Industrial L2+ 8-Port 10/100/1000T 802.3at PoE + 2-Port 100/1000X SFP Wall-mount Managed Switch

Wall-mount PoE Managed Switch with Advanced L2+/L4 Switching and Security

PLANET WGS-5225-8P2S is an Industrial Wall-mount PoE Managed Switch featuring PLANET **intelligent PoE** functions to improve the availability of industrial applications. It provides IPv6/IPv4 dual stack management and built-in L2+/L4 Gigabit switching engine along with **eight 10/100/1000BASE-T** ports featuring **36-watt PoE and two additional 1000BASE-X SFP ports**. With a total power budget of up to 240 watts for different kinds of PoE applications, and featuring networking speed and operating temperature ranging from **-40** to **75 degrees C** in a compact but rugged IP30 metal housing, the **WGS-5225-8P2S** is an ideal solution to meet the demand for the following network applications:

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

Redundant Ring, Fast Recovery for Critical Network Applications

The WGS-5225-8P2S supports redundant ring technology and features strong, rapid self-recovery capability to prevent interruptions and external intrusions. It incorporates advanced **ITU-T G.8032 ERPS (Ethernet Ring Protection Switching)** technology, Spanning Tree Protocol (802.1s MSTP), and **dual power** input system into customer's industrial automation network to enhance system reliability and uptime in harsh factory environments. In a certain simple ring network, the recovery time of data link can be as fast as 10ms.

Physical Port

- **8 10/100/1000BASE-T** Gigabit Ethernet RJ45 ports with **IEEE 802.3at PoE+** Injector
- **2 100/1000BASE-X mini-GBIC/SFP slots for SFP** type auto detection

Power over Ethernet

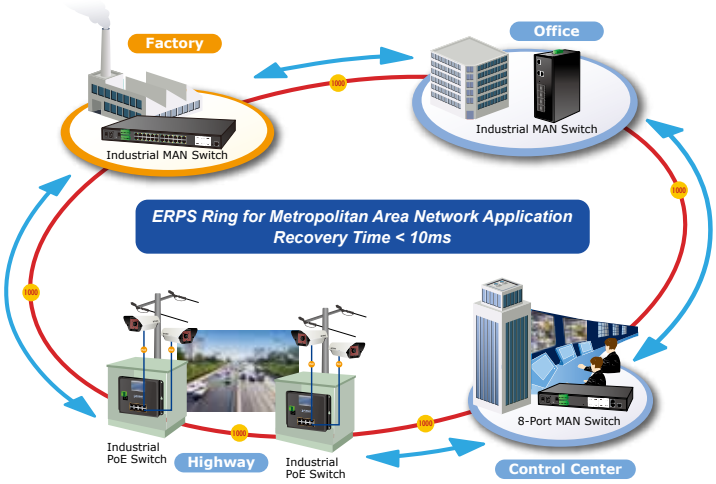
- Complies with IEEE 802.3at Power over Ethernet Plus/end-span PSE
- Up to 8 IEEE 802.3af/802.3at devices powered
- Supports PoE power up to 36 watts for each PoE port
- Auto detects powered device (PD)
- Circuit protection prevents power interference between ports
- Remote power feeding up to 100m in standard mode and 200m in extend mode
- PoE management features
  - Total PoE power budget control
  - Per port PoE function enable/disable
  - PoE admin-mode control
  - PoE port power feeding priority
  - Per PoE port power limit
  - PD classification detection
- Intelligent PoE features
  - Temperature threshold control
  - PoE usage threshold control
  - PD alive check
  - PoE schedule

Industrial Case and Installation

- Compact size with fixed wall-mounted, magnetic wall-mounted or DIN-rail design
- IP30 metal case
- Supports -40 to 75 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

- Prevents packet loss with back pressure (half-duplex) and IEEE 802.3x pause frame flow control (full-duplex)
- High performance of Store-and-Forward architecture, and runt/CRC filtering eliminates erroneous packets to optimize the network bandwidth



Convenient and Smart ONVIF Devices with Detection Feature

PLANET has newly developed an awesome feature -- ONVIF Support -- which is specifically designed for co-operating with video IP surveillances. From the WGS-5225-8P2S's GUI, you just need one click to search and show all of the ONVIF devices via network application. In addition, you can upload floor images to the switch and can remotely monitor or inspect an assembly line. Moreover, you can get real-time surveillance information and online/offline status; the PoE reboot can be controlled from the GUI.

