Industrial L2+ 4-Port 10/100/1000T 802.3at PoE + 2-Port 1G/2.5G SFP Managed Ethernet Switch



Advanced Manageable PoE+ Solution for Hardened Environment

Complying with the IEEE 802.3at Power over Ethernet Plus technology, PLANET's improved IGS-5225-4P2S L2+ Industrial Managed PoE+ Switch features four 10/100/1000BASE-T 802.3at PoE+ ports with each port powering up to 36 watts, and **two 100/1000/2500BASE-X SFP interfaces** in a rugged IP40 metal case for stable operation in heavy industrial environments. It supports rich PoE operation modes including 36-watt 802.3at type-2 PoE+ ports, 36-watt legacy mode and force mode to solve the incompatibility of non-standard 4-pair PoE PDs in the field.

With a total power budget of up to **144 watts** for different kinds of PoE applications, the IGS-5225-4P2S provides a quick, safe and cost-effective 802.3at PoE+ network solution for small businesses and enterprises.

Being able to operate under wide temperature range from -40 to 75 degrees C, the IGS-5225-4P2S can be placed in almost any difficult environment. The IGS-5225-4P2S also allows either DIN-rail or wall mounting for efficient use of cabinet space.



Cybersecurity Network Solution to Minimize Security Risks

The cybersecurity features that virtually need no effort and cost to have include the protection of the switch management and the enhanced security of the mission-critical network. Both SSHv2 and TLSv1.2 protocols are utilized to provide strong protection against advanced threats. The network administrator can now construct highly-secure corporate networks with considerably less time and effort than before.

Physical Port

- **4 10/100/1000BASE-T** Gigabit Ethernet RJ45 ports with **802.3at PoE+** injector function
- **2 100/1000/2500BASE-X SFP** slots for SFP type auto detection
- One RJ45 console interface for basic management and setup

Power over Ethernet

- Complies with IEEE 802.3at Power over Ethernet Plus Type-2 PSE
- Backward compatible with IEEE 802.3af PD device
- Up to 4 ports of IEEE 802.3af/IEEE 802.3at PoE+ devices powered
- Supports PoE power up to 36 watts for each PoE port
- Total of 144-watt PoE budget
- Auto detects powered device (PD)
- Circuit protection prevents power interference between ports
- Remote power feeding up to 100m in standard mode and 250m in extend mode
- PoE management features
  - PoE admin-mode control
  - PoE management mode selection
  - Per port PoE function enable/disable
  - PoE port power feeding priority
  - Per PoE port power limit
  - PoE Port Status monitoring
  - PD classification detection
  - Sequence port PoE
- Intelligent PoE features
  - PoE Legacy/Force mode enable/disable
  - Temperature threshold control
  - PoE usage threshold control
  - PoE schedule
  - PD alive check
  - LLDP PoE Neighbors

Industrial Protocol

- Modbus TCP for real-time monitoring in a SCADA system
- IEEE 1588v2 PTP (Precision Time Protocol) transparent clock mode

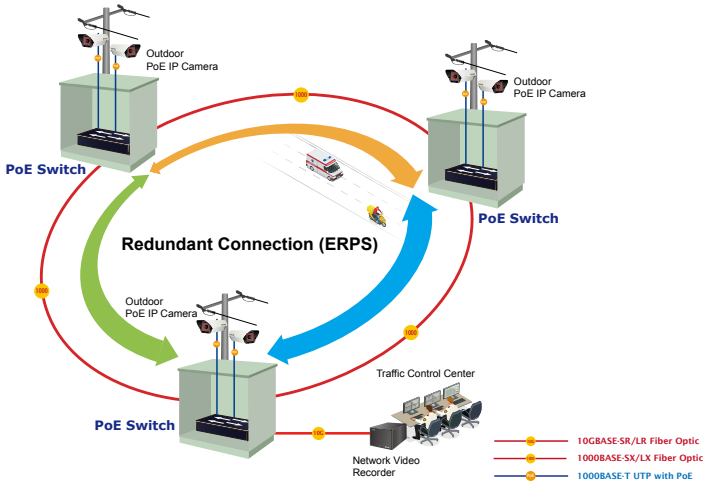


Redundant Ring, Fast Recovery for Critical Network Applications

The IGS-5225-4P2S 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 **redundant power** input system into customer's industrial automation network to enhance system reliability and uptime in harsh factory environments.

The IGS-5225-4P2S also protects customer's industrial network connectivity with switching recovery capability that is used for implementing fault tolerant ring and mesh network architectures. If the Industrial network is interrupted accidentally, the fault recovery time could be as **fast** as **10ms** to quickly bring the network back to normal operation.

ERPS Ring for Video Transmission Redundancy



Convenient and Smart ONVIF Devices with Detection Feature

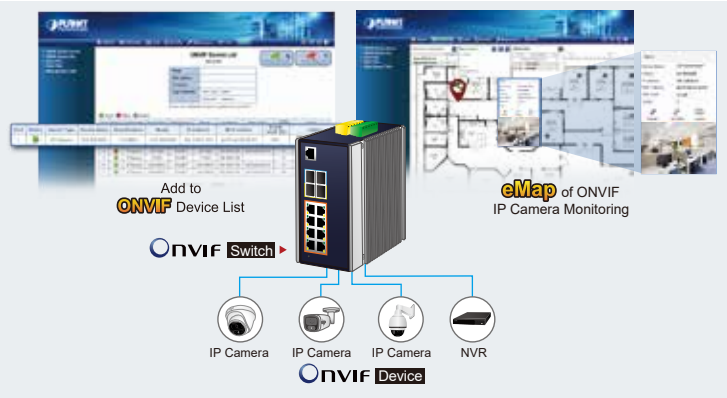
PLANET has developed an awesome feature -- ONVIF Support -- which is specifically designed for cooperating with video IP surveillances. From the IGS-5225-4P2S's GUI, you just need one click to search and show all of the ONVIF devices via network application. In addition, you can upload floor images to 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.

