

## Product Specifications

Industrial 8-Port 10/100/1000T Wall-mount Managed Switch with 4-Port PoE+  
(-40~75 degrees C)

### WGS-804HPT

Version 1.0

This document contains confidential proprietary information and is property of PLANET. The contents of this document should not be disclosed to unauthorized persons without the written consent of PLANET.

#### Change History:

Revision:	Date:	Author:	Change List
Version 1.0	8/21/2015	Jos Li	Initial Release

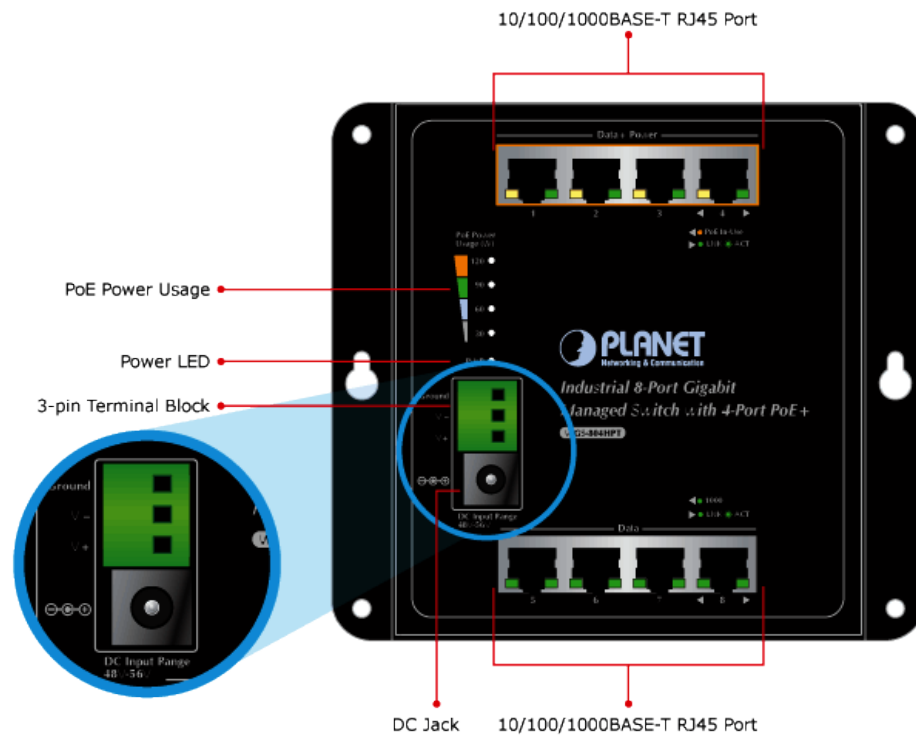
Author:	Jos Li	Editor:	Kent Kang
Reviewed by:	Kent Kang	Approved by:	Tom Shih

## 1. PRODUCT DESCRIPTION

### Easily-deployed and Expanded Network

Designed to be installed in a wall enclosure or simply mounted on a wall at any convenient location, PLANET WGS-804HPT, an innovative, **Industrial 8-port 10/100/1000T Wall-mounted Managed Switch with 4-Port PoE+**, offers IPv6/IPv4 dual stack management, **intelligent Layer 2 management functions**, and **user-friendly interface**. The WGS-804HPT is able to operate reliably, stably and quietly in any environment without affecting its performance. With a total power budget of up to **144 watts** for different kinds of PoE applications and featuring ultra networking speed and operating temperature ranging from **-40 to 75 degrees C** in a compact but rugged IP30 metal housing, the WGS-804HPT is an ideal solution to meeting the demand for the following network applications:

- Building/Home automation network
- Internet of things (IoT)
- IP surveillance
- Wireless LAN



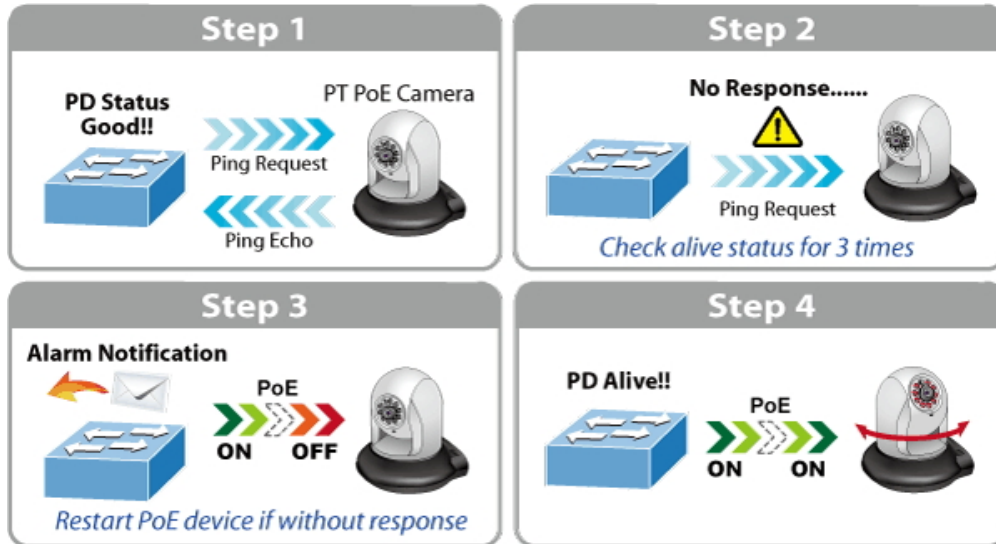
### Built-in Unique PoE Functions for Powered Devices Management