Built-in Unique PoE Functions for Powered Devices Management

As it is the managed PoE switch for surveillance, wireless and VoIP networks, the WGS-5225-8P2S features the following special PoE management functions:

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

- Storm Control support
  - Broadcast/Multicast/Unicast
- Supports **VLAN**
  - IEEE 802.1Q tagged VLAN
  - Up to 255 VLANs groups, out of 4094 VLAN IDs
  - Provider Bridging (VLAN Q-in-Q) support (IEEE 802.1ad)
  - Private VLAN Edge (PVE)
  - Protocol-based VLAN
  - MAC-based VLAN
  - Voice VLAN
- Supports **Spanning Tree Protocol**
  - IEEE 802.1D Spanning Tree Protocol (STP)
  - IEEE 802.1w Rapid Spanning Tree Protocol (RSTP)
  - IEEE 802.1s Multiple Spanning Tree Protocol (MSTP), spanning tree by VLAN
  - BPDU Guard
- Supports **Link Aggregation**
  - 802.3ad Link Aggregation Control Protocol (LACP)
  - Cisco ether-channel (static trunk)
  - Maximum 2 trunk groups with 2 ports per trunk group
  - Up to 2Gbps bandwidth (duplex mode)
- Provides port mirror (1-to-1)
- Port mirroring to monitor the incoming or outgoing traffic on a particular port
- Loop protection to avoid broadcast loops
- Supports ERPS (Ethernet Ring Protection Switching)

Layer 3 IP Routing Features

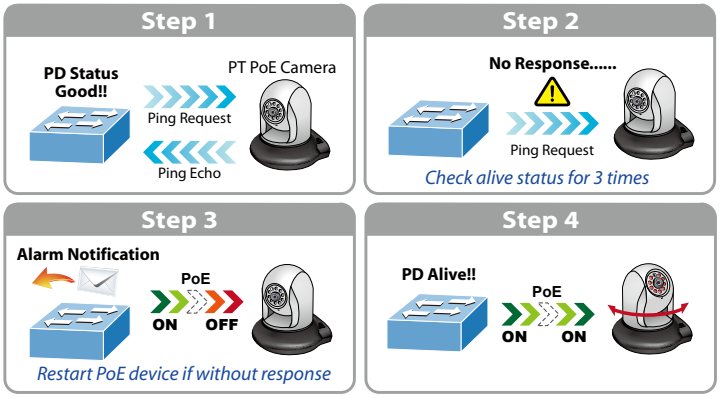
- Supports maximum 32 static routes and route summarization

Quality of Service

- Ingress Shaper and Egress Rate Limit per port bandwidth control
- 8 priority queues on all switch ports
- Traffic classification
  - IEEE 802.1p CoS
  - IP TOS/DSCP/IP precedence
  - IP TCP/UDP port number
  - Typical network application
- Strict priority and Weighted Round Robin (WRR) CoS policies
- Supports QoS and In/Out bandwidth control on each port
- Traffic-policing on the switch port
- DSCP remarking

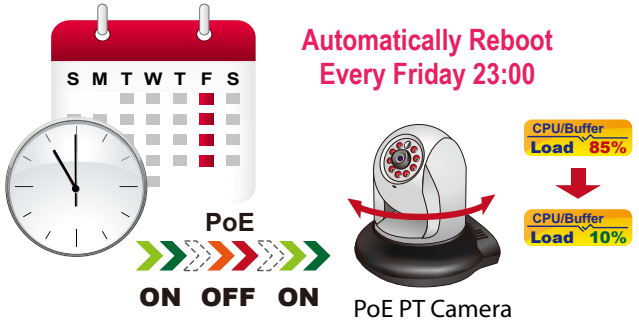
Intelligent Powered Device Alive Check

The WGS-5225-8P2S can be configured to monitor connected PD status in real time via ping action. Once the PD stops working and responding, the WGS-5225-8P2S 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.