Industrial Case and Installation

- IP40 metal case
- DIN-rail and wall-mount designs
- DC 48-54V, redundant power with reverse polarity protection
- Supports 6000V DC Ethernet ESD protection
- -40 to 75 degrees C operating temperature

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
- Storm Control support
  - Broadcast/Multicast/Unicast
- Supports **VLAN**
  - IEEE 802.1Q tagged VLAN
  - Supports provider Bridging (VLAN Q-in-Q, IEEE 802.1ad)
  - Private VLAN Edge (PVE)
  - Port Isolation
  - MAC-based VLAN
  - Protocol-based VLAN
  - Voice VLAN
  - VLAN Translation
  - GVRP
- 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 3 trunk groups with 6 ports per trunk group
  - Up to 18Gbps bandwidth (duplex mode)
- Provides port mirror (many-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)
- Compatible with Cisco Uni-directional link detection(UDLD) that monitors a link between two switches and blocks the ports on both ends of the link if the link fails at any point between the two devices



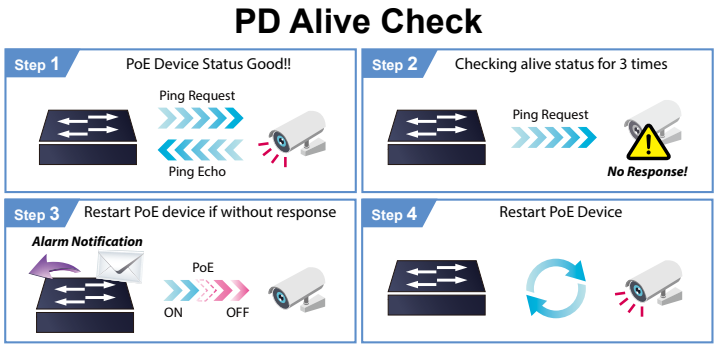
Built-in Unique PoE Functions for Powered Devices Management

As it is the industrial managed PoE+ switch for surveillance, wireless and VoIP networks, the IGS-5225-4P2S features the following special PoE management functions:

- PD Alive Check
- Scheduled Power Recycling
- PoE Schedule
- PoE Usage Monitoring
- PoE Extension

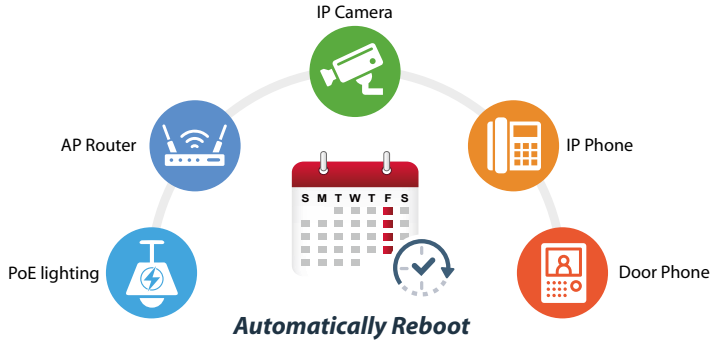
Intelligent Powered Device Alive Check

The IGS-5225-4P2S 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-5225-4P2S 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.



Scheduled Power Recycling

The IGS-5225-4P2S allows each of the connected PoE IP cameras or PoE wireless access points to reboot at a specified time each week. Therefore, it will reduce the chance of IP camera or AP crash resulting from buffer overflow.



- Link Layer Discovery Protocol (LLDP) and LLDP-MED
- Provides ONVIF for cooperating with PLANET video IP surveillances

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 policies on the switch port
- DSCP remarking

Multicast

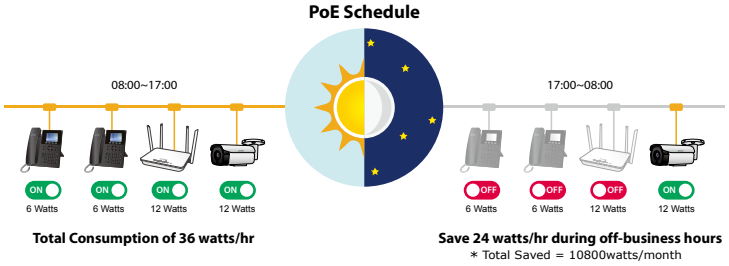
- Supports IPv4 IGMP snooping v1, v2 and v3
- Supports IPv6 MLD snooping v1 and v2
- Querier mode support
- IPv4 IGMP snooping port filtering
- IPv6 MLD snooping port filtering
- Multicast VLAN Registration (MVR) support

Security

- Authentication
  - IEEE 802.1x Port-based/MAC-based network access authentication
  - Built-in RADIUS client to co-operate with the RADIUS servers
  - TACACS+ login users access authentication
  - RADIUS/TACACS+ users access authentication
- Access Control List
  - IP-based Access Control List (ACL)
  - MAC-based Access Control List
- Source MAC/IP address binding
- **DHCP Snooping** to filter un-trusted DHCP messages
- **Dynamic ARP Inspection** discards ARP packets with invalid MAC address to IP address binding
- **IP Source Guard** prevents IP spoofing attacks

PoE Schedule for Energy Savings

Under the trend of energy savings worldwide and contributing to environmental protection on the Earth, the IGS-5225-4P2S can effectively control the power supply besides its capability of giving high watts power. The built-in **"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 money.



Intelligent LED Indicator for Real-time PoE Usage

The IGS-5225-4P2S helps users to monitor the current status of PoE power usage easily and efficiently by means of its advanced LED indication. Called **"PoE Power Usage"**, the front panel of the IGS-5225-4P2S has four amber LEDs indicating **30W**, **60W**, **90W** and **120W** of PoE power usage.

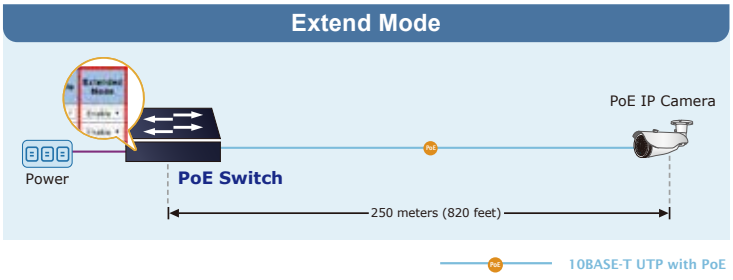


PoE Usage Monitoring

Via the power usage chart in the web management interface, the IGS-5225-4P2S 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.

802.3at PoE+ Power and Ethernet Data Transmission Distance Extension

In the **"Extend"** operation mode, the IGS-5225-4P2S operates on a per-port basis at 10Mbps duplex operation but can support 22-watt PoE power output over a distance of up to 250 meters overcoming the 100m limit on Ethernet UTP cable. With this brand-new feature, the IGS-5225-4P2S provides an additional solution for 802.3at/af PoE distance extension, thus saving the cost of Ethernet cable installation.