As it is the managed PoE switch for surveillance, wireless and VoIP networks, the WGS-804HPT features the following special PoE management functions:

- PD alive check
- Scheduled power recycling
- PoE schedule
- PoE usage monitoring

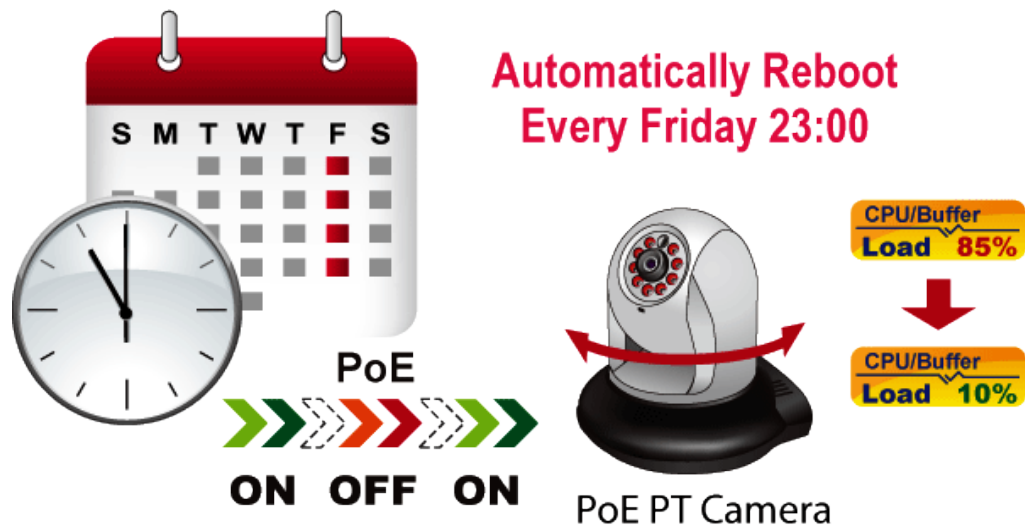
### Intelligent Powered Device Alive Check

The WGS-804HPT can be configured to monitor connected PD (Powered Device) status in real time via ping action. Once the PD stops working and responding, the WGS-804HPT 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.



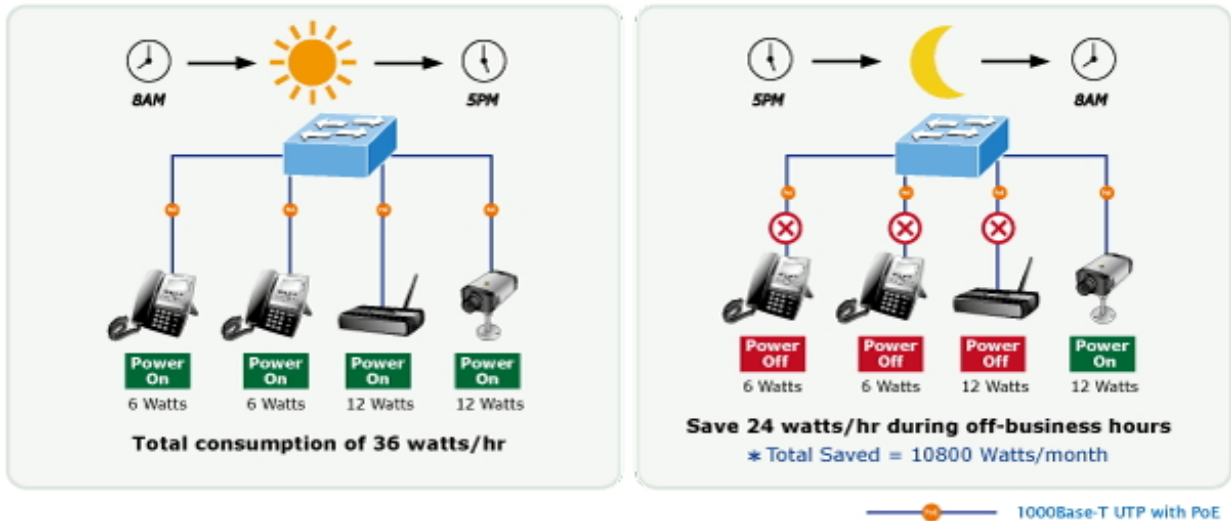
### Scheduled Power Recycling

The WGS-804HPT 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.



