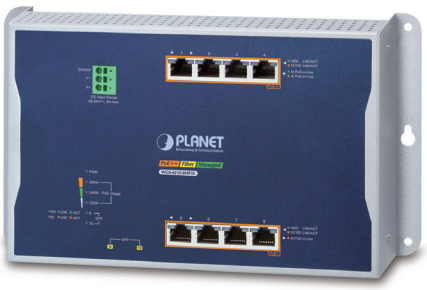
Industrial 4-Port 10/100/1000T 802.3bt PoE + 4-Port 10/100/1000T 802.3at PoE + 2-Port 100/1000X SFP Wall-mount Managed Switch (-40~75 degrees C)



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

PLANET WGS-4215-8HP2S 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 four 10/100/1000BASE-T ports featuring **95-watt 802.3bt PoE++**, four 10/100/1000BASE-T ports featuring 36-watt 802.3at PoE+ and 2 additional Gigabit TP/SFP combo port. With a total power budget of up to **360 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-4215-8HP2S** is an ideal solution that meets the demands for all network applications.

802.3bt PoE++ – 90~95-watt Power over 4-pair UTP Solution

As the WGS-4215-8HP2S adopts the IEEE 802.bt PoE++ standard and PoH technology, it is capable to source up to 95 watts of power by using all the four pairs of standard Cat5e/6 Ethernet cabling to deliver power and full-speed data to each remote PoE compliant powered device (PD). It possesses triple amount of power capability than the conventional 802.3at PoE+ and is an ideal solution to satisfy the growing demand for higher power consuming network PDs, such as:

- PoE PTZ speed dome cameras
- Network devices
- Thin clients
- AIO (all-in-one) touch PCs, point of sale (POS) and information kiosks
- Remote digital signage displays
- PoE lightings

Physical Port

- **4 10/100/1000BASE-T** Gigabit Ethernet RJ45 ports with **IEEE 802.3bt PoE++** Injector function
- **4 10/100/1000BASE-T** Gigabit Ethernet RJ45 ports with **IEEE 802.3at PoE+** Injector function
- **2 100/1000BASE-X SFP** slots for SFP type auto detection

Industrial Case and Installation

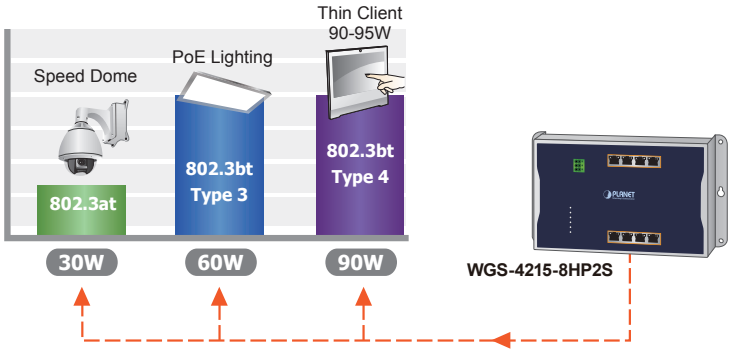
- IP30 metal case
- Supports -40 to 75 degrees C operating temperature
- Supports ESD 6KV DC Ethernet protection
- Slim size with fixed wall-mounted design

Power over Ethernet

- Complies with IEEE 802.3bt Power over Ethernet Plus Plus and IEEE 802.3at Power over Ethernet Plus PSE
- Backward compatible with 802.3af PoE PSE
- Up to 4 IEEE 802.3bt devices powered
- Up to 8 IEEE 802.3af/802.3at devices powered
- Supports PoE power up to 95 watts for each PoE++ port
- Auto detects powered device (PD)
- Circuit protection prevents power interference between ports
- Remote power feeding up to 100m
- 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
  - Sequence port PoE
  - PoE extend mode control to support power feeding up to a distance of up to 160 meters
- Intelligent PoE features
  - PoE usage threshold control
  - PD alive check
  - PoE schedule

