Industrial L3 8-Port 10/100/1000T 802.3bt PoE + 2-Port 1G/2.5G SFP + 2/4-Port 10G SFP+ Managed Ethernet Switch

Outstanding 802.3bt PoE++ Solution for Heavy Industrial Environment

With **EN 61000-6-2** and **61000-6-4 Heavy Industrial EMC**, and railway **EN 50121-4** certified designs, and complying with the IEEE 802.3bt PoE++ technology, PLANET IGS-6329 L3 Industrial Managed PoE++ Switch Series provides non-stop data communication and reliable PoE injection, even with noise interferences coming from the heavy industrial field applications.

Complying with the IEEE 802.3bt Power over Ethernet Plus Plus technology, PLANET IGS-6329 Series features **eight 10/100/1000BASE-T 802.3bt PoE++** ports with each port powering up to **95 watts**, **two 100/1000/2500BASE-X SFP ports** and **four 10G SFP+ ports** in a rugged IP30 metal case for stable operation in heavy industrial demanding environments. It supports rich PoE operation modes including **90-watt 802.3bt type 4 PoE++ ports**, **95-watt PoH** (Power over HD-BASE-T) mode and 4-pair **force mode** to solve the incompatibility of non-standard 4-pair PoE PDs in the field.

Being able to operate under wide temperature range from -40 to 75 degrees C, the IGS-6329 Series can be placed in almost any difficult environment. The IGS-6329 Series also allows either DIN rail or wall mounting for efficient use of cabinet space.

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

As the IGS-6329 Series adopts the IEEE 802.bt PoE++ standard and PoH technology, it is capable of sourcing 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

Physical Port

- 8 10/100/1000BASE-T Gigabit Ethernet RJ45 ports with 802.3bt PoE++ Injector function
- 2 100/1000/2500BASE-X SFP slots for SFP type auto detection
- 2/4 10GBASE-SR/LR SFP+ slots, compatible with 1000BASE-X and 2500BASE-X SFP
- One RJ45-to-RS232 console interface for basic management and setup

Industrial Hardened design

- Dual power input, redundant power with reverse polarity protection
  - DC 48 to 54V input
  - Active-active redundant power failure protection
  - Backup of catastrophic power failure on one supply
  - Fault tolerance and resilience
- DIN-rail and wall-mountable designs
- IP30 aluminum case
- Supports ESD 6KV DC Ethernet protection
- -40 to 75 degrees C operating temperature

### Digital Input and Digital Output

- 2 Digital Input (DI)
- 2 Digital Output (DO)
- Integrate sensors into auto alarm system
- Transfer alarm to IP network via email and SNMP trap

802.3bt Power over Ethernet

- Complies with IEEE 802.3bt Power over Ethernet Plus Plus Type-4 PSE
- Backward compatible with IEEE 802.3at/af PD device
- Up to 8 ports of IEEE 802.3af/IEEE 802.3at/IEEE 802.3bt PoE++ devices powered
- Supports PoE power up to 95 watts for each PoE port
- Total of 360-watt PoE budget
- 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

each remote PoE compliant powered device (PD). It possesses the power capacity that is triple 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
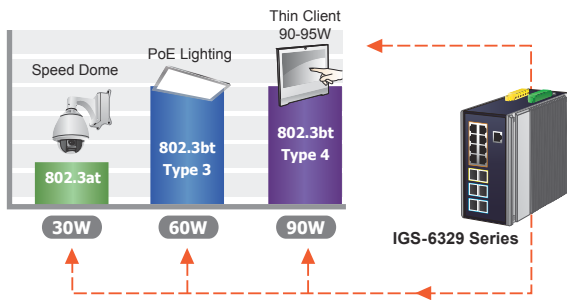
IGS-6329 Series

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

To meet the demand of various powered devices consuming stable PoE power, the IGS-6329 Series provides five different PoE power output modes for selection.

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

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 IGS-6329 Series GUI, clients just need one click to search and show all of the ONVIF devices via network application.