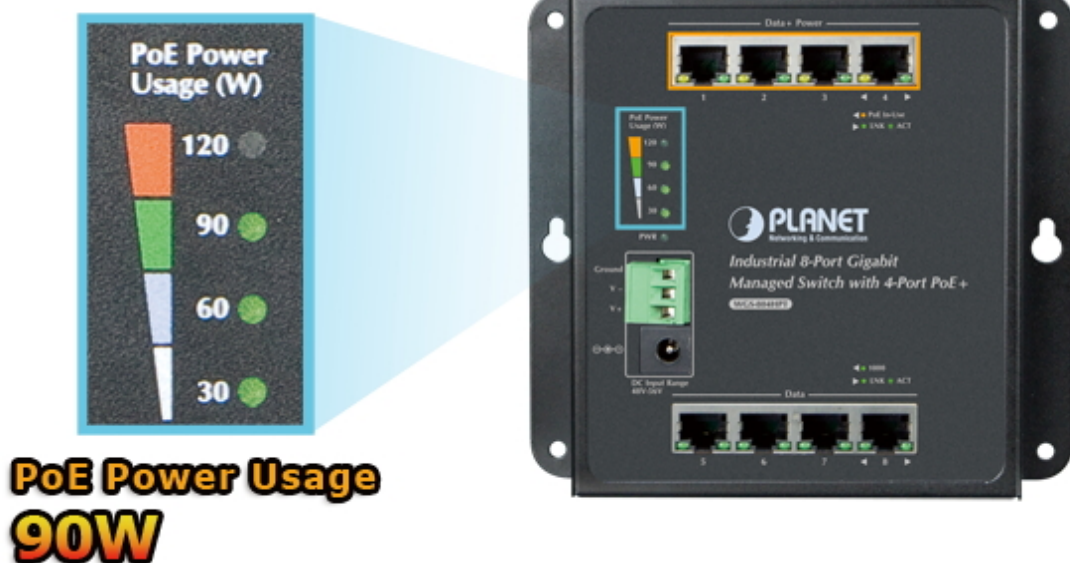
### PoE Schedule for Energy Saving

Under the trend of energy saving worldwide and contributing to environmental protection, the WGS-804HPT 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.



### PoE Usage Monitoring and Intelligent LED Indicator for Real-time PoE Usage

Via the power usage chart in the web management interface, the WGS-804HPT enables the administrator to monitor the status of the power usage of the connected PDs in real time. Thus, it greatly enhances the management efficiency of the facilities. Moreover, the WGS-804HPT helps users to monitor the current status of PoE power usage easily and efficiently via its advanced LED indication. Called “**PoE Power Usage**”, the front panel of the WGS-804HP has four LED indicators of different power usages.



## Innovative Wall-mount Installation

The WGS-804HPT 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 WGS-804HPT placed in an enclosure very convenient for technicians. The WGS-804HPT can be installed by **fixed wall mounting**, **magnetic wall mounting** or **DIN rail**, thereby making its usability more flexible.



## Environmentally Hardened Design

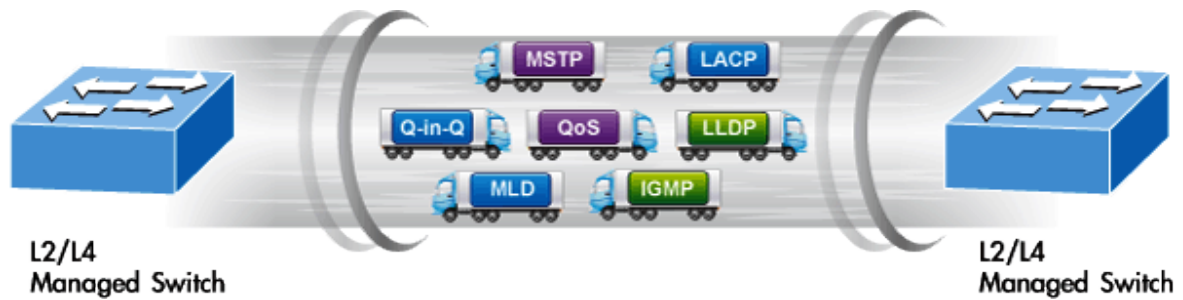
With IP30, flat but rugged metal housing protection, the WGS-804HPT provides a high level of immunity against electromagnetic interference and heavy electrical surges which are usually found on plant floors or in curb-side traffic control cabinets without air conditioner. Being able to operate under the temperature range from -40 to 75 degrees C, the WGS-804HPT can be placed in almost any difficult environment.

## IPv6/IPv4 Dual Stack Management

Supporting both IPv6 and IPv4 protocols, the WGS-804HPT helps the SMBs to step in the IPv6 era with the lowest investment as its network facilities need not be replaced or overhauled if the IPv6 FTTx edge network is set up.

## Robust Layer 2 Features

The WGS-804HPT can be programmed for advanced switch management functions such as dynamic port link aggregation, 802.1Q VLAN, **Q-in-Q VLAN**, **Multiple Spanning Tree Protocol (MSTP)**, Loop and **BPDU Guard**, **IGMP Snooping**, and **MLD Snooping**. Via the link aggregation, the WGS-804HPT allows the operation of a high-speed trunk to combine with multiple ports such as a 16Gbps fat pipe, and supports fail-over as well. Also, the **Link Layer Discovery Protocol (LLDP)** is the Layer 2 protocol included to help discover basic information about neighboring devices on the local broadcast domain.



### Efficient Traffic Control

The WGS-804HPT is loaded with robust QoS features and powerful traffic management to enhance services to business-class data, voice, and video solutions. The functionality includes broadcast/multicast/unicast **storm control**, per port **bandwidth control**, 802.1p/CoS/IP DSCP QoS priority and remarking. It guarantees the best performance in VoIP and video stream transmission, and empowers the enterprises to take full advantage of the limited network resources.