Layer 2 Features

- Supports **VLAN**
  - IEEE 802.1Q tagged VLAN



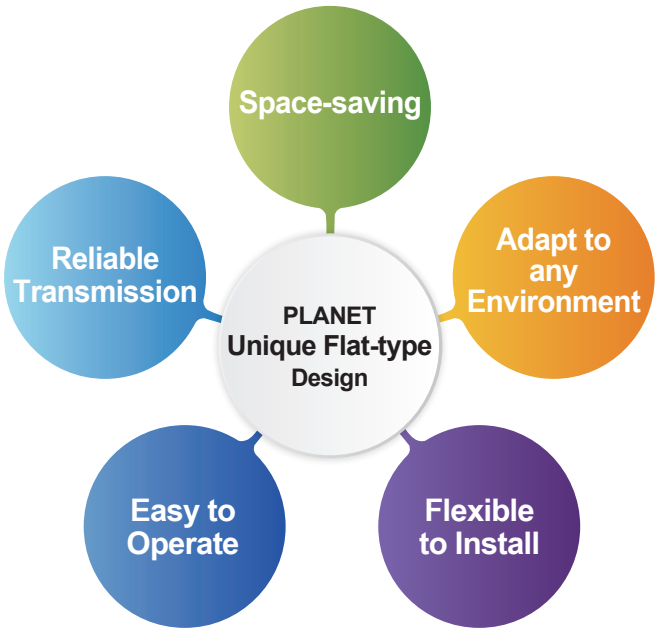
802.3bt PoE++ and Advanced PoE Power Output Mode Management

To meet the demand of various powered devices consuming stable PoE power, the WGS-4215-8HP2S provides five different PoE power output modes for selection.

- **95W UPOE/PoH Power Output Mode**
- **90W 802.3bt PoE++ Power Output Mode**
- **60W Force Power Output Mode**
- **30W End-span PoE Power Output Mode**
- **30W Mid-span PoE Power Output Mode**

Innovative Wall-mount Installation

The WGS-4215-8HP2S is specially designed to be installed in a narrow environment, such as wall enclosure or electric 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-4215-8HP2S placed in an enclosure very convenient for technicians. The WGS-4215-8HP2S can be installed by fixed wall mounting, thereby making its usability more flexible.



  - Provider Bridging (VLAN Q-in-Q) support (IEEE 802.1ad)
  - Protocol VLAN
  - Voice VLAN
  - 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 1 trunk group, up to 2 ports per trunk group
- Provides port mirror (many-to-1)
- Loop protection to avoid broadcast loops
- Supports ERPS (Ethernet Ring Protection Switching)
- Link Layer Discovery Protocol (LLDP)

Quality of Service

- Ingress/Egress Rate Limit per port bandwidth control
- Storm Control support
  - Broadcast/Unknown-Unicast/Unknown-Multicast
- Traffic classification
  - IEEE 802.1p CoS
  - TOS/DSCP/IP Precedence of IPv4/IPv6 packets
- Strict priority and Weighted Round Robin (WRR) CoS policies

Multicast

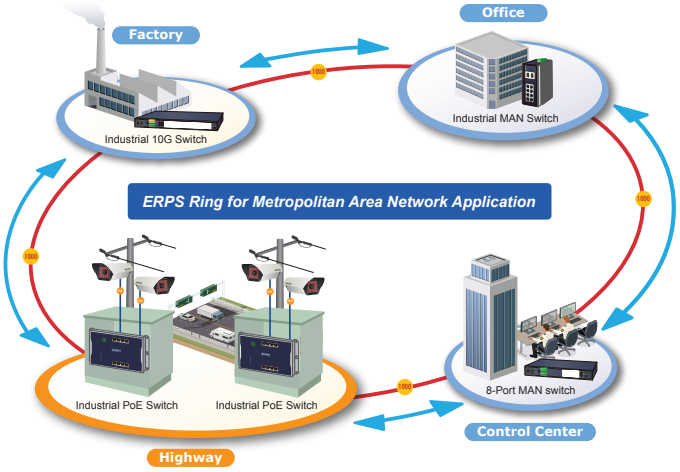
- Supports IPv4 IGMP snooping v2 and v3
- Supports IPv6 MLD snooping v1, v2
- IGMP querier mode support
- IGMP snooping port filtering
- MLD snooping port filtering

Security

- Authentication
  - IEEE 802.1X Port-based network access authentication
  - Built-in RADIUS client to co-operate with the RADIUS servers
  - RADIUS/TACACS+ login user access authentication
- Access Control List
  - IPv4/IPv6 IP-based ACL/ACE
  - MAC-based ACL/ACE

Redundant Ring, Fast Recovery for Critical Network Applications

The WGS-4215-8HP2S 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 and Spanning Tree Protocol (802.1s MSTP) into customer's industrial automation network to enhance system reliability and uptime in harsh factory environments.