In addition, clients can upload floor plans to the switch, allowing to locate surveillance devices for easier inspection and planning. Moreover, clients can get real-time surveillance's information and online/offline status, and also allows cameras PoE reboot control from GUI.
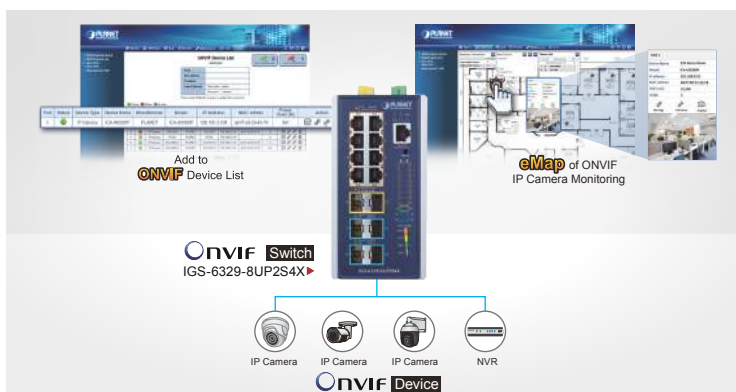
- Per PoE port power limit
- PD classification detection
- PoE extend mode control to support power feeding up to a distance of up to 160 meters

Intelligent PoE features

- Temperature threshold control
- PoE usage threshold control
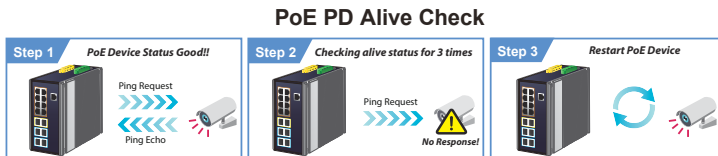- PD alive check
- PoE schedule

Layer 3 IP Routing Features

- IP dynamic routing protocol supports RIPv2, OSPFv2 and OSPFv3
- IPv4/IPv6 hardware static routing
- Routing interface provides per VLAN routing mode

Layer 2 Features

- 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 (IEEE 802.1ad VLAN Q-in-Q)
  - Private VLAN Edge (PVE)
  - Protocol-based VLAN
  - MAC-based VLAN
  - Voice VLAN
  - GVRP (GARP VLAN Registration Protocol)
- 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 4 trunk groups with 4 ports per trunk group
  - Up to 80Gbps 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
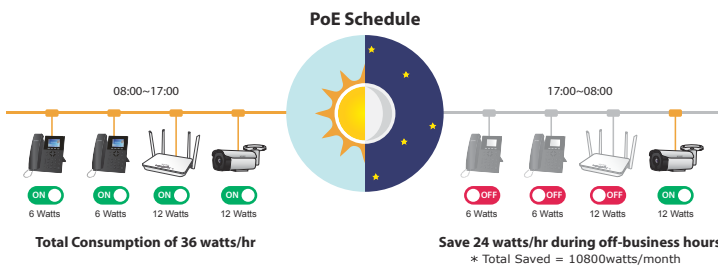- Link Layer Discovery Protocol (LLDP)

Intelligent Alive Check for Powered Device

The IGS-6329 Series can be configured to monitor connected PD's status in real time via ping action. Once the PD stops working and responding, the IGS-6329-Series 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.

PoE PD Alive Check

| Step 1 | PoE Device Status Good!! | Step 2 | Checking alive status for 3 times | Step 3 | Restart PoE Device |

PoE Schedule for Energy Savings

Under the trend of energy savings worldwide and contributing to environmental protection on the Earth, the IGS-6329 Series 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.

PoE Schedule

08:00~17:00   17:00~08:00

ON 6 Watts   ON 6 Watts   ON 12 Watts   ON 12 Watts   OFF 6 Watts   OFF 6 Watts   OFF 12 Watts   ON 12 Watts

Total Consumption of 36 watts/hr   **Save 24 watts/hr during off-business hours**
∗ Total Saved = 10800watts/month

Scheduled Power Recycling

The IGS-6329 Series 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.

IP Camera

AP Router   IP Phone

PoE lighting   Door Phone

Automatically Reboot
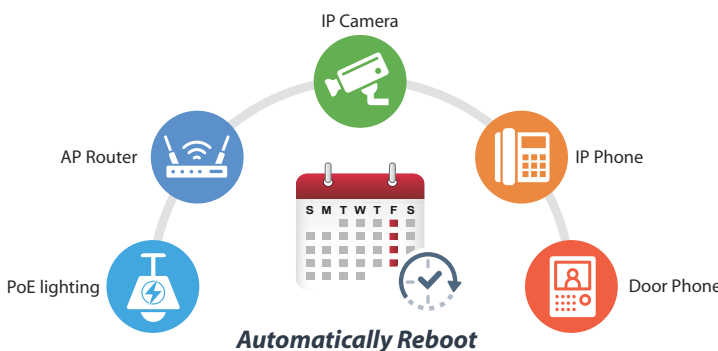
Layer 3 Routing Support