### Friendly and Secure Management

For efficient management, the WGS-804HPT is equipped with **web**, **Telnet** and **SNMP** management interfaces. With the built-in web-based management interface, the WGS-804HPT 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. For text-based management, the switch can be accessed via Telnet. Moreover, the WGS-804HPT offers secure remote management by supporting **SSH**, **SSL** and **SNMP v3** connections which encrypt the packet content at each session.

### Advanced Network Security

PLANET WGS-804HPT offers a comprehensive **IPv4/IPv6** Layer 2 to Layer 4 **Access Control List (ACL)** for enforcing security to the edge. Its protection mechanism also comprises **802.1X port-based** user and device authentication, which can be deployed with RADIUS to ensure the port level security and block illegal users. With the **protected port** function, communication between edge ports can be prevented to guarantee user privacy. Furthermore, the WGS-804HPT also provides **DHCP snooping**, **IP source guard** and **dynamic ARP inspection** functions to prevent IP snooping from attack and discarded ARP packets with invalid MAC address. The network administrators can now construct highly-secure corporate networks with considerably less time and effort than before.

### Ready to Go with IoT Generation

Internet is very popular the world over as users surf online daily with their mobile devices, such as smart phones, tablets, or laptop computers. However, users expect more from the convenience of Internet, like how to use their mobile devices to control something via the Internet, thus making life more convenient. The WGS-804HPT is based on such concept to help users implement the Internet of things (IoT) on the SOHO/Home network. Home automation is no longer a dream as Gigabit network can easily cloud IoT equipment, making it a smart home.

## 2. PRODUCT FEATURES

### ▶ **Physical Port**

- **8-Port 10/100/1000BASE-T** Gigabit RJ45 copper with 4-Port **IEEE 802.3at/af** PoE Injector (Port-1 to Port-4)

### ▶ **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 classification detection
  - PD alive check
  - PoE schedule

### ▶ **Industrial Case/Installation**

- Compact size, wall-mounted, magnetic wall mount and DIN-rail design
- IP30 metal case protection
- Supports -40 to 75 degrees C operating temperature
- Supports ESD 8KV DC Ethernet protection
- Redundant power design
  - 48V~56V DC wide power input

### ▶ **Switching**

- Hardware based 10/100Mbps, half/full duplex and 1000Mbps full duplex mode, flow control and 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
- 10K jumbo frame
- Automatic address learning and address aging
- Supports CSMA/CD protocol

▶ **Layer 2 Features**

■ Supports **VLAN**

- IEEE 802.1Q tagged VLAN
- Provider bridging (VLAN Q-in-Q, IEEE 802.1ad) support
- Protocol VLAN
- Voice VLAN
- Private VLAN (Protected port)
- Management VLAN
- GVRP

■ Supports **Spanning Tree Protocol**

- STP (Spanning Tree Protocol)
- RSTP (Rapid Spanning Tree Protocol)
- MSTP (Multiple Spanning Tree Protocol)
- STP BPDU Guard, BPDU Filtering and BPDU Forwarding

■ Supports **Link Aggregation**

- IEEE 802.3ad Link Aggregation Control Protocol (LACP)
- Cisco ether-channel (static trunk)
- Maximum 4 trunk groups, up to 4 ports per trunk group

■ Provides port mirror (many-to-1)

■ Loop protection to avoid broadcast loops

▶ **Quality of Service**

- Ingress/Egress Rate Limit per port bandwidth control
- Traffic classification
  - IEEE 802.1p CoS
  - TOS/DSCP/IP precedence of IPv4/IPv6 packets
- Strict priority and Weighted Round Robin (WRR) CoS policies

▶ **Multicast**

- Supports IPv4 IGMP snooping v2, v3
- Supports IPv6 MLD snooping v1, v2
- IGMP querier mode support
- IGMP snooping port filtering
- MLD snooping port filtering

▶ **Security**

- Storm Control support
  - Broadcast/Unknown unicast/Unknown multicast
- Authentication
  - IEEE 802.1X port-based network access authentication
  - Built-in RADIUS client to co-operate with the RADIUS servers
  - DHCP Option 82



- RADIUS/TACACS+ authentication

■ Access Control List

- IPv4/IPv6 IP-based ACL
- IPv4/IPv6 IP-based ACE
- MAC-based ACL
- MAC-based ACE

■ MAC Security

- Static MAC
- MAC filtering

■ Port security for source MAC address entries filtering

■ DHCP snooping to filter distrusted DHCP messages

■ Dynamic ARP inspection discards ARP packets with invalid MAC address to IP address binding

■ IP source guard prevents IP spoofing attacks

■ DoS attack prevention

■ SSH/SSL

▶ **Management**

■ IPv4 and IPv6 dual stack management

■ Switch Management Interface

- IPv4/IPv6 Web switch management
- Telnet Command Line Interface
- SNMP v1, v2c, v3
- SSH and SSL secure access