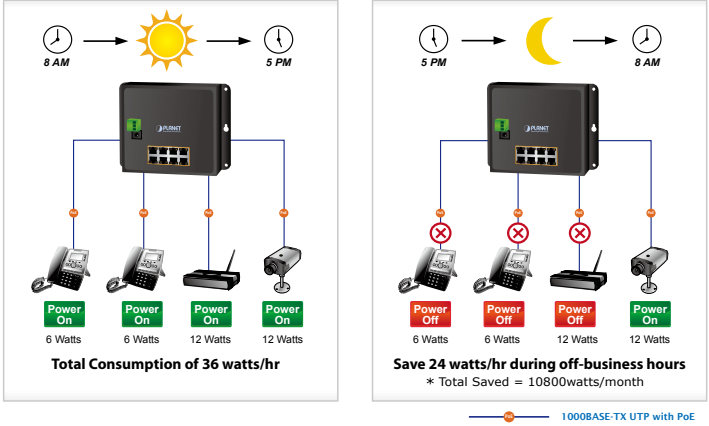
Scheduled Power Recycling

The WGS-5225-8P2S 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-5225-8P2S 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.



Multicast

- Supports IGMP snooping v1, v2 and v3
- Supports MLD snooping v1 and v2
- Querier mode support
- IGMP snooping port filtering
- MLD snooping port filtering
- MVR (Multicast VLAN Registration)

Security

- IEEE 802.1x Port-based/MAC-based network access authentication
- Built-in RADIUS client to cooperate with the RADIUS servers
- TACACS+ login users access authentication
- RADIUS/TACACS+ users access authentication
- IP-based Access Control List (ACL)
- MAC-based Access Control List
- Source MAC/IP address binding
- 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
- IP address access management to prevent unauthorized intruder

Management

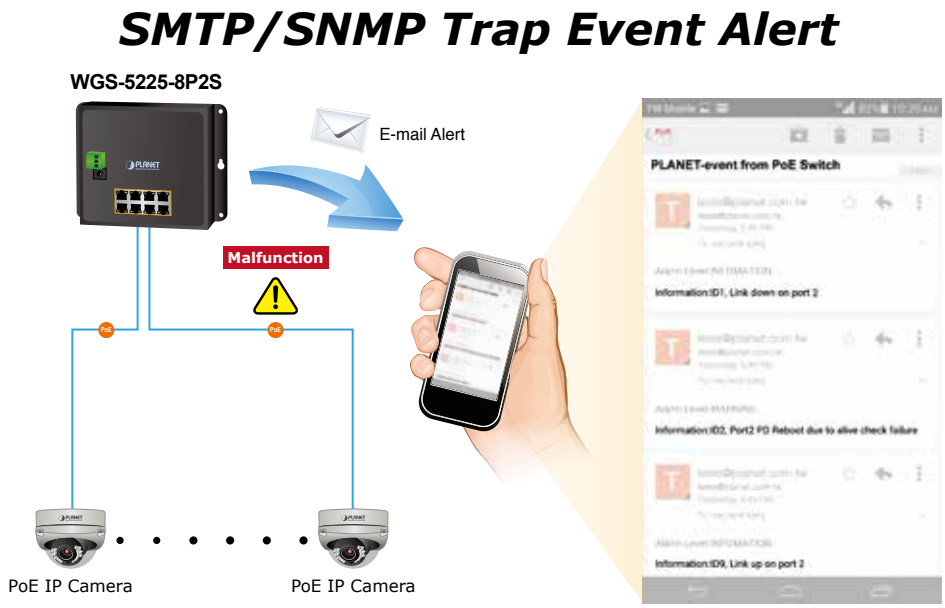
- Switch Management Interfaces
  - Telnet Command Line Interface
  - Web switch management
  - SNMP v1 and v2c switch management
  - SSH/SSL and SNMP v3 secure access
- Four RMON groups (history, statistics, alarms, and events)
- IPv6 IP address/NTP/DNS management
- Built-in Trivial File Transfer Protocol (TFTP) client
- BOOTP and DHCP for IP address assignment
- Firmware upload/download via HTTP/TFTP
- DHCP Relay and DHCP Option 82
- User Privilege levels control
- Network Time Protocol (NTP)
- Link Layer Discovery Protocol (LLDP)
- SFP-**DDM** (Digital Diagnostic Monitor)
- Cable diagnostic technology provides the mechanism to detect and report potential cabling issues
- Reset button for system reboot or reset to factory default
- PLANET Smart Discovery Utility for deployment management

Innovative Wall-mount Installation

The WGS-5225-8P2S 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-5225-8P2S placed in an enclosure very convenient for technicians. The WGS-5225-8P2S can be installed by **fixed wall mounting, magnetic wall mounting** or **DIN rail**, thereby making its usability more flexible.

