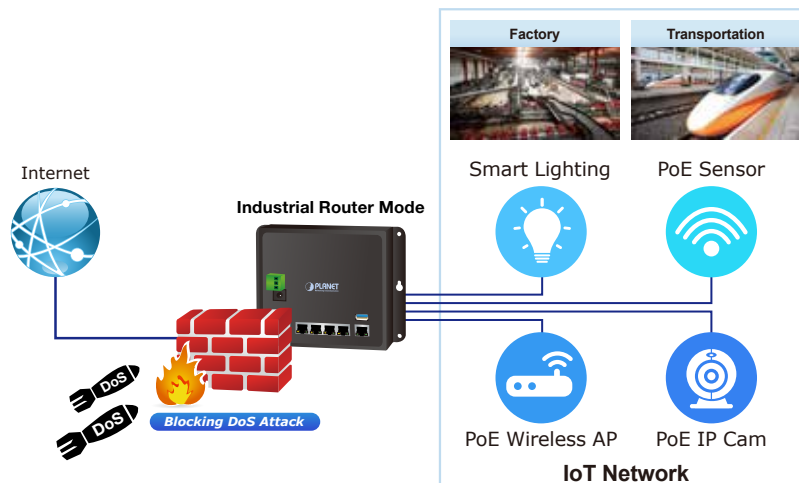
The WGR-500-4P supports both IPv6 and IPv4 to ensure industrial Ethernet with a smooth migration path from the IPv4-based networks to the full IPv6 infrastructure. It assigns IPv6 addresses to clients and passes the IPv6 traffics through the IPv4 environment. The WGR-500-4P supports IPv4 tunneling (6to4 transition tunnel) implementations for IoT connectivity.

networking applications
- IP/MAC-based bandwidth control
- Supports Dynamic DNS and PLANET DDNS

Security

- Port filtering lets you either allow or prevent which applications 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

- Management Interfaces
  – Web GUI management
- Static and DHCP for IP address assignment
- System Maintenance
  – Firmware upload/download via HTTP
  – Hardware reset button for system reboot or reset to factory default
- NTP Network Time Protocol
- Event message logging to remote syslog server
- PLANET Smart Discovery Utility for deployment management

Secure Firewall Protection

The denial-of-service attacks (DoS) attempt to consume resources and therefore deny users network and application access. There are two types of DoS attacks – SYN floods and ping of death that consume actual server resources, or those of intermediate communication equipment, such as firewalls and load balancers, and the other, volume-based attacks like UDP/ICMP floods and other spoofed-packet floods that would saturate the bandwidth of the attacked site.

The WGR-500-4P provides firewall to protect IoT devices against networking attack like denial-of-service (DoS), and emerging malicious traffic before attacks can occur. With firewall protection, it prevents IoT network from threats and keeps networking more secure.

VLAN Support for Isolated Traffic and Security

Virtual LANs (VLANs) offer the logical grouping technique to separate the physical ports of Ethernet switch. It can separate private network into several parts for different users. If there are too many computers or networking devices in the same network segment, it will result in heavy traffics locally. Besides, VLANs provide enhanced network security that network administrators can control over each port and whatever resources it is allowed to use.

The WGR-500-4P supports 802.1Q VLAN to separate traffic of users and IoT devices and can work as an intelligent traffic forwarder to control traffic and isolate connections of two groups. It will not only optimize bandwidth but also improve network security.
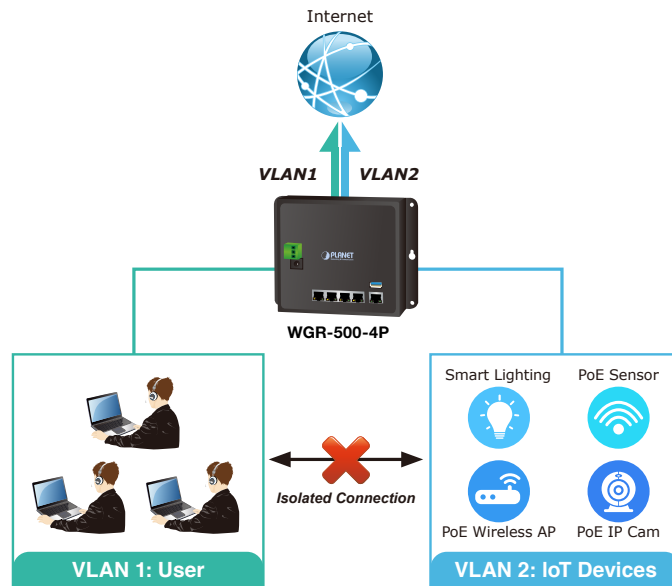