■ User privilege levels control

■ Built-in Trivial File Transfer Protocol (TFTP) client

■ Static and DHCP for IP address assignment

■ System Maintenance

- Firmware upload/download via HTTP/TFTP
- Configuration upload/download through HTTP/TFTP
- Hardware reset button for system reboot or reset to factory default

■ SNTP Network Time Protocol

■ Cable diagnostics

■ Link Layer Discovery Protocol (LLDP) Protocol and LLDP-MED

■ SNMP trap for interface Link-up and Link-down notification

■ Event message logging to remote Syslog server

■ Four RMON groups (history, statistics, alarms and events)

■ PLANET Smart Discovery Utility

### 3. PRODUCT SPECIFICATIONS

#### 3.1 MAIN COMPONENTS

Switch ASIC	Realtek RTL8380MI	x 1
Flash	16M bytes	x 1
DDR RAM	128M bytes	x 1
PoE Chip	PowerDesign PD69104B	x 1

#### 3.2 FUNCTION SPECIFICATIONS

Product	<b>WGS-804HPT</b>
<b>Hardware Specifications</b>	
Copper Ports	8-Port 10/100/1000BASE-T RJ45 auto-MDI/MDI-X ports
PoE Inject Port	4-Port with 802.3af/802.3at PoE injector function (Port-1 to Port-4)
Switch Architecture	Store-and-Forward
Switch Fabric	16Gbps/non-blocking
Switch Throughput@64 bytes	11.9Mpps @64 bytes
MAC Address Table	8K entries
Shared Data Buffer	4.1 megabits
Flow Control	IEEE 802.3x pause frame for full-duplex Back pressure for half-duplex
Jumbo Frame	10KB
Reset Button	< 5 sec: System reboot > 5 sec: Factory default
LED	<b>Power LED:</b> Power (Green) <b>PoE Power Usage LED:</b> 30W, 60W, 90W, 120W (Green) <b>PoE Port(Port-1 to Port-4):</b> PoE-in-Use (Orange) LNK/ACT (Green) <b>10/100/1000BASE-TX Port (Port-5 to Port-8):</b> 1000 (Green) LNK/ACT (Green)
Connector	<ul style="list-style-type: none"> <li>■ Removable 3-pin terminal block for power input                             <ul style="list-style-type: none"> <li>- Pin 1/2 for Power (Pin 1: V+ / Pin 2: V-)</li> <li>- Pin 3 for earth ground</li> </ul> </li> <li>■ DC power jack with 2.0mm central pole</li> </ul>
Power Requirements	48~56V DC, 3A (max.)
Power Consumption/ Dissipation	Max. 152 watts/519 BTU
Dimensions (W x D x H)	148 x 25 x 134 mm

<b>Weight</b>	625g
<b>ESD Protection</b>	Contact Discharge 4KV DC Air Discharge 8KV DC
<b>Enclosure</b>	Metal
<b>Installation</b>	Wall mount, magnetic wall mount and DIN-rail kit
<b>Power over Ethernet</b>	
<b>PoE Standard</b>	IEEE 802.3af / 802.3at Power over Ethernet PSE
<b>PoE Power Supply Type</b>	End-span
<b>PoE Power Output</b>	IEEE 802.3af Standard - Per port 48V~56V DC (depending on the power supply), max. 15.4 watts  IEEE 802.3at Standard - Per port 50V~56V DC (depending on the power supply), max. 36 watts
<b>Power Pin Assignment</b>	1/2(+), 3/6(-)
<b>PoE Power Budget</b>	144 watts (depending on power input)
<b>Max. Number of Class 2 PDs</b>	4
<b>Max. Number of Class 3 PDs</b>	4
<b>Max. Number of Class 4 PDs</b>	4
<b>Layer 2 Functions</b>	
<b>Port Mirroring</b>	TX/RX/Both Many-to-1 monitor
<b>VLAN</b>	802.1Q tagged-based VLAN Up to 256 VLAN groups, out of 4094 VLAN IDs 802.1ad Q-in-Q tunneling (VLAN stacking) Voice VLAN Protocol VLAN Private VLAN (Protected port) GVRP Management VLAN
<b>Link Aggregation</b>	IEEE 802.3ad LACP and static trunk Supports 4 groups with 4 ports per trunk
<b>Spanning Tree Protocol</b>	STP, IEEE 802.1D Spanning Tree Protocol RSTP, IEEE 802.1w Rapid Spanning Tree Protocol MSTP, IEEE 802.1s Multiple Spanning Tree Protocol STP BPDU Guard, BPDU Filtering and BPDU Forwarding
<b>IGMP Snooping</b>	IPv4 IGMP (v2/v3) snooping IGMP querier Up to 256 multicast groups
<b>MLD Snooping</b>	IPv6 MLD (v1/v2) snooping, up to 256 multicast groups
<b>Access Control List</b>	IPv4/IPv6 IP-based ACL/MAC-based ACL IPv4/IPv6 IP-based ACE/MAC-based ACE
<b>QoS</b>	8 mapping ID to 8 level priority queues