SMTP/SNMP Trap Event Alert

The WGS-5225-8P2S provides event alert function to help to diagnose the abnormal device owing to whether or not there is a break of the network connection, or the rebooting response.

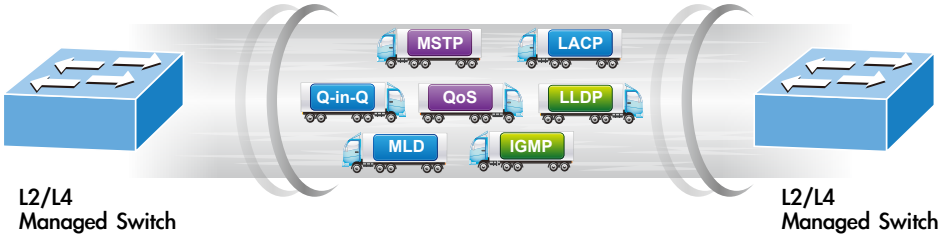


Layer 3 IPv4 and IPv6 Software VLAN Routing for Secure and Flexible Management

To help customers stay on top of their businesses, the WGS-5225-8P2S not only provides ultra high transmission performance and excellent Layer 2 technologies, but also IPv4/IPv6 software VLAN routing feature which allows to crossover different VLANs and different IP addresses for the purpose of having a highly-secure, flexible management and simpler networking application.

Robust Layer 2 Features

The WGS-5225-8P2S can be programmed for advanced switch management functions such as dynamic port link aggregation, Q-in-Q VLAN, private VLAN, Rapid Spanning Tree Protocol, Layer 2 to Layer 4 QoS, bandwidth control and IGMP snooping. The WGS-5225-8P2S provides 802.1Q tagged VLAN, and the VLAN groups allowed will be maximally up to 255. Via aggregation of supporting ports, the WGS-5225-8P2S allows the operation of a high-speed trunk combining multiple ports. It enables a maximum of up to 2 trunk groups with 2 ports per trunk group, and supports fail-over as well.



Efficient Management

For efficient management, the WGS-5225-8P2S is equipped with console, Web and SNMP management interfaces. With the built-in Web-based management interface, the WGS-5225-8P2S offers an easy-to-use, platform-independent management and configuration facility. For text-based management, the WGS-5225-8P2S can be accessed via Telnet and the console port. Moreover, it also offers secure remote management via any standard-based management software by supporting SNMPv3 connection which encrypts the packet content at each session.

Powerful Security

The WGS-5225-8P2S offers a comprehensive Layer 2 to Layer 4 Access Control List (ACL) for enforcing security to the edge. It can be used to restrict network access by denying packets based on source and destination IP address, TCP/UDP ports or defined typical network applications. Its protection mechanism also comprises 802.1x Port-based and MAC-based user and device authentication. With the private VLAN function, communication between edge ports can be prevented to ensure user privacy. The network administrators can now construct highly-secure corporate networks with considerably less time and effort than before.

Modbus TCP Provides Flexible Network Connectivity for Factory Automation

With the supported **Modbus TCP/IP** protocol, the WGS-5225-8P2S can easily integrate with **SCADA** systems, **HMI** systems and other data acquisition systems in factory floors. It enables administrators to remotely monitor the industrial Ethernet switch's **operating information**, **port information** and **communication status**, thus easily achieving enhanced monitoring and maintenance of the entire factory.

Flexibility and Extension Solution

The additional two mini-GBIC slots built in the WGS-5225-8P2S support dual speed, 100BASE-FX and 1000BASE-SX/LX SFP (Small Form-factor Pluggable) fiber-optic modules, meaning the administrator now can flexibly choose the suitable SFP transceiver according to not only the transmission distance but also the transmission speed required. The distance can be extended from 550 meters (multi-mode fiber) to 10/50/70/120 kilometers (single-mode fiber or WDM fiber). They are well suited for applications within the enterprise data centers and distributions.