The IGS-6329 Series enables the administrator to conveniently boost network efficiency by configuring Layer 3 IPv4/IPv6 VLAN static routing manually, the RIP (Routing Information Protocol) or OSPF (Open Shortest Path First) settings automatically. The RIP can employ the hop count as a routing metric and prevent routing loops by implementing a limit on the number of hops allowed in a path

- 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
- Supports G.8032 ERPS (Ethernet Ring Protection Switching)
- IEEE 1588v2 PTP (Precision Time Protocol) transparent clock mode

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

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
- MVR (Multicast VLAN Registration)

Security

- Authentication
  - 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
  - Guest VLAN assigns clients to a restricted VLAN with limited services
- Access Control Lit
  - 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

from the source to a destination. The OSPF is an interior dynamic routing protocol for autonomous system based on link state. The protocol creates a database for link state by exchanging link states among Layer 3 switches, and then uses the Shortest Path First algorithm to generate a route table based on that database.

Redundant Ring, Fast Recovery for Critical Network Applications

The IGS-6329 Series 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. In a certain simple Ring network, the recovery time of data link can be as fast as 10ms.

Network with Cybersecurity Helps Minimize Security Risks

The IGS-6329 Series comes with enhanced cybersecurity to fend off cyberthreats and cyberattacks. It supports SSHv2, TLSv1.2 and SNMPv3 protocols to provide strong protection against advanced threats. Served as a key point to transmit data and offering over 95-watt PoE output to customer's critical equipment in a business network, the cybersecurity feature of the IGS-6329 Series protects the switch management and enhances the security of the mission-critical network without any extra deployment cost and effort.
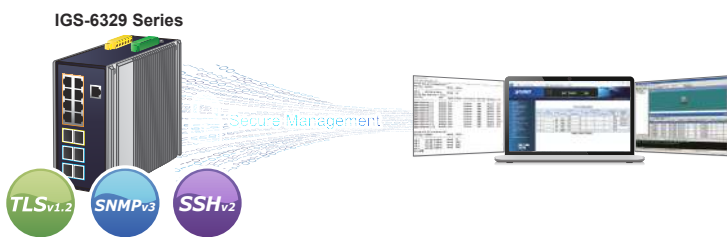
Modbus TCP Provides Flexible Network Connectivity for Factory Automation

With the supported **Modbus TCP/IP** protocol, the IGS-6329 Series 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**, communication status, and DI and DO status, thus easily achieving enhanced monitoring and maintenance of the entire factory.

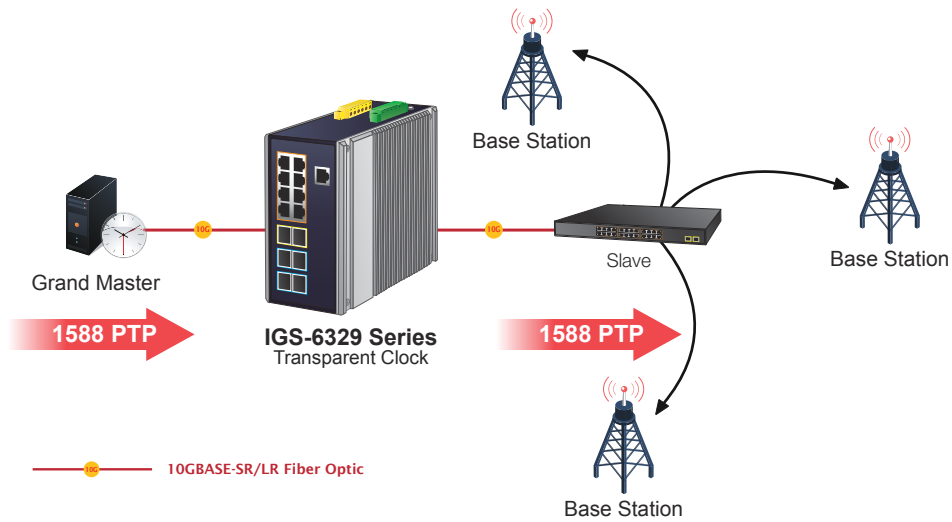## 1588 Time Protocol for Industrial Computing Networks

The IGS-6329 Series is ideal for telecom and Carrier Ethernet applications, supporting MEF service delivery and timing over packet solutions for IEEE 1588 and synchronous Ethernet.