	<ul style="list-style-type: none"> <li>- Port Number</li> <li>- 802.1p priority</li> <li>- DSCP/IP precedence of IPv4/IPv6 packets</li> </ul> <p>Traffic classification based, strict priority and WRR</p> <p>Ingress/Egress Rate Limit per port bandwidth control</p>
<b>Security</b>	<p>IEEE 802.1X port-based authentication</p> <p>Built-in RADIUS client to co-operate with RADIUS server</p> <p>RADIUS/TACACS+ authentication</p> <p>IP-MAC port binding</p> <p>MAC filtering</p> <p>Static MAC address</p> <p>DHCP snooping and DHCP Option82</p> <p>STP BPDU guard, BPDU filtering and BPDU forwarding</p> <p>DoS attack prevention</p> <p>ARP inspection</p> <p>IP source guard</p> <p>Storm control support</p> <p>Broadcast/Unknown unicast/Unknown multicast</p>
<b>Management Functions</b>	
<b>Basic Management Interfaces</b>	<p>Web browser/Telnet/SNMP v1, v2c, v3</p> <p>Firmware upgrade by HTTP/TFTP protocol through Ethernet network</p> <p>Configuration upload/download through HTTP/TFTP</p> <p>Remote/Local Syslog</p> <p>System log</p> <p>LLDP protocol</p> <p>SNTP</p> <p>PLANET Smart Discovery Utility</p>
<b>Secure Management Interfaces</b>	<p>SSH, SSL, SNMP v3</p>
<b>SNMP MIBs</b>	<p>RFC 1213 MIB-II</p> <p>RFC 1215 Generic Traps</p> <p>RFC 1493 Bridge MIB</p> <p>RFC 2674 Bridge MIB Extensions</p> <p>RFC 2737 Entity MIB (version 2)</p> <p>RFC 2819 RMON (1, 2, 3, 9)</p> <p>RFC 2863 Interface Group MIB</p> <p>RFC 3635 Ethernet-like MIB</p>
<b>Standards Conformance</b>	
<b>Regulatory Compliance</b>	<p>FCC Part 15 Class A, CE</p>
<b>Stability Testing</b>	<p>IEC 60068-2-32 (free fall)</p> <p>IEC 60068-2-27 (shock)</p> <p>IEC 60068-2-6 (vibration)</p>
<b>Standards Compliance</b>	<p>IEEE 802.3 10BASE-T</p> <p>IEEE 802.3u 100BASE-TX/100BASE-FX</p>

	<p>IEEE 802.3z Gigabit SX/LX</p> <p>IEEE 802.3ab Gigabit 1000BASE-T</p> <p>IEEE 802.3x Flow Control and Back Pressure</p> <p>IEEE 802.3ad Port Trunk with LACP</p> <p>IEEE 802.1D Spanning Tree Protocol</p> <p>IEEE 802.1w Rapid Spanning Tree Protocol</p> <p>IEEE 802.1s Multiple Spanning Tree Protocol</p> <p>IEEE 802.1p Class of Service</p> <p>IEEE 802.1Q VLAN Tagging</p> <p>IEEE 802.1x Port Authentication Network Control</p> <p>IEEE 802.1ab LLDP</p> <p>RFC 768 UDP</p> <p>RFC 793 TFTP</p> <p>RFC 791 IP</p> <p>RFC 792 ICMP</p> <p>RFC 2068 HTTP</p> <p>RFC 1112 IGMP v1</p> <p>RFC 2236 IGMP v2</p> <p>RFC 3376 IGMP v3</p> <p>RFC 2710 MLD v1</p> <p>RFC 3810 MLD v2</p>
<b>Environment</b>	
<b>Operating</b>	<p>Temperature: -40 ~ 75 degrees C</p> <p>Relative Humidity: 5 ~ 95% (non-condensing)</p>
<b>Storage</b>	<p>Temperature: -40 ~ 85 degrees C</p> <p>Relative Humidity: 5 ~ 95% (non-condensing)</p>
<b>Accessories</b>	
<b>Standard Accessories</b>	<ul style="list-style-type: none"> <li>■ Quick Installation Guide x 1</li> <li>■ 3-pin Terminal Block Connector x 1</li> <li>■ Wall-mounted Kit x 1</li> <li>■ DIN-rail Kit x 1</li> <li>■ Magnet Kit x 1</li> <li>■ RJ45 Dust Cap x 8</li> </ul>