Intelligent SFP Diagnosis Mechanism

The WGS-5225-8P2S supports SFP-**DDM** (Digital Diagnostic Monitor) function that greatly helps network administrator to easily monitor real-time parameters of the SFP, such as optical output power, optical input power, temperature, laser bias current, and transceiver supply voltage.

*Digital Diagnostic Monitor **(DDM)***

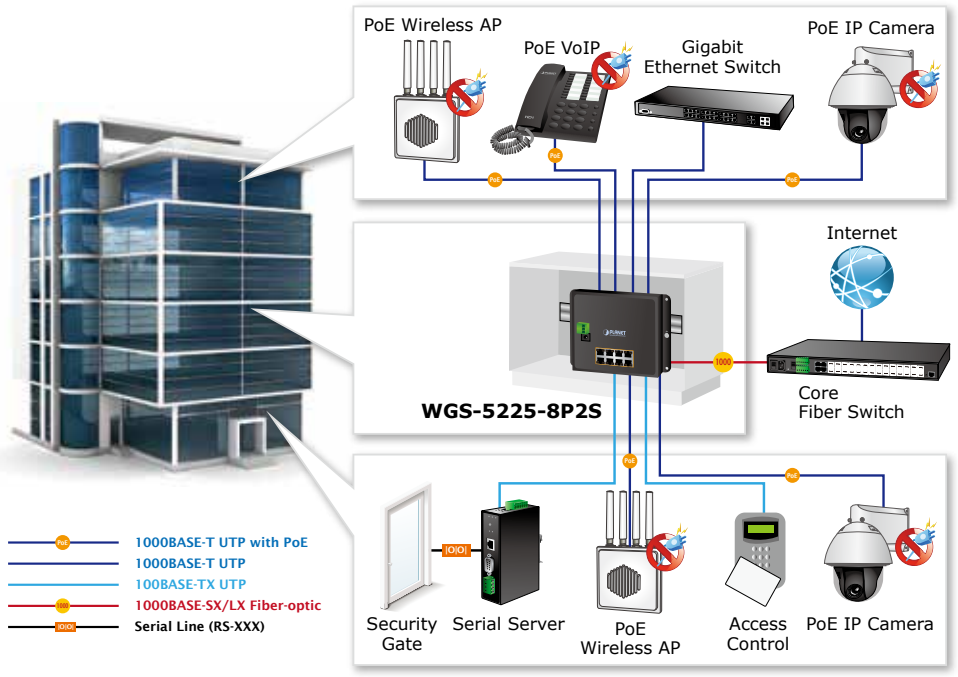
1588 Time Protocol for Industrial Computing Networks

The WGS-5225-8P2S is ideal for telecom and Carrier Ethernet applications, supporting MEF service delivery and timing over packet solutions for IEEE 1588 and synchronous Ethernet.