- IP address access management to prevent unauthorized intruder

Switch Management

- IPv4 and IPv6 dual stack management
- Switch Management Interfaces
  - Console and Telnet Command Line Interface
  - HTTP web switch management
  - SNMP v1 and v2c switch management
  - SSHv2, TLSv1.2 and SNMPv3 secure access
- SNMP Management
  - Four RMON groups (history, statistics, alarms, and events)
  - SNMP trap for interface Link Up and Link Down notification
- **IPv6** IP address/NTP/DNS management
- Built-in Trivial File Transfer Protocol (TFTP) client
- BOOTP and DHCP for IP address assignment
- System Maintenance
  - Firmware upload/download via HTTP
  - Reset button for system reboot or reset to factory default
  - Dual images
- DHCP Relay and Option 82
- DHCP Server
- User Privilege levels control
- Network Time Protocol (NTP)
- Network Diagnostic
  - SFP-DDM (Digital Diagnostic Monitor)
  - Cable diagnostic technology provides the mechanism to detect and report potential cabling issues
  - ICMPv6/ICMPv4 remote ping
- SMTP, Syslog and SNMP trap remote alarm
- System Log
- PLANET Smart Discovery Utility for deployment management
- PLANET UNI-NMS (Universal Network Management) and Smart Discovery Utility for deployment management
- Provides ONVIF for co-operating with PLANET video IP surveillances

Time Synchronization in Network

Base Station

Grand Master

1588 PTP

IGS-6329 Series
Transparent Clock

Slave

Base Station

1588 PTP

Base Station

10GBASE-SR/LR Fiber Optic

SMTP/SNMP Trap Event Alert

The IGS-6329 Series 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.

IGS-6329 Series

e-mail

tests@planet.com.tw

tests@planet.com.tw

Malfunction

IP Camera   IP Camera
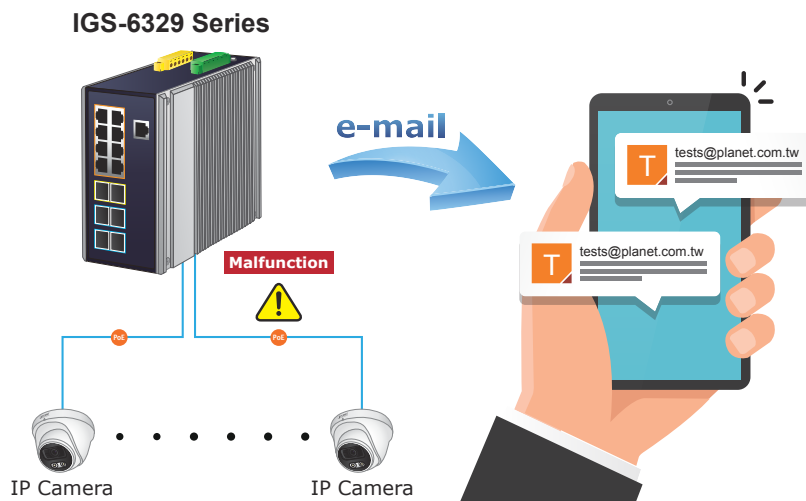
Effective Alarm Alert for Better Protection

The IGS-6329 Series 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.
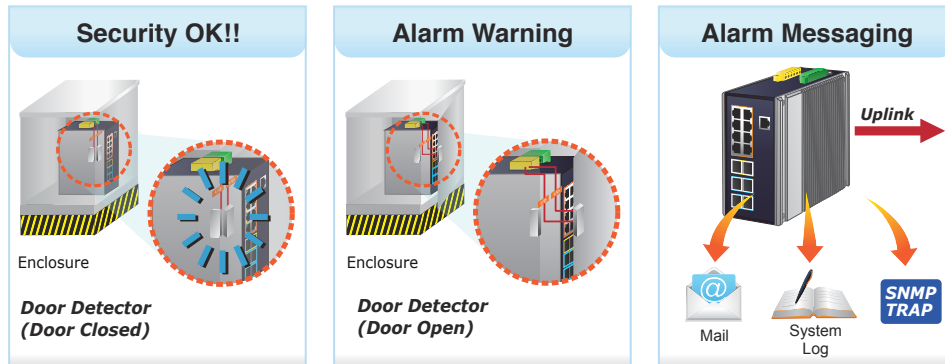
Fault Alarm Feature