Built-in Unique PoE Functions for Powered Devices Management

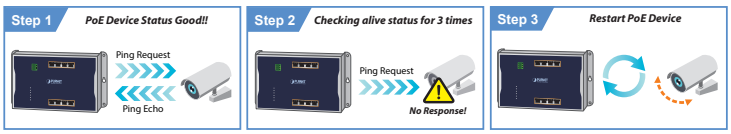
As it is the managed PoE switch for surveillance, wireless and VoIP networks, the WGS-4215-8HP2S features the following special PoE management functions:

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

Intelligent Powered Device Alive Check

The WGS-4215-8HP2S can be configured to monitor connected PD status in real time via ping action. Once the PD stops working and responding, the WGS-4215-8HP2S 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.

PoE PD Alive Check



Scheduled Power Recycling

The WGS-4215-8HP2S 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.

- 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

Management

- IPv4 and IPv6 dual stack management
- Switch Management Interfaces
  - Telnet Command Line Interface
  - Web switch management
  - SNMP v1, v2c, and v3 switch management
  - SSHv2 and TLSv1.2 secure access
- SNMP Management
  - Four RMON groups (history, statistics, alarms, and events)
  - SNMP trap for interface Link Up and Link Down notification
- User Privilege Levels Control
- Built-in Trivial File Transfer Protocol (TFTP) client
- BOOTP and DHCP for IP address assignment
- System Maintenance
  - Firmware upload/download via HTTP/TFTP
  - Configuration upload/download via HTTP/TFTP
  - Dual Images
  - Hardware reset button for system reboot or reset to factory default
- SNTP Network Time Protocol
- 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)
- Network Diagnositc
  - ICMPv6/ICMPv4 Ping Test
  - Cable diagnostic technology provides the mechanism to detect and report potential cabling issues
  - SFP-DDM (Digital Diagnostic Monitor)
- PLANET UNI-NMS (Universal Network Management) and Smart Discovery Utility for deployment management

PoE Schedule for Energy Saving

Under the trend of energy saving worldwide and contributing to environmental protection, the WGS-4215-8HP2S 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.

Robust Layer 2 Features

The WGS-4215-8HP2S 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-4215-8HP2S provides 802.1Q tagged VLAN, and the VLAN groups allowed will be maximally up to 256. Via aggregation of supporting ports, the WGS-4215-8HP2S 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.

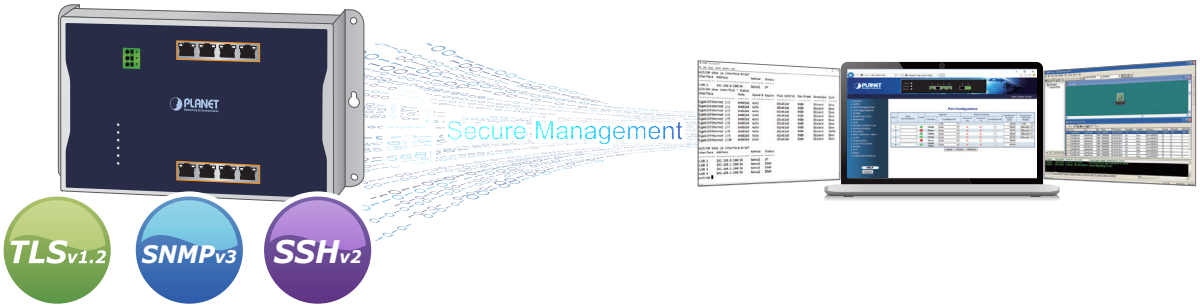
Network with Cybersecurity Helps Minimize Security Risks

The WGS-4215-8HP2S comes with enhanced cybersecurity to fend off cyberthreats and cyberattacks. It supports SSHv2 and TLSv1.2 protocols to provide strong protection against advanced threats. Served as a key point to transmit data to customer's critical equipment in a business network, the cybersecurity feature of the WGS-4215-8HP2S protects the switch management and enhances the security of the mission-critical network without any extra deployment cost and effort.

Efficient Management

For efficient management, the WGS-4215-8HP2S is equipped with Command line, Web and SNMP management interfaces.

- With the built-in **Web-based** management interface, the WGS-4215-8HP2S offers an easy-to-use, platform-independent management and configuration facility.
- For **text-based** management, it can be accessed via Telnet and SSHv2 protocol.
- For standard-based monitor and management software, it offers SNMPv3 connection which encrypts the packet content at each session for secure remote management.