Applications

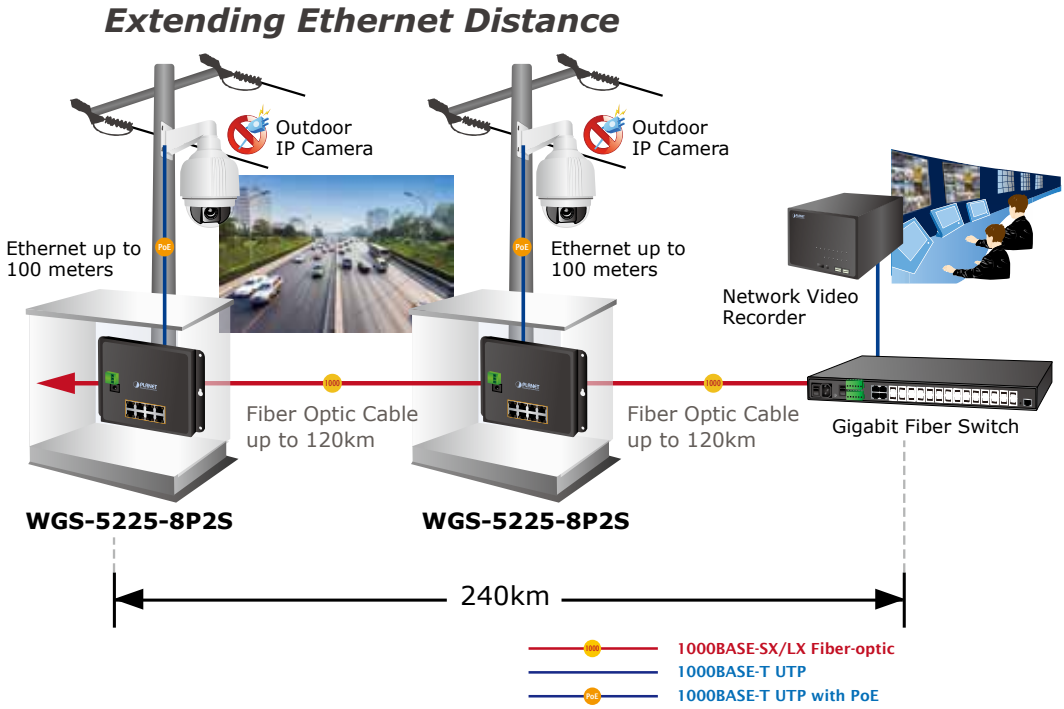
Security Building Automation Switch

Suitable for buildings where security is strictly to be enforced, the WGS-5225-8P2S offers a comprehensive Layer 2 to Layer 4 Access Control List (ACL). The switch can restrict network access by denying packets based on source and destination IP address, TCP/UDP ports or defined typical network applications. With the WGS-5225-8P2S, a tightly-controlled network can be easily had in no time.



Different Networks Managed by One Control Center

Providing up to 8 PoE+, in-line power interfaces, the WGS-5225-8P2S can centrally manage power supplying to an industrial network system where IP phones, IP cameras, wireless APs and more are built. For instance, 8 PoE IP cameras or wireless access points can be easily installed around the corner in the industrial environment for surveillance demands or for a wireless roaming network. Without the power-socket limitation, the WGS-5225-8P2S makes the installation of IP cameras and wireless APs easier and more efficient.