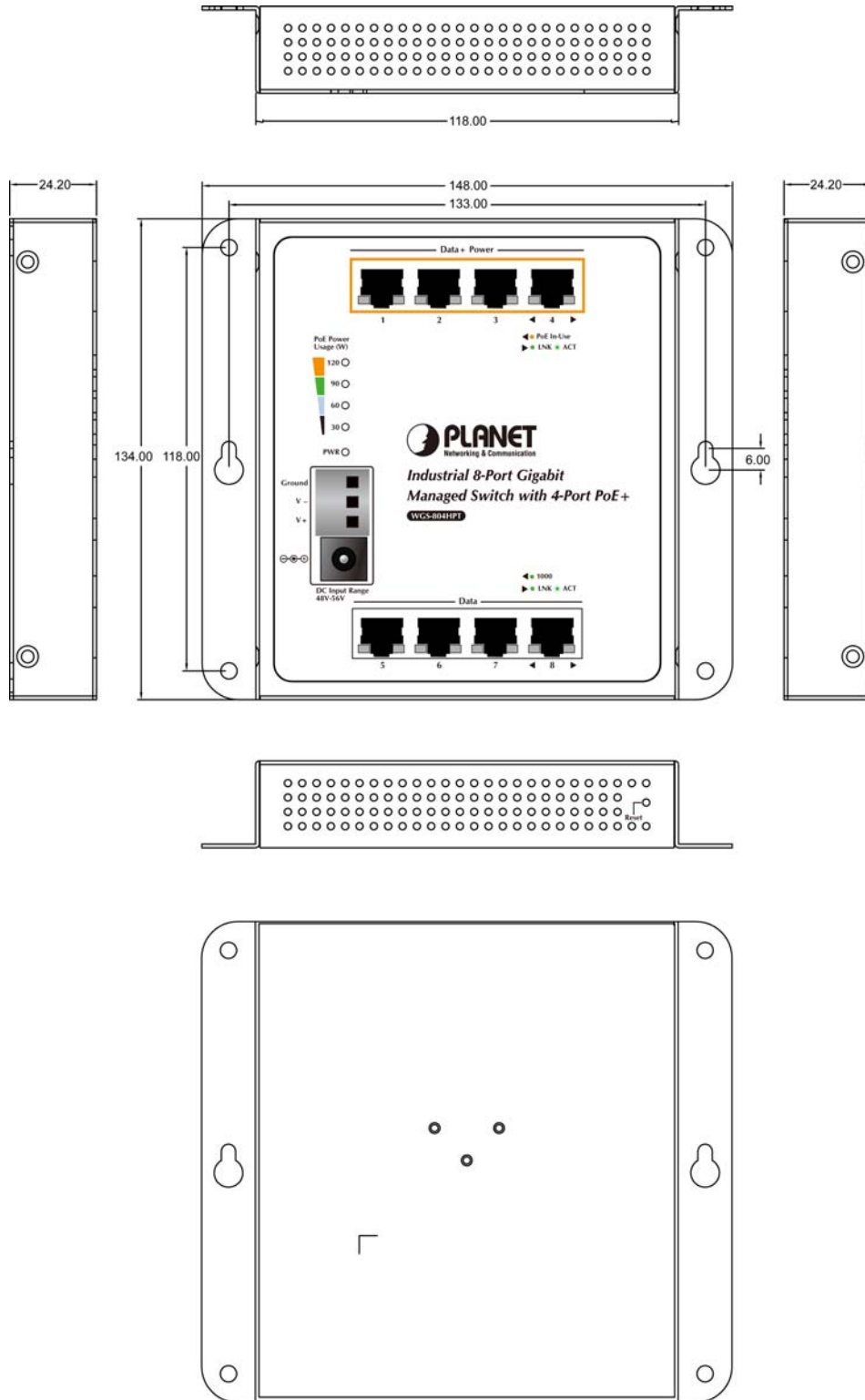
### 3.3 PHYSICAL SPECIFICATIONS:

**Dimensions:**

148 x 25 x 134mm (W x D x H)

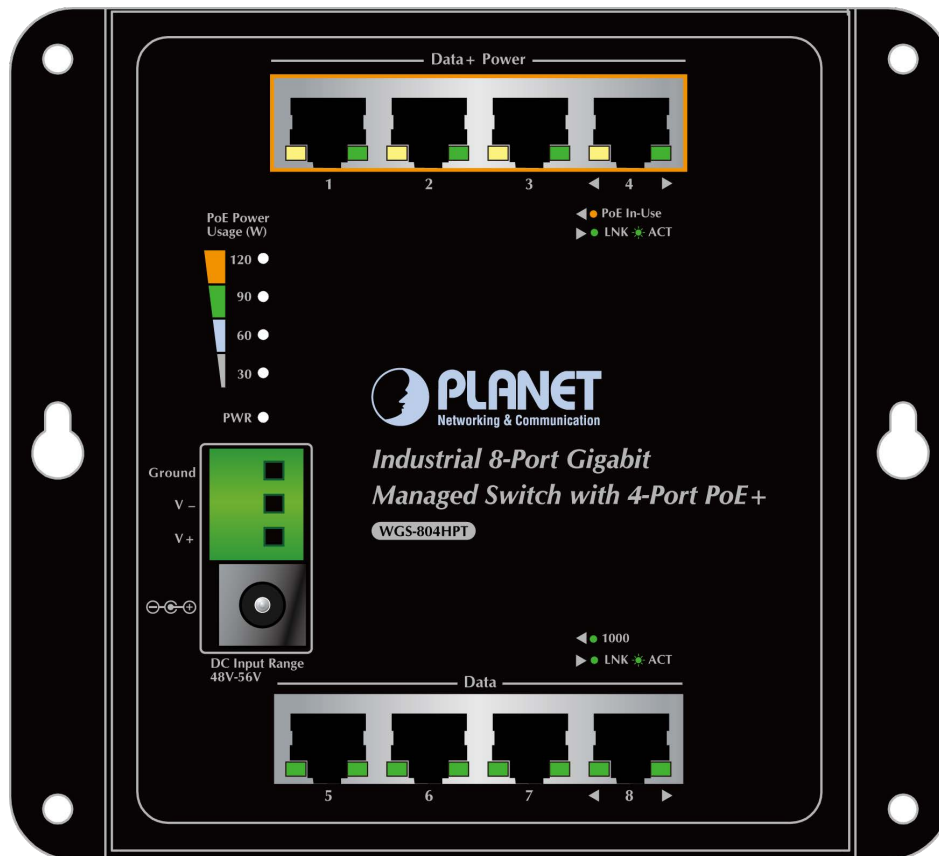
**Weight:**

625g



**Dimensions ( unit = mm )**

■ Front Panel:



■ LED Definition

■ System

LED	Color	Function
PWR	Green	Lights to indicate that the Switch has power.