Powerful Security from Layer 2 to Layer 4

The WGS-4215-8HP2S offers 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** user and device authentication.

Advanced IP Network Protection

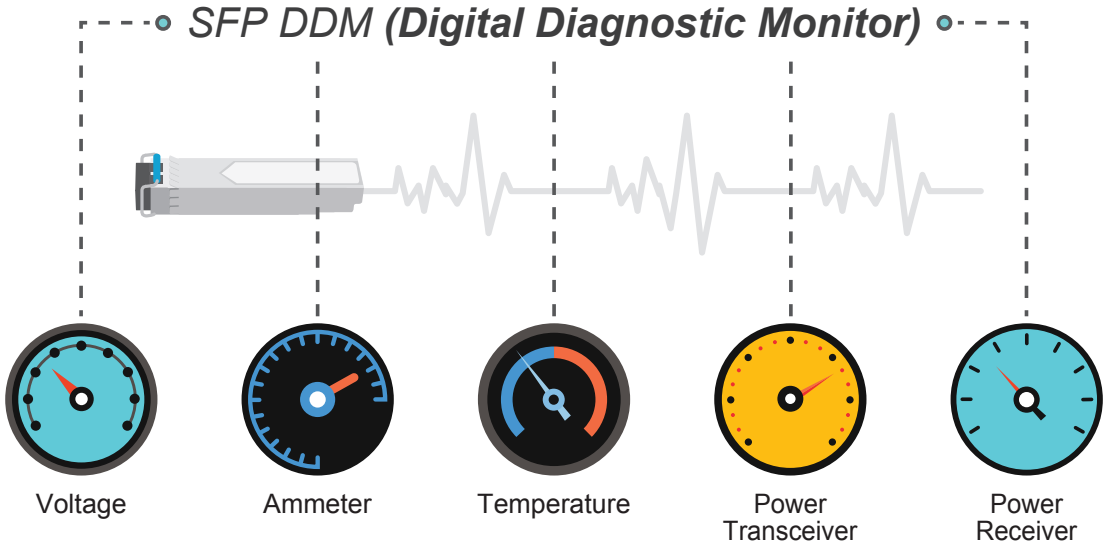
The WGS-4215-8HP2S also provides **DHCP Snooping, IP Source Guard and Dynamic ARP Inspection** functions to prevent IP snooping from attack and discard ARP packets with invalid MAC address. The network administrators can now construct highly-secure corporate networks with considerably less time and effort than before.

Flexibility and Extension Solution

The additional two SFP slots built in the WGS-4215-8HP2S support multi-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 20/40/80/120 kilometers (single-mode fiber or WDM fiber). They are well suited for applications within the enterprise data centers and distributions.

Intelligent SFP Diagnosis Mechanism

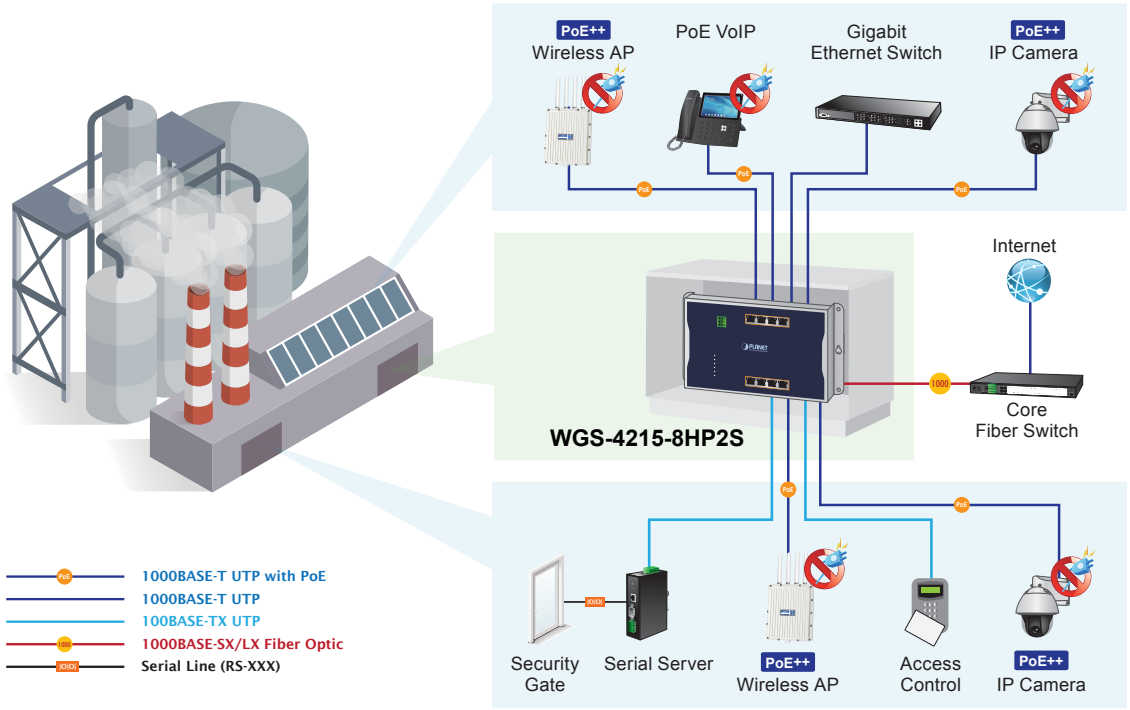
The WGS-4215-8HP2S supports SFP-**DDM** (Digital Diagnostic Monitor) function that greatly helps network administrator to easily monitor real-time parameters of the SFP, such as optical output power, optical input power, temperature, laser bias current, and transceiver supply voltage.