Centralized Remote Control of Managed APs*

The IGS-10020HPT PoE Switch can be configured to monitor connected PD's status in real time via ping action. Once the PD stops working and responding, the IGS-10020HPT will recycle the PoE port power and bring the PD back to work. It also greatly enhances the reliability in that the PoE port will reset the PD power, thus reducing administrator's management burden.
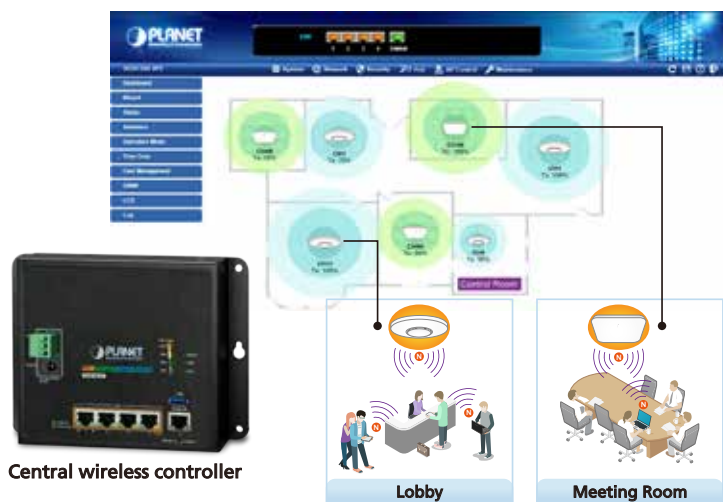
For example, to configure multiple Smart APs of the same model, the WGR-500-4P allows clustering them to a managed group for unified management. According to requirements, wireless APs can be flexibly expanded or removed from a wireless AP group at any time. The AP cluster benefits bulk provision and bulk firmware upgrade through single entry point instead of having to configure settings in each of them separately.

Simplified Cluster Management with 4 Steps

Step 1	Step 2	Step 3	Step 4
Search	Add Profile	Batch Provisioning	Map It
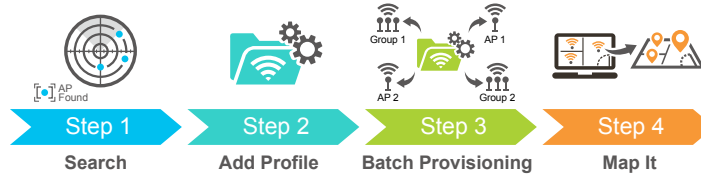
*Note: The feature will be available via firmware upgrade.

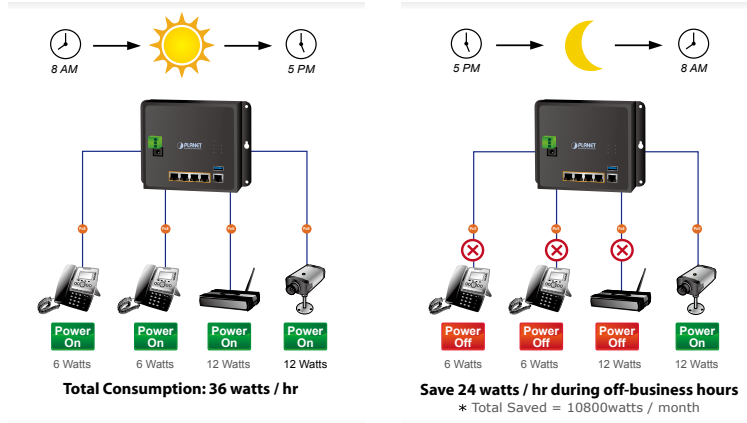*Built-in Unique PoE Functions for Powered Devices Management*

The WGR-500-4P is capable of having a maximum of up to 120 watts of power output and can deliver up to 36W for each port. It also features the following special PoE management functions:

- PoE usage monitoring

  With PoE usage monitoring, it can show the PoE loading of each port, total PoE power usage and system status, such as overload, low voltage, over voltage and high temperature. User can obtain detailed information about the real-time PoE working condition of the WGR-500-4P directly.