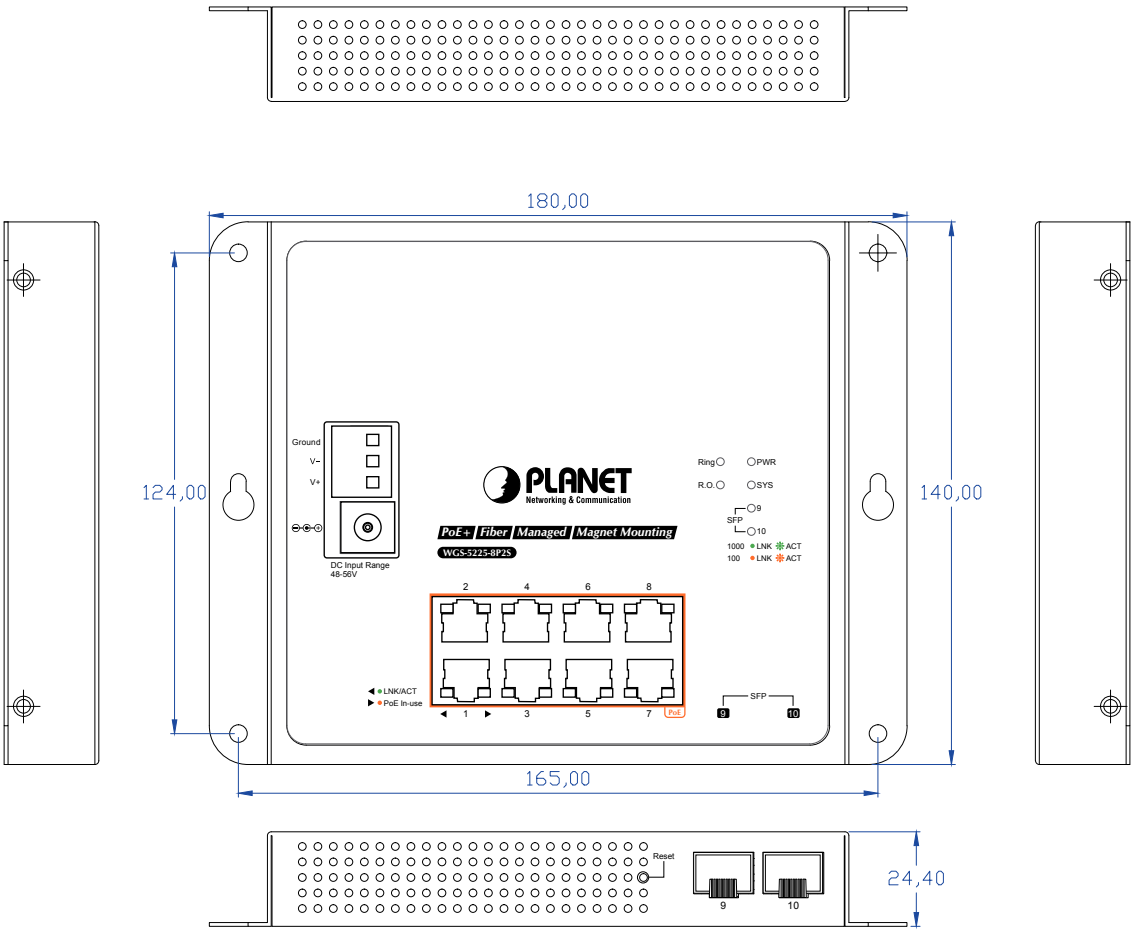
Specifications

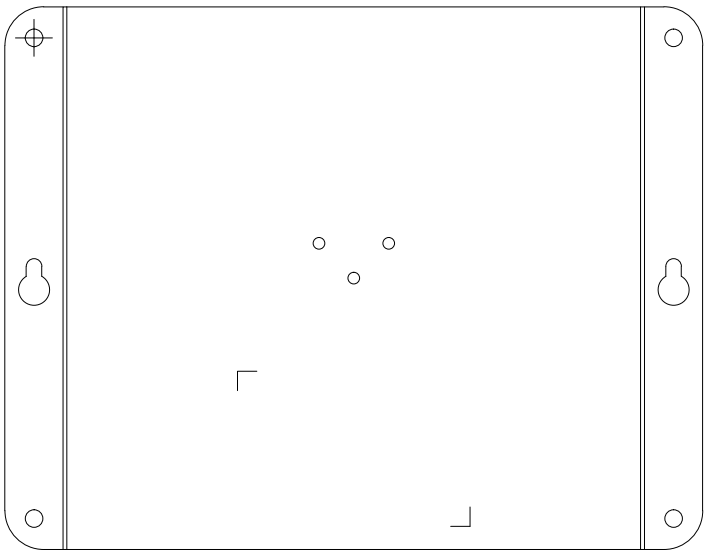
Product	WGS-5225-8P2S
Hardware Specifications	
Copper Ports	8 10/100/1000BASE-T RJ45 auto-MDI/MDI-X ports
SFP+ Slots	2 1000BASE-SX/LX/BX SFP interfaces (Port-9 to Port-10) Compatible with 100BASE-FX SFP
PoE Injector Port	8 ports with 802.3at/af PoE injector function with Port-1 to Port-8
Switch Architecture	Store-and-Forward
Switch Fabric	20Gbps/non-blocking
Throughput (packet per second)	14.88Mpps@ 64 bytes packet
Address Table	8K entries, automatic source address learning and aging
Shared Data Buffer	4Mbits
Flow Control	IEEE 802.3x pause frame for full-duplex Back pressure for half-duplex
Jumbo Frame	9Kbytes
Reset Button	< 5 sec: System reboot > 5 sec: Factory default
ESD Protection	6KV DC
Enclosure	IP30 metal case
Installation	DIN rail kit and wall-mount
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 2.0mm central pole
LED Indicator	**System:** PWR(Green) Ring (Green) Ring Owner (Green) **Per 10/100/1000T RJ45 PoE+ Ports:** PoE-in-Use (Orange) LNK/ACT (Green) **Per SFP Interface:** 100 LNK/ACT (Orange) 1000 LNK/ACT (Green)
Dimensions (W x D x H)	180 x 24.4 x 140 mm
Weight	686g
Power Requirements	Dual 48~56V DC (>51V DC for PoE+ output recommended)
Power Consumption	Max. 6.6 watts/22.6BTU (Power on without any connection) Max. 250.4 watts/859.1BTU (Full loading with PoE function)
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	240W maximum (depending on power input)
Max. Number of Class 2 PDs	8
Max. Number of Class 3 PDs	8
Max. Number of Class 4 PDs	8
PoE Extend	Max. 25 watts@10Mbps in 200 meters
Layer 2 Function	
Basic Management Interfaces	Console; Telnet; Web browser; SNMP v1, v2c
Secure Management Interfaces	SSH, SSL, SNMP v3
Port Configuration	Port disable/enable Auto-negotiation 10/100/1000Mbps full and half duplex mode selection Flow control disable/enable Power saving mode control
Port Status	Display each port's speed duplex mode, link status, flow control status, auto negotiation status, trunk status
Port Mirroring	TX/RX/both 1 to 1 monitor