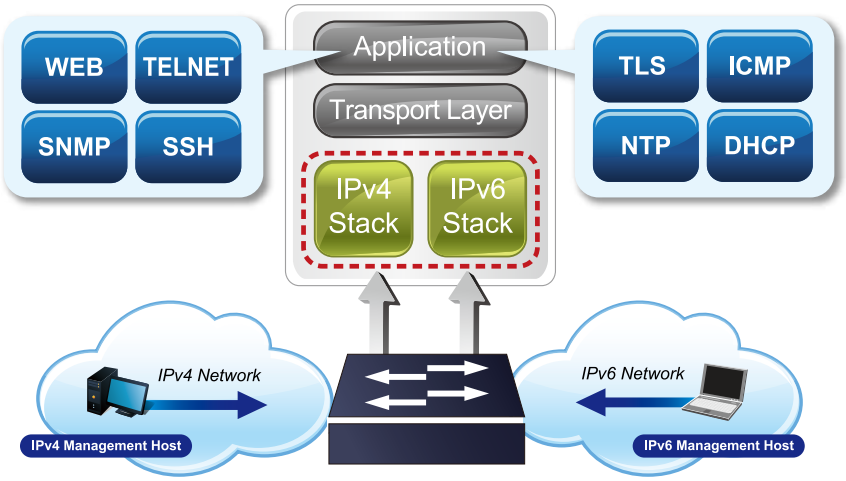
- IP address access management to prevent unauthorized intruder

Management

- IPv4 and IPv6 dual stack management
- Switch Management Interfaces
  - Console/Telnet Command Line Interface
  - Web switch management
  - SNMP v1, v2c, and v3 switch management
  - SSHv2 and TLSv1.2 secure access
- **IPv6** IP Address/NTP/DNS management
- BOOTP and DHCP for IP address assignment
- System Maintenance
  - Firmware upload/download via HTTP
  - Configuration upload/download through HTTP
  - Reset button for system reboot or reset to factory default
  - Dual Images
- DHCP Relay
- DHCP Option82
- DHCP Server Mode support
- User Privilege levels control
- NTP (Network Time Protocol)
- Link OAM
- Network Diagnostic
  - ICMPv6/ICMPv4 Remote Ping
  - Cable Diagnostic technology provides the mechanism to detect and report potential cabling issues
- SMTP/Syslog remote alarm
- Four RMON groups (history, statistics, alarms and events)
- SNMP trap for interface Link up and Link down notification
- System Log
- SFP-**DDM** (Digital Diagnostic Monitor)
- PLANET Smart Discovery Utility for deployment management
- PLANET NMS system and NMSViewerPro/CloudViewerPro for deployment management

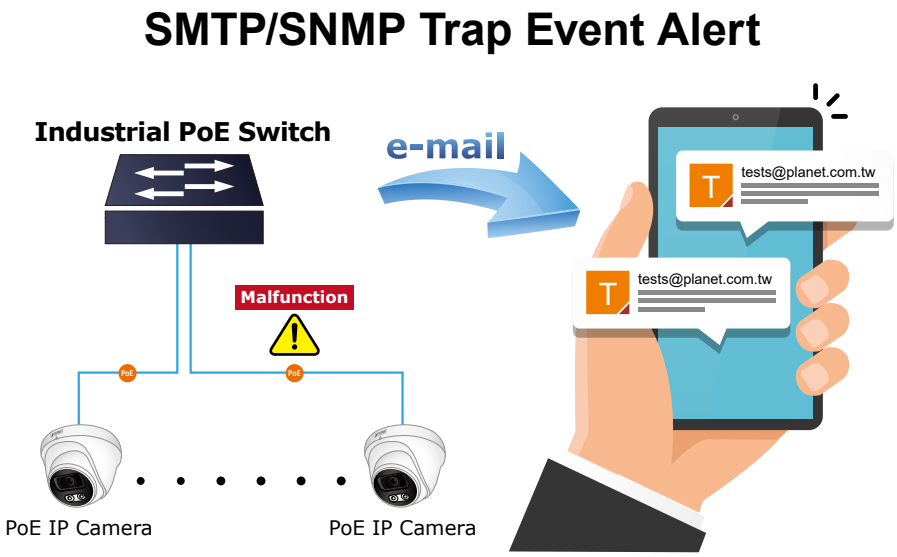
IPv6/IPv4 Dual Stack Management

Supporting both IPv6 and IPv4 protocols, the IGS-5225-4P2S 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.



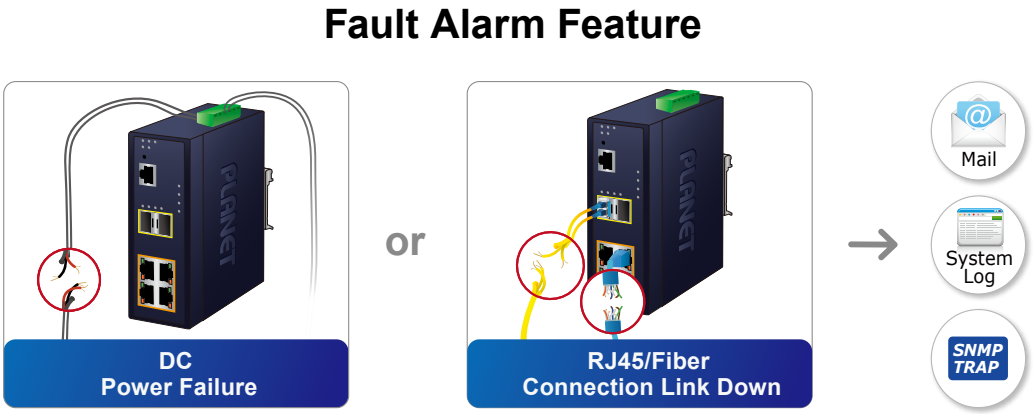
SMTP/SNMP Trap Event Alert

The IGS-5225-4P2S 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.



Effective Alarm Alert for Better Protection

The IGS-5225-4P2S supports a Fault Alarm feature which can alert the users when there is something wrong with the switches. With this ideal feature, the users would not have to waste time finding where the problem is. It will help to save time and human resource.