- PoE schedule

  Under the trend of energy saving worldwide and contributing to environmental protection, the WGR-500-4P can effectively control the power supply besides its capability of giving high watts power. The "PoE schedule" function helps you to enable or disable PoE power feeding for each PoE port during specified time intervals and it is a powerful function to help SMBs or enterprises save power and budget. It also increases security by powering off PDs that should not be in use during non-business hours.
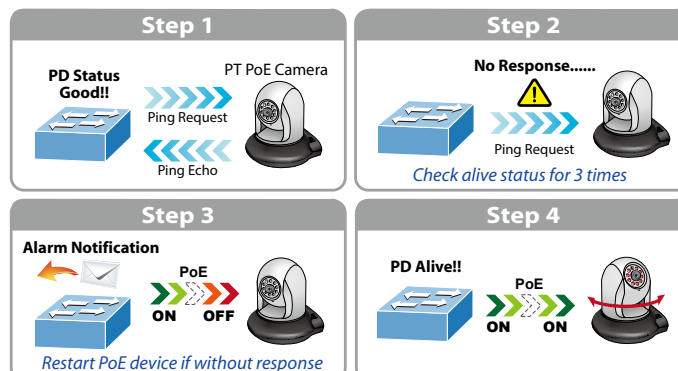

8 AM → 5 PM

Power On — 6 Watts
Power On — 6 Watts
Power On — 12 Watts
Power On — 12 Watts

Total Consumption: 36 watts / hr

5 PM → 8 AM

Power Off — 6 Watts
Power Off — 6 Watts
Power Off — 12 Watts
Power On — 12 Watts

Save 24 watts / hr during off-business hours
✱ Total Saved = 10800watts / month

1000BASE-TX UTP with PoE

- Scheduled power recycling

  The WGR-500-4P allows each of the connected PoE IP cameras or PoE wireless access points to reboot at a specific time each week. Therefore, it will reduce the chance of IP camera or AP crash resulting from buffer overflow.

- PD alive check

  The WGR-500-4P can be configured to monitor connected PD status in real time via ping action. Once the PD stops working and responding, the WGR-500-4P will resume the PoE port power and bring the PD back to work. It will greatly enhance the network reliability through the PoE port resetting the PD's power source and reducing administrator management burden.

Step 1 — PD Status Good!! — PT PoE Camera — Ping Request — Ping Echo

Step 2 — No Response...... — Ping Request — *Check alive status for 3 times*

Step 3 — Alarm Notification — PoE ON OFF — *Restart PoE device if without response*

Step 4 — PD Alive!! — PoE ON ON
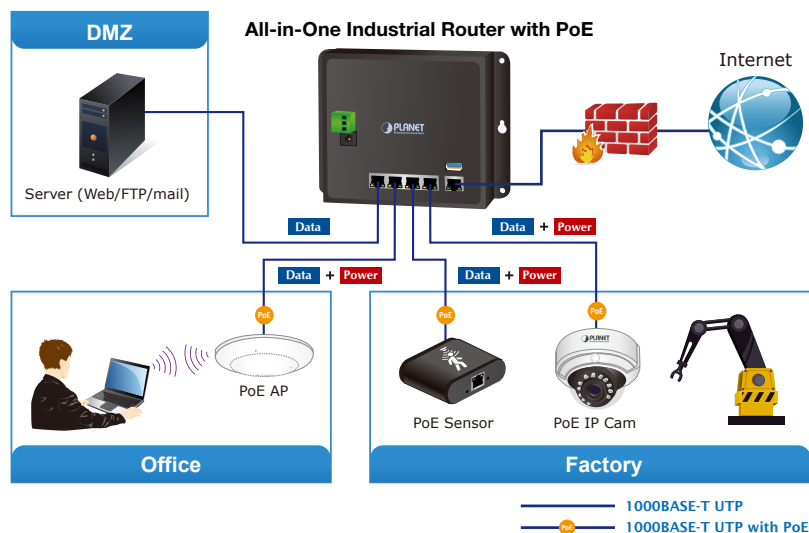
Innovative Wall-mount Installation

The WGR-500-4P is specially designed to be installed in a narrow environment, such as wall enclosure or electric weak box. The compact, flat and wall-mounted design fits easily in any space-limited location. It adopts the user-friendly "Front Access" design, making the installing, cable wiring, LED monitoring and maintenance of the WGR-500-4P placed in an enclosure very convenient for technicians. The WGR-500-4P can be installed by fixed wall mounting, magnetic wall mounting or DIN rail, thereby making its usability more flexible.

Applications

Secure Industrial Networking

PLANET WGR-500-4PV can work as an all-in-one router in an industrial application for a company the has a factory and many different divisions. Providing up to 4 PoE+, in-line power interfaces, the WGR-500-4PV can centrally manage power supplying to factory where PoE IP cameras and PoE sensors are built. It also provides data connectivity for office documentation. At the same time, the WGR-500-4PV can separate users and IoT devices with VLAN to have good performance. With firewall protection, it prevents IoT network from threats, thus making industrial network more secure.