or

Mail

System Log

SNMP TRAP

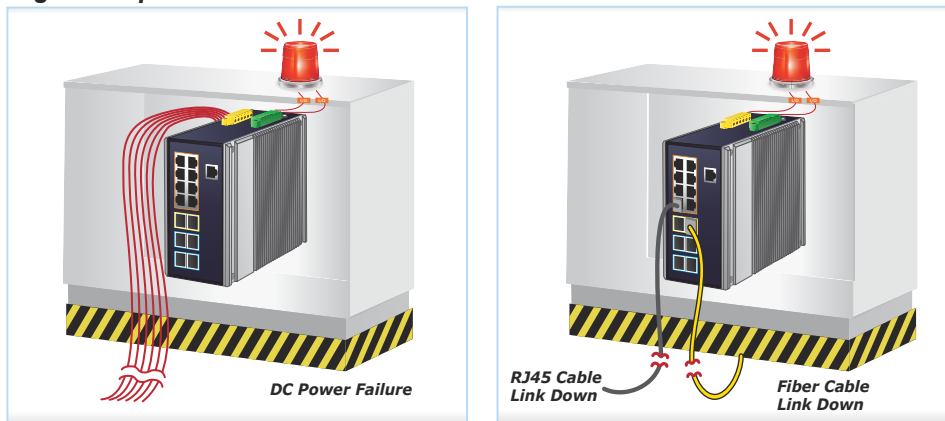**DC Power Failure**

RJ45/Fiber Connection Link Down
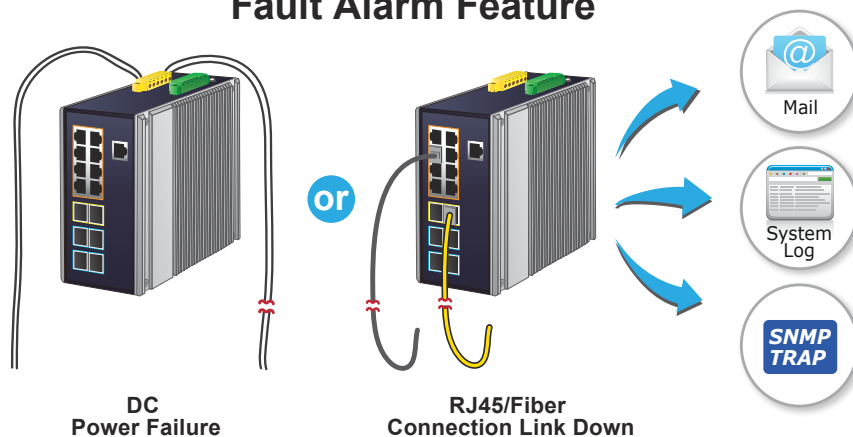
Digital Input and Digital Output for External Alarm

The IGS-6329 Series supports Digital Input and Digital Output on its front panel. This external alarm enables users to use Digital Input to detect and log external device status (such as door intrusion detector), and send event alarm to the administrators. The Digital Output could be used to alarm the administrators if the IGS-6329 Series' port shows link down, link up or power failure.

Digital Input

| Security OK!! | Alarm Warning | Alarm Messaging |

Enclosure

Door Detector (Door Closed)

Enclosure

Door Detector (Door Open)

Uplink

Mail   System Log   SNMP TRAP

Digital Output

DC Power Failure

RJ45 Cable Link Down

Fiber Cable Link Down

Robust Layer 2 Features

The IGS-6329 Series can be programmed for advanced Layer 2 switch management functions such as dynamic port link aggregation, 802.1Q tagged VLAN, Q-in-Q VLAN, private VLAN, Multiple Spanning Tree Protocol (MSTP), Layer 2 to Layer 4 QoS, bandwidth control, IGMP snooping and MLD snooping. Via the aggregation of supporting ports, the IGS-6329 Series allows the operation of a high-speed trunk group that comes with multiple ports and supports failover as well.

Efficient Management

For efficient management, the IGS-6329 Series is equipped with console, Web and SNMP management interfaces.

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

Powerful Network Security

The IGS-6329 Series 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.

Advanced IP Network Protection

The IGS-6329 Series 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.

Flexible and Extendable 10Gb Ethernet Solution

10Gbps Ethernet is a big leap in the evolution of Ethernet. Each of the 10G SFP+ slots in the IGS-6329 Series supports multiple **speed** and **10GBASE-SR/ LR**, **1000BASE-SX/LX or 2500BASE-X**. With different models, two or four ports 10Gbps Ethernet link capability and additional 2-port 1G/2.5Gbps Ethernet link capability, the administrator now can flexibly choose the suitable SFP/SFP+ transceiver according to the transmission distance or the transmission speed required to extend the network efficiently. The IGS-6329 Series provides broad bandwidth and powerful processing capacity.