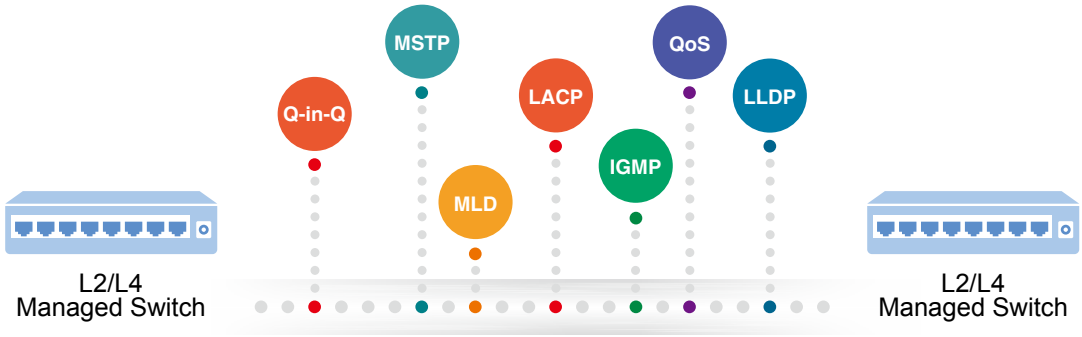


Layer 3 IPv4 and IPv6 Software VLAN Routing for Secure and Flexible Management

To help customers stay on top of their businesses, the IGS-5225-4P2S not only provides ultra high transmission performance and excellent Layer 2 technologies, but also IPv4/IPv6 software VLAN routing feature which allows to cross over different VLANs and different IP addresses for the purpose of having a highly-secure, flexible management and simpler networking application.

Robust Layer 2 Features

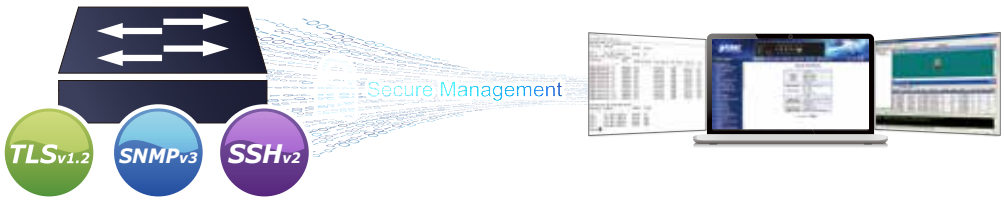
The IGS-5225-4P2S can be programmed for advanced switch management functions such as dynamic port link aggregation, Q-in-Q VLAN, private VLAN, Rapid Spanning Tree Protocol, Layer 2 to Layer 4 QoS, bandwidth control and IGMP snooping. The IGS-5225-4P2S provides 802.1Q tagged VLAN, and the VLAN groups allowed will be maximally up to 4K. Via aggregation of supporting ports, the IGS-5225-4P2S allows the operation of a high-speed trunk combining multiple ports. It enables a maximum of up to 3 trunk groups with 6 ports per trunk group, and supports fail-over as well.



Efficient Secure Management

For efficient management, the IGS-5225-4P2S is equipped with Command line, Web and SNMP management interfaces.

- With the built-in **Web-based** management interface, the IGS-5225-4P2S offers an easy-to-use, platform-independent management and configuration facility.
- For **text-based** management, it can be accessed via Telnet and the RJ45 console port.
- By supporting the standard SNMP protocol, the switch can be managed via any SNMP-based management software.



Powerful Security

The IGS-5225-4P2S 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** 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.

Remote Management Solution

PLANET's **Universal Network Management System** (UNI-NMS) and NMSViewerPro/CloudViewerPro app support IT staff by remotely managing all network devices and monitoring PDs' operational statuses. Thus, they're designed for both the enterprises and industries where deployments of PDs can be as remote as possible, without having to go to the actual location once a bug or faulty condition is found. With the UNI-NMS or NMSViewerPro/CloudViewerPro app, all kinds of businesses can now be speedily and efficiently managed from one platform.

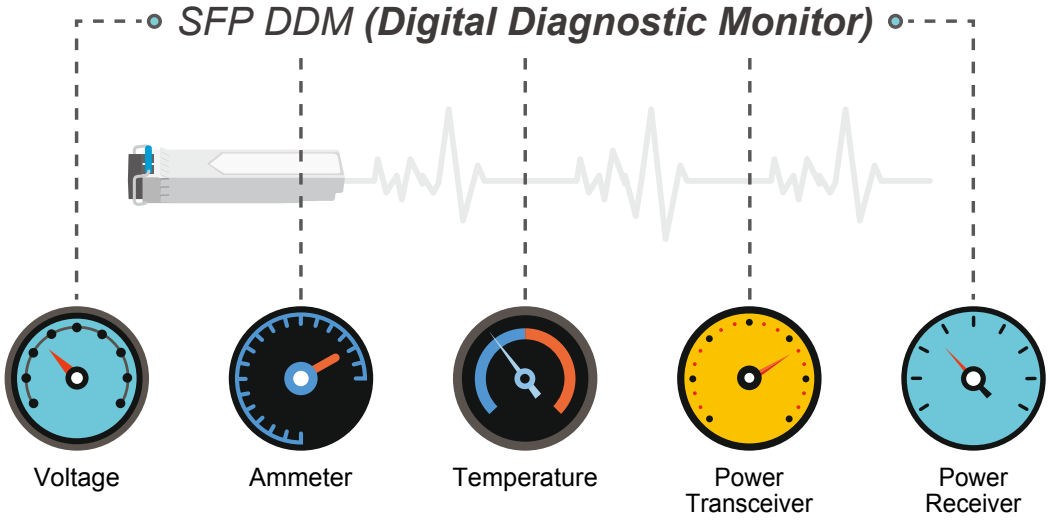


Flexibility and Extension Solution

The additional two mini-GBIC slots built in the IGS-5225-4P2S support triple-speed 100/1000/2500BASE-X 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 300 meters to 2km (multi-mode fiber) and to 10/20/30/40/60/70/80/120 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 IGS-5225-4P2S 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.