Specifications

Product	WGR-500-4P
Hardware Specifications	
Interface — LAN	4 x 10/100/1000 BASE-T, auto-negotiation, auto MDI/MDI-X RJ45 port
Interface — WAN	1 x 10/100/1000 BASE-T, auto-negotiation, auto MDI/MDI-X RJ45 port
USB port	1 x USB 3.0 for back-up and restore of configuration file
Dip Switch	For router and switch mode
Reset Button	< 5 sec: System reboot > 5 sec: Factory default
ESD Protection	6KV DC
Enclosure	IP30 metal case
Installation	DIN-rail or wall mounting
Connector	Removable 3-pin terminal block for power input - Pin 1/2 for Power (Pin 1: V+ / Pin 2: V-) - Pin 3 for earth ground DC power jack with 2.1mm central pole

LED Indicator	System:
	  Internet (Green)
	  PWR (Green)
	  SYS (Green)
	Per 10/100/1000T RJ45 Ports:
	  10/100 LNK/ACT (Green)
	  1000 LNK/ACT (Orange)
	PoE Usage:
	  120W (Orange)
	  90W (Orange)
	  60W (Orange)
	  30W (Orange)

Dimensions (W x D x H)	180 x 140 x 24.4 mm
Weight	714 g
Power Requirements	Dual 48~56V DC (>51V DC for PoE+ output recommended)
Power Consumption	Max. 7.3 watts/24.9 BTU (Power on without any connection) Max. 132 watts/450 BTU (Full loading with PoE)
Router Features	
Internet Connection Type	Shares data and Internet access for users, supporting the following internet accesses: ■ PPPoE ■ Static IP ■ Dynamic IP
Routing Protocol	Static routing RIPv1/2
Security	DOS protection MAC/IP/Port/URL filtering
Protocol/Feature	802.1Q tag-based VLAN 802.1d spanning tree QoS NAT and HW NAT Port Forwarding DMZ UPnP and PLANET DDNS
System Management	Web-based (HTTP) configuration SNTP time synchronization System log supports remote log SNMP v1, v2c
Power Over Ethernet	
PoE Standard	IEEE 802.3at Power over Ethernet Plus/PSE
PoE Power Supply Type	End-span
PoE Power Output	IEEE 802.3af Standard - Per port 48V~51V DC (depending on the power supply), max. 15.4 watts IEEE 802.3at Standard - Per port 51V~56V DC (depending on the power supply), max. 36 watts
Power Pin Assignment	1/2(+), 3/6(-)
PoE Power Budget	120W maximum (depending on power input)
Max. Number of Class 4 PDs	4
Standards Conformance	
Regulatory Compliance	FCC Part 15 Class A, CE
Stability Testing	IEC60068-2-32 (free fall) IEC60068-2-27 (shock) IEC60068-2-6 (vibration)

Standards Compliance	IEEE 802.3 10BASE-T IEEE 802.3u 100BASE-TX/100BASE-FX IEEE 802.3ab Gigabit 1000T IEEE 802.3af Power over Ethernet IEEE 802.3at Power over Ethernet Plus IEEE 802.1D Spanning Tree Protocol IEEE 802.1p Class of Service IEEE 802.1Q VLAN tagging RFC 768 UDP RFC 793 TFTP RFC 791 IP RFC 792 ICMP RFC 2068 HTTP
Environment	
Operating Temperature	-10 ~ 60 degrees C
Storage Temperature	-20 ~ 70 degrees C
Humidity	5 ~ 95% (non-condensing)

Ordering Information

WGR-500-4P	Industrial Wall-mount Gigabit Router with 4-Port 802.3at PoE+

Related Products

WGR-500-4PV	Industrial Wall-mount Gigabit Router with 4-Port 802.3at PoE+ and LCD Touch Screen
ICA-3250	1080p IR Bullet PoE IP Camera
WDAP-C7200E	1200Mbps 802.11ac Dual Band Ceiling-mount Wireless Access Point
WNAP-C3220E	300Mbps 802.11n Ceiling-mount Wireless Access Point
WNAP-W2200UE	300Mbps 802.11n In-Wall Wireless Access Point w/ USB Charger (EU Type, 802.3af/at)
POE-162S	IEEE 802.3at Gigabit Power over Ethernet Plus Splitter
IPOE-162S	Industrial IEEE 802.3at Gigabit High Power over Ethernet Splitter
POE-E201	IEEE 802.3at Power over Gigabit Ethernet Extender
IPOE-E202	Industrial 1-Port 802.3at PoE+ to 2-Port 802.3af PoE Extender

WGR-500-4P