Intelligent SFP Diagnosis Mechanism

The IGS-6329 Series supports SFP-DDM (digital diagnostic monitor) function that greatly helps network administrator to easily monitor real-time parameters of the SFP and SFP+ transceivers, such as optical output power, optical input power, temperature, laser bias current, and transceiver supply voltage.

SFP DDM (Digital Diagnostic Monitor)

| Voltage | Ammeter | Temperature | Power Transceiver | Power Receiver |
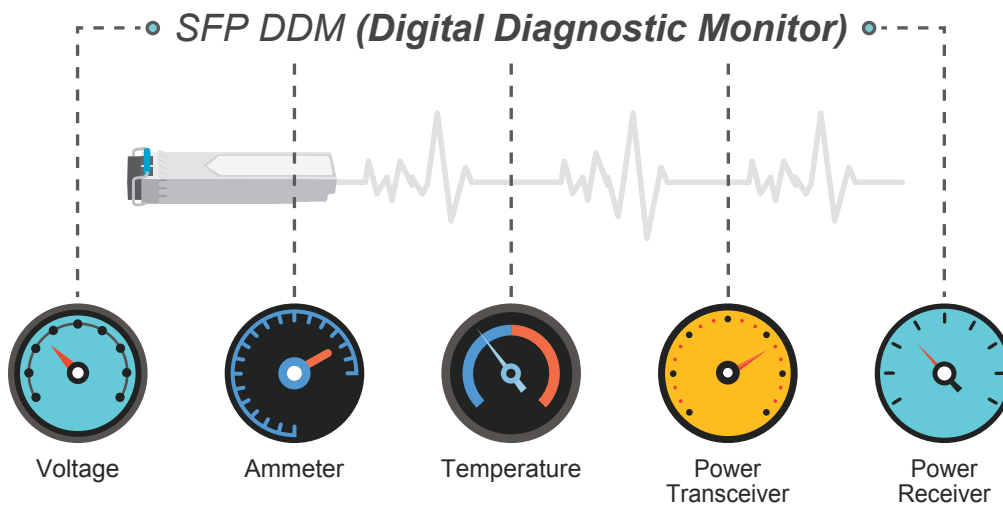
Applications

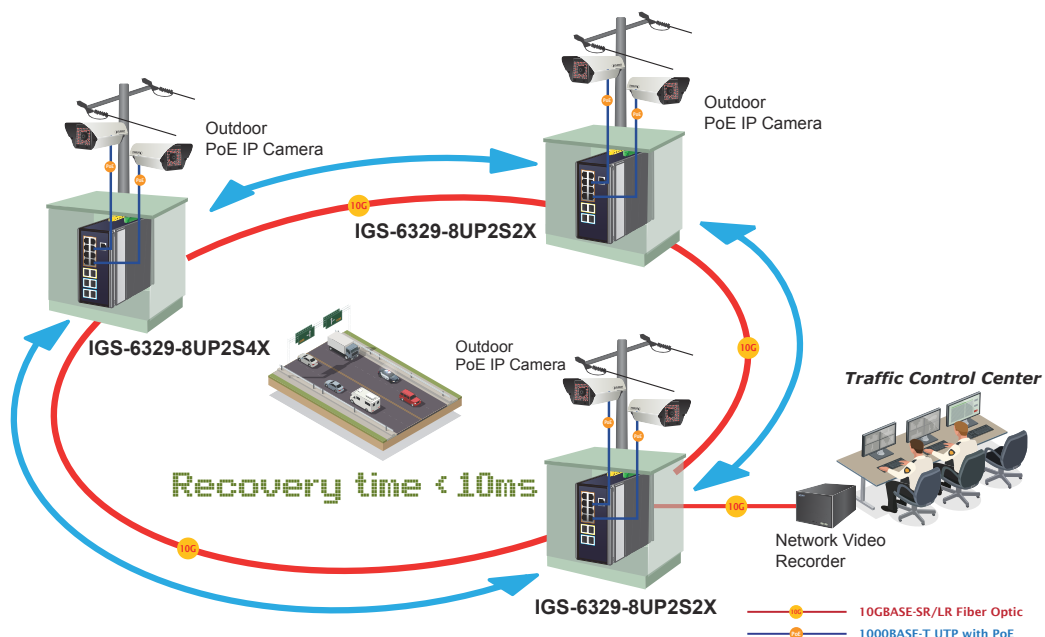## Industrial Area Department/Workgroup PoE Switch