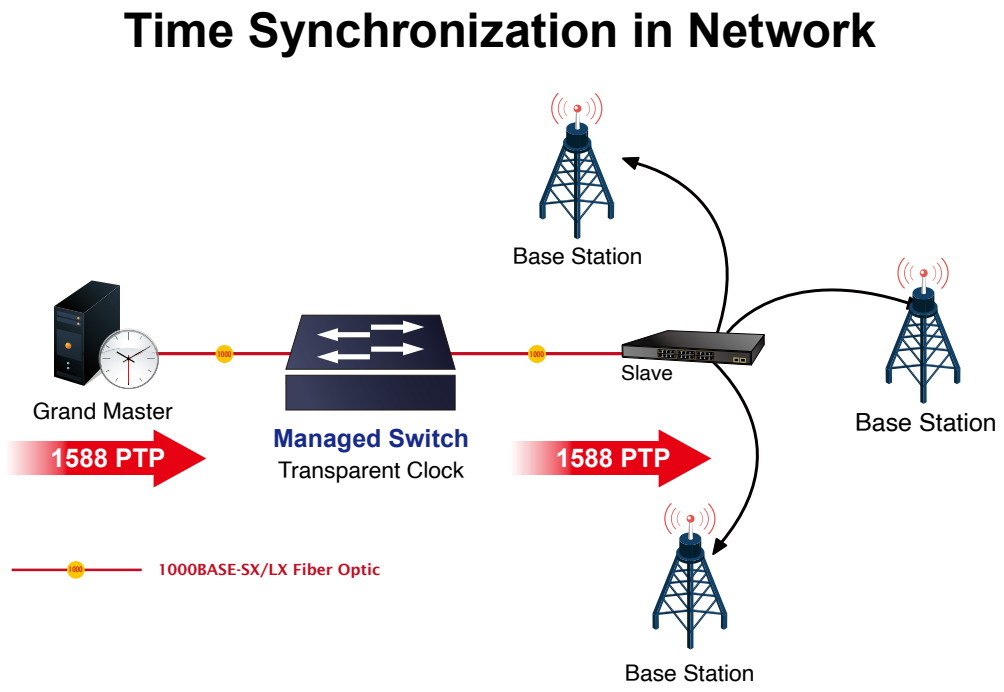


Modbus TCP Provides Flexible Network Connectivity for Factory Automation

With the supported **Modbus TCP/IP** protocol, the IGS-5225-4P2S 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.

1588 Time Protocol for Industrial Computing Networks

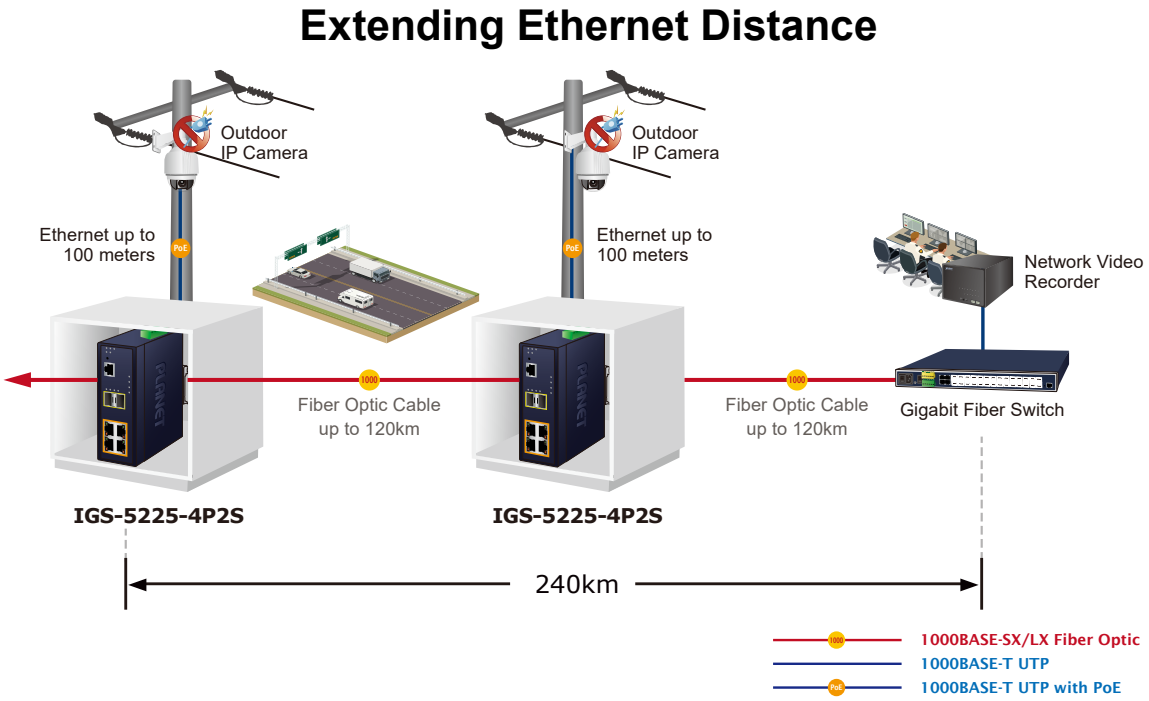
The IGS-5225-4P2S is ideal for telecom and Carrier Ethernet applications, supporting MEF service delivery and timing over packet solutions for IEEE 1588 and synchronous Ethernet.



Applications

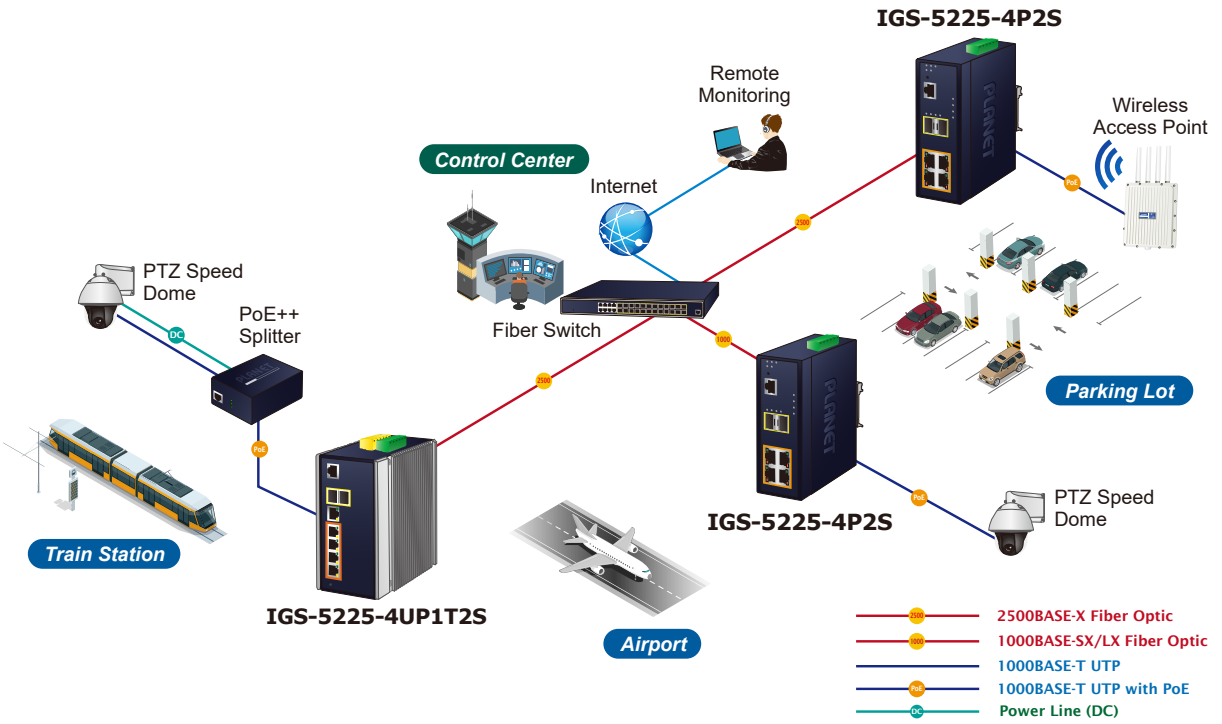
Industrial Area Department/Workgroup PoE+ Switch