Applications

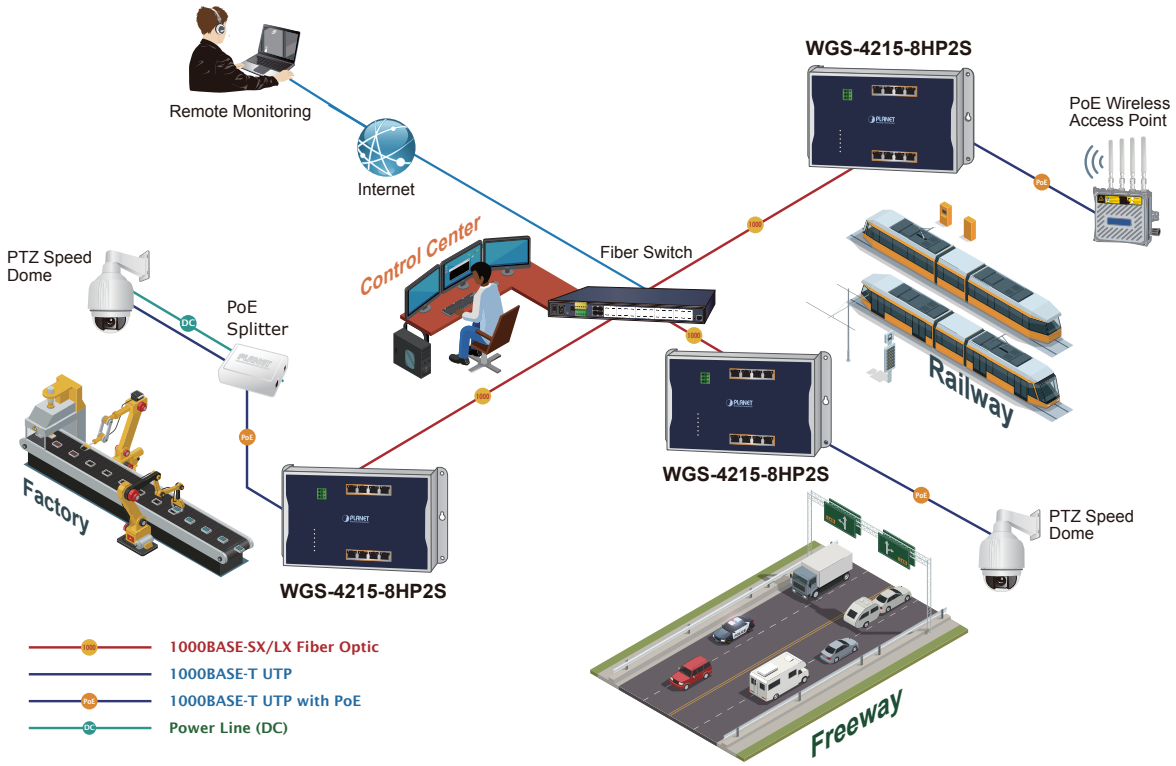
Security Industry Automation Switch

Suitable for Industrial factory where security is strictly to be enforced, the WGS-4215-8HP2S 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-4215-8HP2S, a tightly-controlled network can be easily had in no time.