Providing up to 8 PoE++, in-line power interfaces, the IGS-6329 Series can easily build a power centrally controlled for IP phone system, IP camera system, or wireless AP group for Industrial network. 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 IGS-6329 Series makes the installation of IP cameras or wireless AP easier and more efficient.
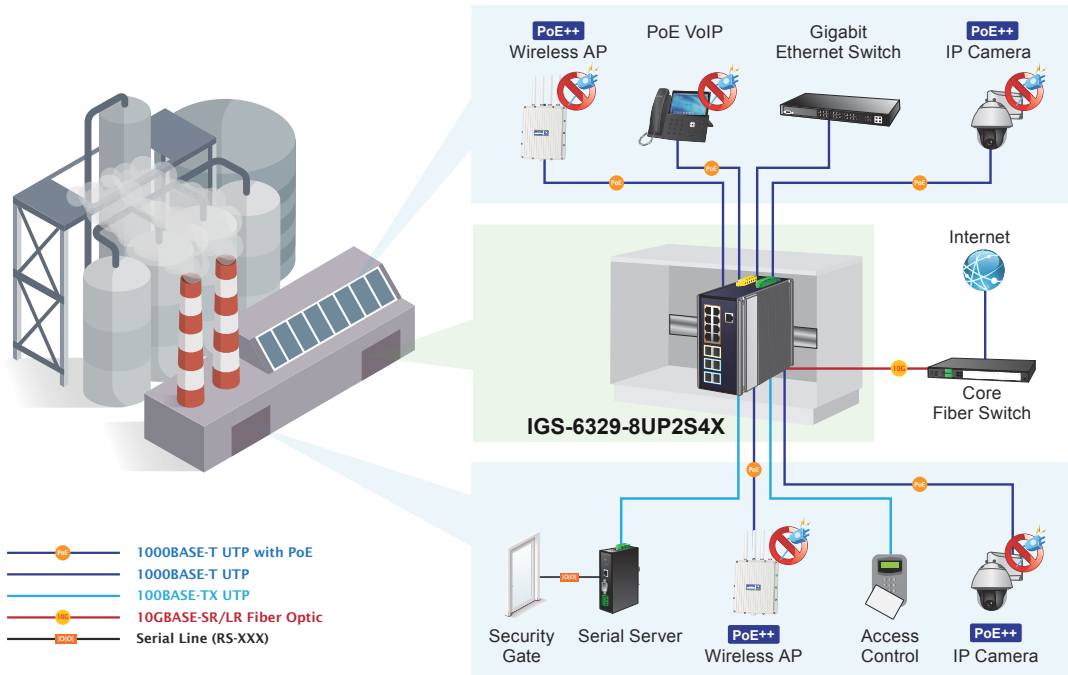
High Availability Mesh Networking Solution for Big Data System

The IGS-6329 Series features strong, rapid, self-recovery capability to prevent interruptions and external intrusions. It incorporates **ITU-T G.8032 ERPS (Ethernet Ring Protection Switching)** into customer's automation network to enhance system reliability and uptime. The IGS-6329 Series is the ideal solution for data centers, service providers and telecoms to build redundant connection and establish high bandwidth for **Big Data** server farm.