Providing up to 4 802.3at PoE+, in-line power interfaces, the IGS-5225-4P2S can easily build a power centrally controlled for IP phone system, IP camera system, or wireless AP group for Industrial network. For instance, 4 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 IGS-5225-4P2S makes the installation of IP cameras or wireless AP easier and more efficient.



Gigabit 802.3at PoE+ IP Surveillance and Wireless LAN Service in Public Transportation

With IEEE 802.3at Power over Ethernet standard, the IGS-5225-4P2S can directly connect with any third-party IEEE 802.3af/802.3at compliant devices like PTZ (Pan, Tilt & Zoom) IP cameras, PTZ speed dome cameras, color touch-screen Voice over IP (VoIP) telephones, and multi-channel wireless LAN access points. Wireless LAN would be more efficient for the transportation station to provide high speed and wide area Internet services for travelers. With the PoE wireless LAN structure, the transportation authority gains benefits from less cost while providing better Internet services in wider areas for the travelers.



Specifications

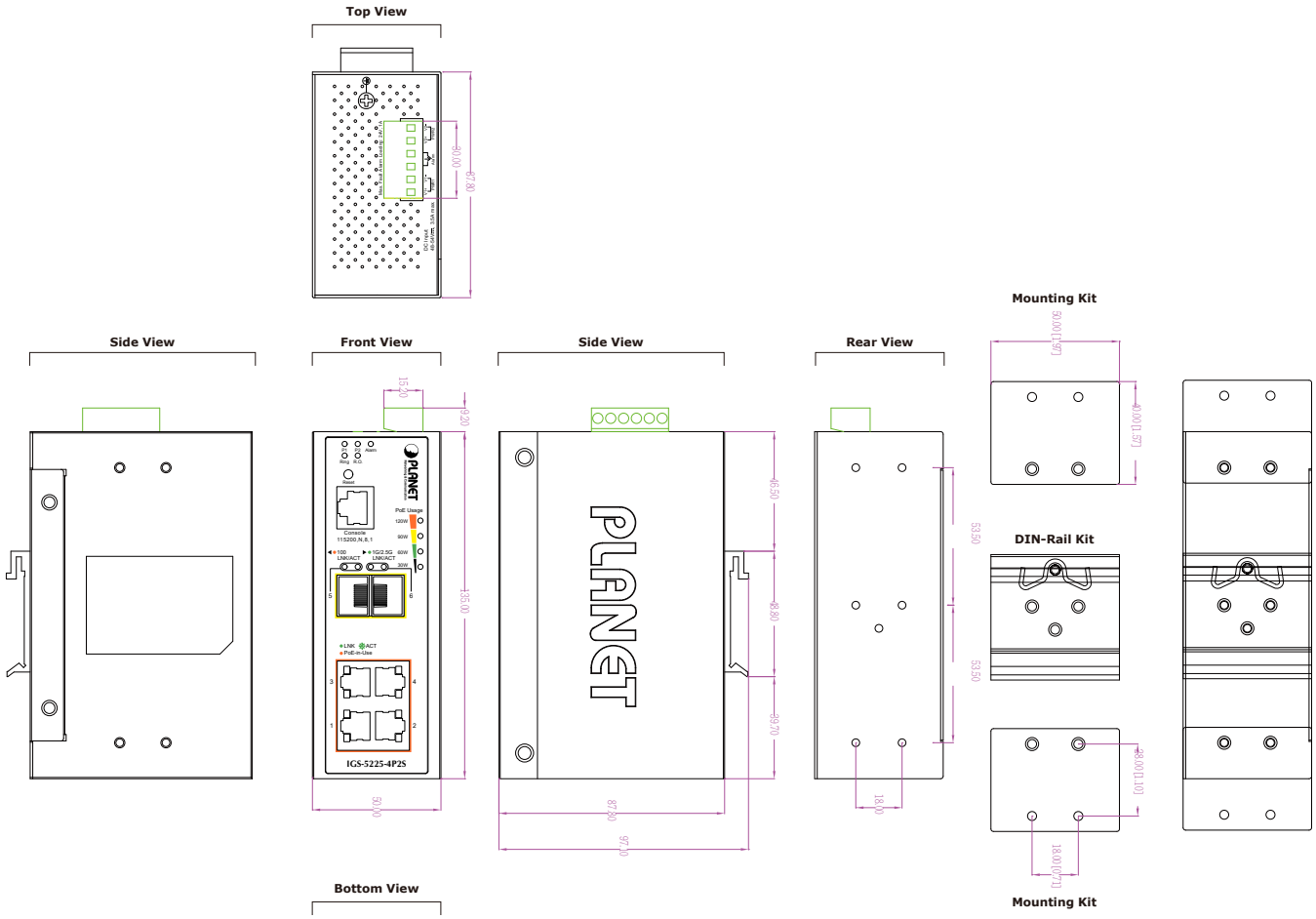
Product	IGS-5225-4P2S
Hardware Specifications	
Version	2
Copper Ports	4 10/100/1000BASE-T RJ45 auto-MDI/MDI-X ports
SFP/mini-GBIC Slots	2 100/1000/2500BASE-X mini-GBIC SFP ports (Port 5 and Port 6)
Console	1 x RJ45-to-RS232 serial port (115200, 8, N, 1)
Reset Button	< 5 sec: System reboot > 5 sec: Factory default
Enclosure	IP40 metal case
Installation	DIN-rail kit and wall-mount kit
Connector	Removable 6-pin terminal block for power input Pin 1/2 for Power 1, Pin 3/4 for fault alarm, Pin 5/6 for Power 2
Alarm	One relay output for power failure. Alarm Relay current carry ability: 1A @ DC 24V
Dimensions (W x D x H)	50 x 87x 135 mm
Weight	592g
Power Requirements	48-54V
Power Consumption	153 watts/522BTU (Full loading with PoE function with DC 54V input)
ESD Protection	6KV DC
EFT Protection	6KV DC
LED Indicator	**System:** Power 1 (**Green**) Power 2 (**Green**) Fault Alarm (**Red**) Ring (**Green**) R.O. (Ring Owner) (**Green**) **Per 10/100/1000T RJ45 PoE+ Ports (Port 1 to port 4):** PoE-in-use x 1 (**Amber**) LNK/ACT x 1 (**Green**) **Per 100/1000/2500BASE-X SFP Interface (Port 5 to port 6):** 1G/2.5G LNK/ACT (**Green**) 100 LNK/ACT (**Amber**) **4 x LED for PoE Usage:** 30W, 60W, 90W and 120W (**Amber**)
Switching Specifications	
Switch Architecture	Store-and-Forward
Switch Fabric	18Gbps/non-blocking
Throughput (packet per second)	13.3Mpps@ 64Bytes 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
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~54V DC (depending on the power supply), max. 36 watts
Power Pin Assignment	End-span: 1/2(+), 3/6(-)
PoE Power Budget	144W maximum * Dual power input must be the same as DC voltage, like dual 54V.
Max. Number of Class 2 PDs	4
Max. Number of Class 3 PDs	4
Max. Number of Class 4 PDs	4
PoE Management Functions	
PoE System Management	PoE Port status monitoring Total PoE power budget control PoE usage threshold and temperature threshold
Enhanced PoE Mode	Standard/Legacy/Force