■ PoE 10/100/1000Base-T interfaces(Port-1 to Port-4)

LED	Color	Function
LNK/ACT	Green	<b>Lights:</b> To indicate the link through that port is successfully established. <b>Blinks:</b> To indicate that the switch is actively sending or receiving data over that port.
PoE	Orange	<b>Lights:</b> To indicate the port is providing DC in-line power. <b>Off:</b> To indicate the connected device is not a PoE Powered Device (PD)

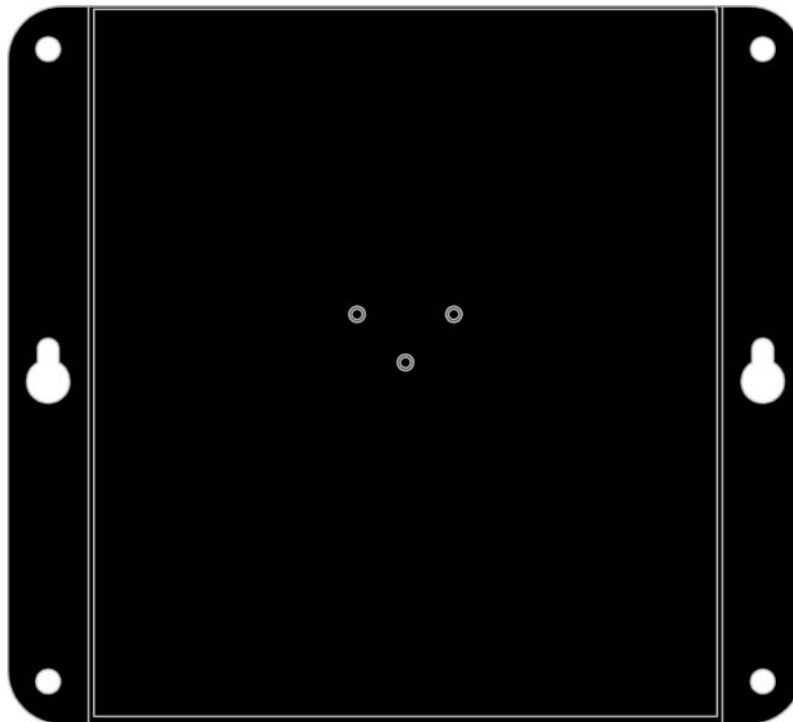
■ 10/100/1000Base-T interfaces(Port-5 to Port-8)

LED	Color	Function
LNK/ACT	Green	<b>Lights:</b> To indicate the link through that port is successfully established. <b>Blinks:</b> To indicate that the switch is actively sending or receiving data over that port.
1000	Green	<b>Lights:</b> To indicate that the port is operating at <b>1000Mbps</b> . <b>Off:</b> If LNK/ACT LED is Off, it indicates that the port is link-down or operating at <b>10/100Mbps</b>

■ PoE Power Usage (Unit: Watt)

LED	Color	Function
30	Green	Lights: To indicate the system consumes over 30-watt PoE power budget
60	Green	Lights: To indicate the system consumes over 60-watt PoE power budget
90	Green	Lights: To indicate the system consumes over 90-watt PoE power budget
120	Green	Lights: To indicate the system consumes over 120-watt PoE power budget

■ Rear Panel:



**3.4 ENVIRONMENTAL SPECIFICATIONS**

**Operating:**

**Temperature:** -40°C ~ 75 degrees C  
**Relative Humidity:** 5% ~ 95% (non-condensing)

**Storage:**

**Temperature:** -40°C ~ 85 degrees C  
**Relative Humidity:** 5% ~ 95% (non-condensing)



### 3.5 ELECTRICAL SPECIFICATIONS

Model		WGS-804HPT
DC Power Input Voltage Range:		DC 48~56V, 3A max.
Power Consumption	System on	3 watts/10 BTU
	Ethernet Full Load Steady	7 watts/24 BTU
	PoE Full Load	152 watts/519 BTU

### 3.6 REGULATORY COMPLIANCE

FCC Class A, CE.

### 3.7 RELIABILITY

MTBF > 100,000 hrs @ 25 degrees C

### 3.8 BASIC PACKAGING

- The Wall-mounted PoE Managed Switch x 1
- Quick Installation Guide x 1
- 3-pin Terminal Block Connector x 1
- Wall-mounted Kit x 1
- DIN-rail Kit x 1
- Magnet Kit x 1
- RJ45 Dust-proof Cap x 8

### 3.9 PACKING DIMENSIONS

**Dimensions:** 148 (W) x 25 (D) x 134(H) mm

**Weight:** TBD KG (gross weight)

20pcs in one carton