Flexible PoE Applications over Different Industrial Networks

Providing up to 4 PoE++ and 4 PoE+, in-line power interfaces, the WGS-4215-8HP2S 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-4215-8HP2S makes the installation of IP cameras and wireless APs easier and more efficient.



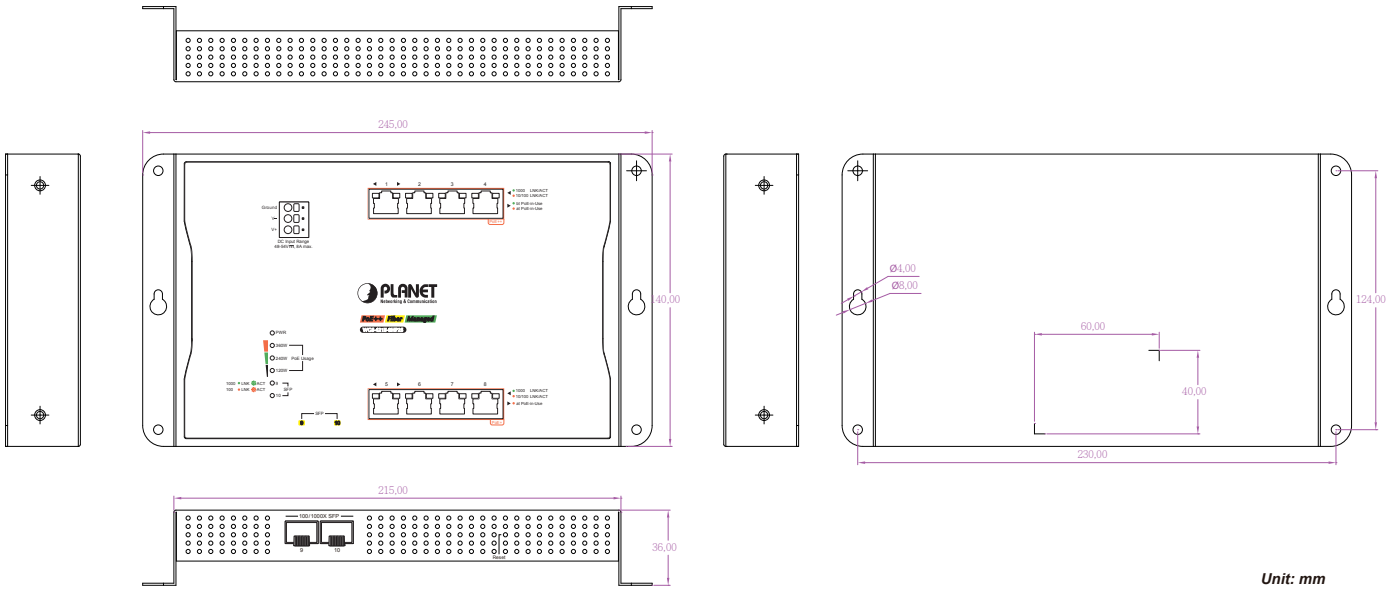
Specifications

Product	WGS-4215-8HP2S
Hardware Specifications	
Copper Ports	8 x 10/100/1000BASE-T RJ45 Auto-MDI/MDI-X ports
SFP Ports	2 x 100/1000BASE-X SFP interfaces Supports 100/1000Mbps dual mode and DDM
PoE Injector Port	4 ports with 802.3b PoE++ injector function with Port-1 to Port-4 4 ports with 802.3at/af PoE+ injector function with Port-5 to Port-8
Reset Button	< 5 sec: System reboot > 5 sec: Factory default
Dimensions (W x D x H)	245 x 140 x 36 mm
Weight	853 g
Enclosure	Metal
Power Requirements	48~56V DC, 8 A (max.)
Power Consumption/ Dissipation	System on: Max. 4 watts/ 13.6 BTU Full loading with PoE function: Max. 382 watts/ 1303.4 BTU
ESD Protection	Contact Discharge **6KV** DC Air Discharge **8KV** DC
LED	**System:** PWR x1(**Green**) **Copper Interfaces (Port 1 to Port 8):** 1000 LNK/ACT (**Green**) 10/100 LNK/ACT (**Orange**) **PoE Interfaces (Port 1 to Port 8):** bt PoE (**Green**) af/at PoE (**Orange**) **SFP Interface (Port 9 to Port 10):** 1000 LNK/ACT (**Green**) 100 LNK/ACT (**Orange**)
Switching Specifications	
Switch Architecture	Store-and-Forward
Switch Fabric	20Gbps/non-blocking
Switch Throughput@64Bytes	14.88Mpps
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	10K bytes
Power over Ethernet	
PoE Standard	IEEE 802.3bt PoE++ standard type 4 PSE IEEE 802.3af PoE+ PSE Backward compatible with IEEE 802.3afPoE PSE
PoE Power Supply Type	802.3bt / UPoE / End-span / Mid-span / Force
PoE Power Output	Per port 54V DC – 802.3bt Type-4 mode, Port-1 to Port-4: maximum 90 watts – UPoE mode, Port-1 to Port-4: maximum 95 watts – End-span mode: maximum 36 watts – Mid-span mode: maximum 36 watts – Force mode: maximum 60 watts
Power Pin Assignment	802.3bt: 1/2(-), 3/6(+), 4/5(+), 7/8(-) UPoE: 1/2(-), 3/6(+), 4/5(+), 7/8(-) End-span: 1/2(-), 3/6(+) Mid-span: 4/5(+), 7/8(-)
PoE Power Budget	up to 360 watt
Layer 2 Functions	
Port Mirroring	TX/RX/both Many-to-1 monitor Up to 4 sessions