PoE Device Live Detection	Per port remote PD IP address 4 actions - None - PD reboot - PR reboot and alarm - Alarm
PoE Power Recycling	Daily or predefined schedule
PoE Schedule	4 schedule profiles
PoE Extend Mode	Remote power feeding up to 100m in standard mode and 250m in extend mode
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
Layer 2 Function	
Port Configuration	Port disable/enable Auto-negotiation 10/100/1000Mbps full and half duplex mode selection Flow control disable/enable Port link capability 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 Many-to-1 monitor RMirror – Remote Switched Port Analyzer (Cisco RSPAN) Supports up to 5 sessions
VLAN	IEEE 802.1Q tag-based VLAN IEEE 802.1ad Q-in-Q tunneling Private VLAN Edge (PVE) MAC-based VLAN Protocol-based VLAN Voice VLAN MVR (Multicast VLAN Registration) GVRP (GARP VLAN Registration Protocol) Up to 4K VLAN groups, out of 4095 VLAN IDs
Spanning Tree Protocol	IEEE 802.1D Spanning Tree Protocol IEEE 802.1w Rapid Spanning Tree Protocol IEEE 802.1s Multiple Spanning Tree Protocol BPDU Guard
Link Aggregation	IEEE 802.3ad LACP/static trunk Supports 3 trunk groups with 6 ports per trunk group
IGMP Snooping	IPv4 IGMP (v1/v2/V3) snooping IPv4 IGMP querier mode support Up to 255 multicast groups
MLD Snooping	IPv6 MLD (v1/v2) snooping IPv6 MLD querier mode support Up to 255 multicast groups
Ring	Supports ERPS, and complies with ITU-T G.8032 Recovery time < 10ms @ 3 nodes Recovery time <50ms @ 16 nodes Supports major ring and sub-ring
Synchronization	IEEE 1588v2 PTP (Precision Time Protocol) Peer-to-peer transparent clock End-to-end transparent clock
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
Bandwidth Control	Per port bandwidth control Ingress: 100Kb~3276Mbps Egress: 100Kb~3281Mbps
Storm Control	Unicast/Multicast/Broadcast

Security Functions	
Access Control List	IP-based ACL/MAC-based ACL ACL based on: - MAC Address - IP Address - Ethertype - Protocol Type - VLAN ID - DSCP - 802.1p Priority Up to 512 entries
Security	Port security IP source guard, up to 512 entries Dynamic ARP inspection, up to 1K entries Command line authority control based on user level Static MAC address, up to 64 entries
AAA	RADIUS client TACACS+ client
Network Access Control	IEEE 802.1x port-based network access control MAC-based authentication Local/RADIUS authentication
Management	
Basic Management Interfaces	Console; Telnet; Web browser; SNMP v1, v2c
Secure Management Interfaces	SSHv2,TLSv1.2, SNMP v3
System Management	Firmware upgrade by HTTP protocol through Ethernet network Configuration upload/download through HTTP Remote syslog System log LLDP protocol NTP PLANET Smart Discovery Utility PLANET NMS system PLANET NMSViewerPro/CloudViewerPro
Event Management	Remote syslog System log SMTP
ONVIF	ONVIF device discovery ONVIF device monitoring Floor Map
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 (Group 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 Power over Ethernet MIB
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 802.3z Gigabit SX/LX IEEE 802.3bz 2.5GBASE-X 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 802.1ad Q-in-Q VLAN stacking 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 802.3az Energy-Efficient Ethernet IEEE 802.3ah OAM IEEE 802.1ag Connectivity Fault Management(CFM) IEEE 1588 PTPv2 RFC 768 UDP RFC 783 TFTP RFC 791 IP RFC 792 ICMP RFC 793 TCP RFC 2068 HTTP RFC 1112 IGMP v1 RFC 2236 IGMP v2 ITU-T G.8032 ERPS Ring ITU-T Y.1731 Performance Monitoring
Environment		
Operating Temperature	-40 ~ 75 degrees C	
Storage Temperature	-40 ~ 85 degrees C	
Humidity	5 ~ 95% (non-condensing)	

Dimensions



Unit: mm

Ordering Information

IGS-5225-4P2S	Industrial L2+ 4-Port 10/100/1000T 802.3at PoE + 2-Port 1G/2.5G SFP Managed Ethernet Switch

Available 100Mbps Modules

Fast Ethernet Transceiver (100BASE-X SFP)

Model	Speed (Mbps)	Connector Interface	Fiber Mode	Distance	Wavelength (nm)	Operating Temp.
MFB-TFX	100	LC	Multi-Mode	2km	1310nm	-40 ~ 85 degrees C
MFB-TF20	100	LC	Single Mode	20km	1310nm	-40 ~ 85 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-TFA20	100	WDM (LC)	Single Mode	20km	1310nm	1550nm	-40 ~ 85 degrees C
MFB-TFB20	100	WDM (LC)	Single Mode	20km	1550nm	1310nm	-40 ~ 85 degrees C
MFB-TFA40	100	WDM (LC)	Single Mode	40km	1310nm	1550nm	-40 ~ 85 degrees C
MFB-TFB40	100	WDM (LC)	Single Mode	40km	1550nm	1310nm	-40 ~ 85 degrees C
MFB-TSA	100	WDM (LC)	Multi- Mode	2km	1310nm	1550nm	-40 ~ 85 degrees C
MFB-TSB	100	WDM (LC)	Multi- Mode	2km	1550nm	1310nm	-40 ~ 85 degrees C