VLAN	802.1Q tag based VLAN, up to 255 VLAN groups Q-in-Q tunneling Private VLAN Edge (PVE) MAC-based VLAN Protocol-based VLAN Voice VLAN MVR (Multicast VLAN Registration) Up to 255 VLAN groups, out of 4094 VLAN IDs	
Link Aggregation	IEEE 802.3ad LACP/static trunk Supports 2 trunk groups with 2 ports per trunk group	
QoS	Traffic classification based, strict priority and WRR 8-level priority for switching - Port number - 802.1p priority - 802.1Q VLAN tag - DSCP/TOS field in IP packet	
IGMP Snooping	IGMP (v1/v2/v3) snooping, up to 255 multicast groups IGMP querier mode support	
MLD Snooping	MLD (v1/v2) snooping, up to 255 multicast groups MLD querier mode support	
Access Control List	IP-based ACL/MAC-based ACL Up to 256 entries	
Bandwidth Control	Per port bandwidth control Ingress: 500Kb~1000Mbps Egress: 500Kb~1000Mbps	
SNMP MIBs	RFC 1213 MIB-II IF-MIB RFC 1493 Bridge MIB RFC 1643 Ethernet MIB RFC 2863 Interface MIB RFC 2665 Ether-Like MIB RFC 2819 RMON MIB (Groups 1, 2, 3 and 9) RFC 2737 Entity MIB RFC 2618 RADIUS Client MIB RFC 2933 IGMP-STD-MIB RFC 3411 SNMP-Frameworks-MIB IEEE 802.1X PAE LLDP MAU-MIB	
Layer 3 Function		
IP Interfaces	Max. 8 VLAN interfaces	
Routing Table	Max. 32 routing entries	
Routing Protocols	IPv4 software static routing IPv6 software static routing	
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 802.3z Gigabit SX/LX IEEE 802.3ab Gigabit 1000T IEEE 802.3x flow control and back pressure IEEE 802.3ad port trunk with LACP IEEE 802.1D Spanning Tree Protocol IEEE 802.1w Rapid Spanning Tree Protocol IEEE 802.1s Multiple Spanning Tree Protocol IEEE 802.1p Class of Service IEEE 802.1Q VLAN tagging IEEE 802.1X Port Authentication Network Control	IEEE 802.1ab LLDP IEEE 802.3af Power over Ethernet IEEE 802.3at Power over Ethernet Plus ITU-T G.8032 Ethernet Ring Protection Switching RFC 768 UDP RFC 793 TFTP RFC 791 IP RFC 792 ICMP RFC 2068 HTTP RFC 1112 IGMP v1 RFC 2236 IGMP v2

Environment	
Operating Temperature	-40 ~ 75 degrees C
Storage Temperature	-40 ~ 85 degrees C
Humidity	5 ~ 95% (non-condensing)

Drawing





Dimensions (unit = mm)

Ordering Information

WGS-5225-8P2S	Industrial L2+ 8-Port 10/100/1000T 802.3at PoE + 2-Port 100/1000X SFP Wall-mount Managed Switch

Related Products

WGS-5225-8T2SV	Industrial L2+ 8-Port 10/100/1000T + 2-Port 100/1000X SFP Wall-mount Managed Switch with LCD Touch Screen
WGS-5225-8P2SV	Industrial L2+ 8-Port 10/100/1000T 802.3at PoE + 2-Port 100/1000X SFP Wall-mount Managed Switch with LCD Touch Screen

PLANET Technology Corporation

11F., No.96, Minquan Rd., Xindian Dist., New Taipei City 231, Taiwan (R.O.C.)
Tel: 886-2-2219-9518 Fax: 886-2-2219-9528
Email: sales@planet.com.tw www.planet.com.tw

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