VLAN	IEEE 802.1Q tagged VLAN IEEE 802.1ad Q-in-Q tunneling Voice VLAN Protocol VLAN Private VLAN (Protected port) GVRP Up to 256 VLAN groups, out of 4094 VLAN IDs
Link Aggregation	IEEE 802.3ad LACP/Static Trunk Supports1 trunk group with 2 ports per trunk
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) STP BPDU Guard, BPDU Filtering and BPDU Forwarding
IGMP Snooping	IPv4 IGMP (v2/v3) Snooping IPv4 IGMP Querier Up to 256 multicast groups
MLD Snooping	IPv6 MLD (v1/v2) Snooping Up to 256 multicast groups
QoS	8 mapping ID to 8 level priority queues - Port number - 802.1p priority - 802.1Q VLAN tag - DSCP field in IP packet Traffic classification based, strict priority and WRR
Ring	Supports ERPS (Ethernet Ring Protection Switching)
Security Functions	
Access Control List	IPv4/IPv6 IP-based ACL MAC-based ACL
Security	IP-MAC port binding MAC filter Static MAC address DHCP Snooping and DHCP Option82 DoS attack prevention ARP inspection IP source guard
AAA	Built-in RADIUS client to co-operate with RADIUS server
Network Access Control	IEEE 802.1X – Port-based authentication RADIUS/TACACS+ user access authentication
Management Functions	
Basic Management Interfaces	Web browser Telnet SNMP v1, v2c
Secure Management Interfaces	SSHv2, TLS v1.2, SNMP v3
System Management	Firmware upgrade by HTTP/TFTP protocol through Ethernet network LLDP protocol SNTP PLANET Smart Discovery Utility PLANET NMS System
Event Management	Remote/Local Syslog System log
SNMP MIBs	RFC 1213 MIB-II RFC 1215 Generic Traps RFC 1493 Bridge MIB RFC 2674 Bridge MIB Extensions RFC 2737 Entity MIB (Version 2) RFC 2819 RMON (1, 2, 3, 9) RFC 2863 Interface Group MIB RFC 3635 Ethernet-like MIB

Standards Conformance		
Regulatory Compliance	FCC Part 15 Class A, CE	
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 IEEE 802.3b Power over Ethernet Plus Plus IEEE 802.3az Energy Efficient Ethernet (EEE) RFC 768 UDP RFC 793 TFTP RFC 791 IP RFC 792 ICMP RFC 2068 HTTP RFC 1112 IGMP version 1 RFC 2236 IGMP version 2 RFC 3376 IGMP version 3 RFC 2710 MLD version 1 RFC 3810 MLD version 2 ITU G.8032 ERPS Ring
Environment		
Operating	Temperature: -40 ~ 75 degrees C Relative Humidity: 5 ~ 95% (non-condensing)	
Storage	Temperature: -40 ~ 85 degrees C Relative Humidity: 5 ~ 95% (non-condensing)	