Available 1000Mbps Modules

Gigabit Ethernet Transceiver (1000BASE-X SFP)

Model	Speed (Mbps)	Connector Interface	Fiber Mode	Distance	Wavelength (nm)	Operating Temp.
MGB-TGT	1000	Copper	--	100m	--	-40 ~ 85 degrees C
MGB-TSX	1000	LC	Multi Mode	550m	850nm	-40 ~ 85 degrees C
MGB-TSX2	1000	LC	Multi Mode	2km	1310nm	-40 ~ 85 degrees C
MGB-TLX(V2)	1000	LC	Single Mode	20km	1310nm	-40 ~ 85 degrees C
MGB-TL30	1000	LC	Single Mode	30km	1310nm	-40 ~ 85 degrees C
MGB-TL40	1000	LC	Single Mode	40km	1310nm	-40 ~ 85 degrees C
MGB-TL70	1000	LC	Single Mode	70km	1550nm	-40 ~ 85 degrees C
MGB-TL80	1000	LC	Single Mode	80km	1550nm	-40 ~ 85 degrees C

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

Model	Speed (Mbps)	Connector Interface	Fiber Mode	Distance	Wavelength (TX)	Wavelength (RX)	Operating Temp.
MGB-TSA	1000	WDM(LC)	Single Mode	2km	1310nm	1550nm	-40 ~ 85 degrees C
MGB-TSB	1000	WDM(LC)	Single Mode	2km	1550nm	1490nm	-40 ~ 85 degrees C
MGB-TLA10(V2)	1000	WDM(LC)	Single Mode	10km	1310nm	1550nm	-40 ~ 85 degrees C
MGB-TLB10(V2)	1000	WDM(LC)	Single Mode	10km	1550nm	1310nm	-40 ~ 85 degrees C
MGB-TLA20	1000	WDM(LC)	Single Mode	20km	1310nm	1550nm	-40 ~ 85 degrees C
MGB-TLB20	1000	WDM(LC)	Single Mode	20km	1550nm	1310nm	-40 ~ 85 degrees C
MGB-TLA40	1000	WDM(LC)	Single Mode	40km	1310nm	1550nm	-40 ~ 85 degrees C
MGB-TLB40	1000	WDM(LC)	Single Mode	40km	1550nm	1310nm	-40 ~ 85 degrees C
MGB-TLA60	1000	WDM(LC)	Single Mode	60km	1310nm	1550nm	-40 ~ 85 degrees C
MGB-TLB60	1000	WDM(LC)	Single Mode	60km	1550nm	1310nm	-40 ~ 85 degrees C
MGB-TLA80	1000	WDM(LC)	Single Mode	80km	1490nm	1550nm	-40 ~ 85 degrees C
MGB-TLB80	1000	WDM(LC)	Single Mode	80km	1550nm	1490nm	-40 ~ 85 degrees C
MGB-TLA120	1000	WDM(LC)	Single Mode	120km	1490nm	1550nm	-40 ~ 85 degrees C
MGB-TLB120	1000	WDM(LC)	Single Mode	120km	1550nm	1490nm	-40 ~ 85 degrees C

Available 2500Mbps Modules

Gigabit Ethernet Transceiver (2500BASE-X SFP)

Model	Speed (Mbps)	Connector Interface	Fiber Mode	Distance	Wavelength (nm)	Operating Temp.
MGB-2GTSR	2500	LC	Multi Mode	300m	850nm	-40 ~ 85 degrees C
MGB-2GTLR2	2500	LC	Single Mode	2km	1310nm	-40 ~ 85 degrees C
MGB-2GTLR20	2500	LC	Single Mode	20km	1310nm	-40 ~ 85 degrees C

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

Model	Speed (Mbps)	Connector Interface	Fiber Mode	Distance	Wavelength (TX)	Wavelength (RX)	Operating Temp.
MGB-2GTLA20	2500	WDM(LC)	Single Mode	20km	1310nm	1550nm	-40 ~ 85 degrees C
MGB-2GTLB20	2500	WDM(LC)	Single Mode	20km	1550nm	1310nm	-40 ~ 85 degrees C

Related DIN-rail Power Supplies

PWR-240-48	48V, 240W DIN-rail Power Supply (NDR-480-48, adjustable 48-56V DC Output)
PWR-480-48	48V, 480W DIN-rail Power Supply (NDR-480-48, adjustable 48-56V DC Output)

Related PoE+ Indoor Wireless APs

WDAP-C3000AX	Dual Band 802.11ax 3000Mbps Ceiling-mount Wireless Access Point w/802.3at PoE+ and 2 10/100/1000T LAN Ports
WDAP-C7210E	1200Mbps 802.11ac Wave 2 Dual Band Ceiling-mount Wireless Access Point w/802.3at PoE+ and 2 10/100/1000T LAN Ports

Related Outdoor Access Points/Bridges

WDAP-3000AX	Dual Band 802.11ax 3000Mbps Outdoor Wireless AP
WDAP-850AC	Dual Band 802.11ac 1200Mbps Wave 2 Outdoor Wireless AP
WBS-900AC	5GHz 802.11ac 900Mbps TDMA Outdoor Long Range Wireless CPE
WBS-512AC	5GHz 802.11ac 900Mbps Outdoor Wireless CPE

Related IP Surveillance PoE Products

ICA-3480F	H.265+ 4MP Full Color Bullet IP Camera
ICA-3480	H.265+ 4MP Smart IR Bullet IP Camera
ICA-4480F	H.265+ 4MP Full Color Dome IP Camera
ICA-4480	H.265+ 4MP Full Color Dome IP Camera
ICA-M3580P	H.265 5 Mega-pixel Smart IR Bullet IP Camera with Remote Focus and Zoom
ICA-M4580P	H.265 5 Mega-pixel Smart IR Dome IP Camera with Remote Focus and Zoom
ICA-HM620	2 Mega-pixel PoE Plus Speed Dome Internet Camera

Related PoE+ Indoor VoIP Products

ICF-1900	High Definition Touch Color Screen Smart Media Android SIP Conference Phone
VIP-1140PT	High Definition Color PoE IP Phone
VIP-1120PT	High Definition Color PoE Gigabit IP Phone

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