Dimensions



Unit: mm

Ordering Information

WGS-4215-8HP2S	Industrial 4-Port 10/100/1000T 802.3bt PoE + 4-Port 10/100/1000T 802.3at PoE + 2-Port 100/1000X SFP Wall-mount Managed Switch

Related Products

WGS-5225-8UP2SV	Industrial L2+ 8-Port 10/100/1000T 802.3bt PoE + 2-Port 100/1000X SFP Wall-mount Managed Switch with LCD Touch Screen
WGS-4215-16P2S	Industrial 16-Port 10/100/1000T 802.3at PoE + 2-Port 100/1000X SFP Wall-mount Managed Switch
WGS-4215-8P2S	Industrial 8-Port 10/100/1000T 802.3at PoE + 2-Port 100/1000X SFP Wall-mount Managed Switch

Available 1000Mbps Modules

Gigabit Ethernet Transceiver (1000BASE-X SFP)

Model	DDM	Speed (Mbps)	Connector Interface	Fiber Mode	Distance	Wavelength (nm)	Operating Temp.
MGB-GT	--	1000	Copper	--	100m	--	0 ~ 60 degrees C
MGB-SX	YES	1000	LC	Multi Mode	550m	850nm	0 ~ 60 degrees C
MGB-SX2	YES	1000	LC	Multi Mode	2km	1310nm	0 ~ 60 degrees C
MGB-LX	YES	1000	LC	Single Mode	20km	1310nm	0 ~ 60 degrees C
MGB-L40	YES	1000	LC	Single Mode	40km	1310nm	0 ~ 60 degrees C
MGB-L80	YES	1000	LC	Single Mode	80km	1550nm	0 ~ 60 degrees C
MGB-L120	YES	1000	LC	Single Mode	120km	1550nm	0 ~ 60 degrees C

Gigabit Ethernet Transceiver (1000BASE-BX, Single Fiber Bi-directional SFP)

Model	DDM	Speed (Mbps)	Connector Interface	Fiber Mode	Distance	Wavelength (TX)	Wavelength (RX)	Operating Temp.
MGB-LA10	YES	1000	WDM(LC)	Single Mode	10km	1310nm	1550nm	0 ~ 60 degrees C
MGB-LB10		1000	WDM(LC)	Single Mode	10km	1550nm	1310nm	0 ~ 60 degrees C
MGB-LA20	YES	1000	WDM(LC)	Single Mode	20km	1310nm	1550nm	0 ~ 60 degrees C
MGB-LB20		1000	WDM(LC)	Single Mode	20km	1550nm	1310nm	0 ~ 60 degrees C
MGB-LA40	YES	1000	WDM(LC)	Single Mode	40km	1310nm	1550nm	0 ~ 60 degrees C
MGB-LB40		1000	WDM(LC)	Single Mode	40km	1550nm	1310nm	0 ~ 60 degrees C
MGB-LA80	YES	1000	WDM(LC)	Single Mode	80km	1490nm	1550nm	0 ~ 60 degrees C
MGB-LB80		1000	WDM(LC)	Single Mode	80km	1550nm	1490nm	0 ~ 60 degrees C

Available 100Mbps Modules

Fast Ethernet Transceiver (100BASE-X SFP)

Model	Speed (Mbps)	Connector Interface	Fiber Mode	Distance	Wavelength (nm)	Operating Temp.	Operating Temp.
MFB-FX	100	LC	Multi Mode	2km	1310nm	0 ~ 60 degrees C	0 ~ 60 degrees C
MFB-F20	100	LC	Single Mode	20km	1310nm	0 ~ 60 degrees C	0 ~ 60 degrees C
MFB-F40	100	LC	Single Mode	40km	1310nm	0 ~ 60 degrees C	0 ~ 60 degrees C
MFB-F60	100	LC	Single Mode	60km	1310nm	0 ~ 60 degrees C	0 ~ 60 degrees C
MFB-F120	100	LC	Single Mode	120km	1310nm	0 ~ 60 degrees C	0 ~ 60 degrees C

Fast Ethernet Transceiver (100BASE-BX, Single Fiber Bi-directional SFP)

Model	Speed (Mbps)	Connector Interface	Fiber Mode	Distance	Wavelength (TX)	Wavelength (RX)	Operating Temp.
MFB-FA20	100	WDM(LC)	Single Mode	20km	1310nm	1550nm	0 ~ 60 degrees C
MFB-FB20	100	WDM(LC)	Single Mode	20km	1550nm	1310nm	0 ~ 60 degrees C

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