ERPS Ring for Video Transmission Redundancy

8

Specifications

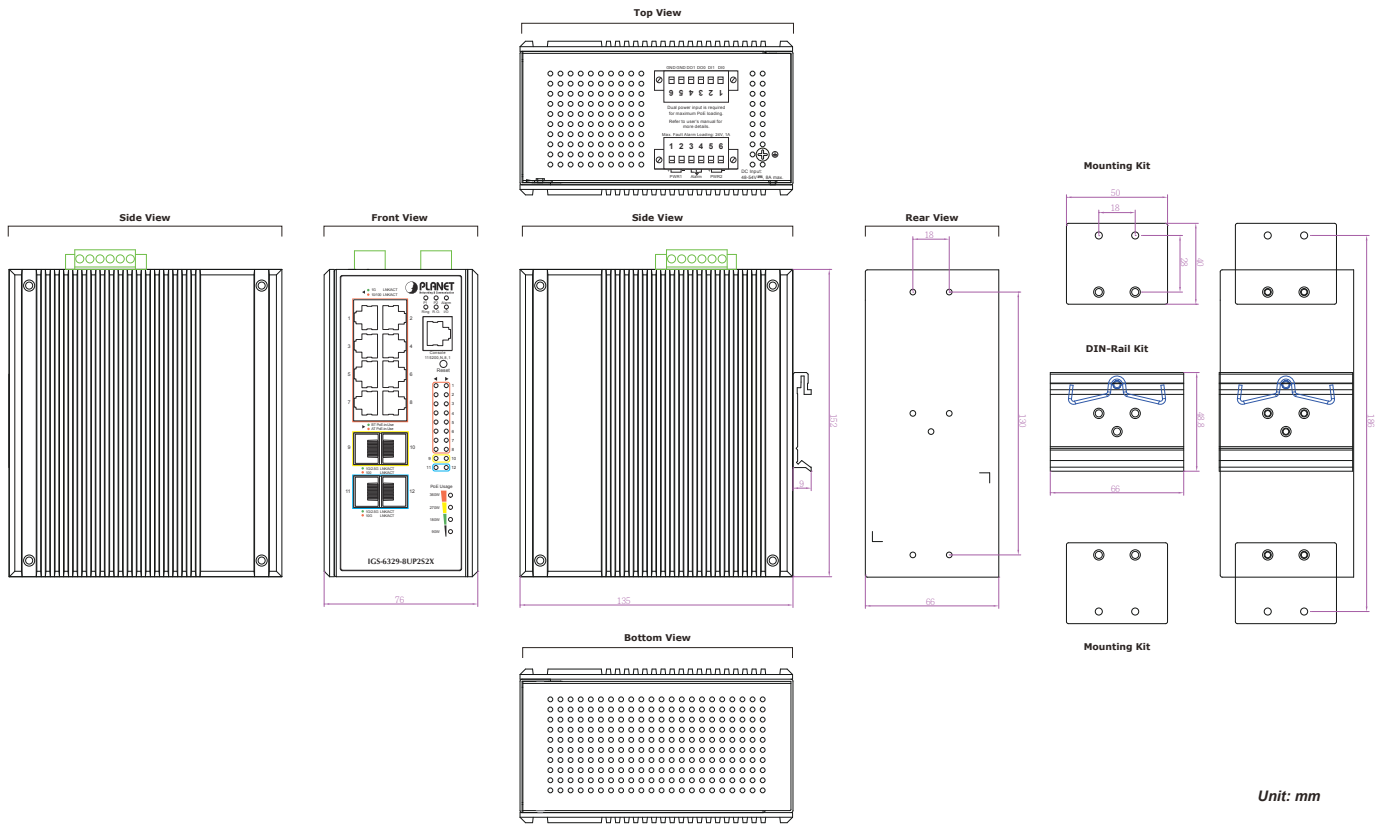| Product	IGS-6329-8UP2S2X	IGS-6329-8UP2S4X
Hardware Specifications		
Copper Ports	8 10/100/1000BASE-T RJ45 auto-MDI/MDI-X ports	
SFP Ports	2 1000BASE-SX/LX/BX SFP slot interfaces (Port-9 and Port-10) Compatible with 100BASE-FX and 2500BASE-X SFP	
SFP+ Ports	2 10GBASE-SR/LR SFP+ slot interfaces (Port-11 to Port-12) Compatible with 1000BASE-X and 2500BASE-X SFP	4 10GBASE-SR/LR SFP+ slot interfaces (Port-11 to Port-14) Compatible with 1000BASE-X and 2500BASE-X SFP
PoE Injector Ports	8 ports with 802.3bt PoE++ injector function with Port-1 to Port-8	
Console	1 x RJ45-to-RS232 serial port (115200, 8, N, 1)	
Reset Button	< 5 sec: System reboot > 5 sec: Factory default	

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
	Removable 6-pin terminal block for DI/DO interface
	    Pin 1/2 for DI 1 & 2, Pin 3/4 for DO 1 & 2, Pin 5/6 for GND	

Alarm	One relay output for power failure. Alarm relay current carry ability: 1A @ 24V DC	

Digital Input (DI)	2 digital inputs:
	    Level 0: -24~2.1V (±0.1V)
	    Level 1: 2.1~24V (±0.1V)
	    Input load to 24V DC, 10mA max.	

Digital Output (DO)	2 digital outputs: Open collector to 24VDC, 100mA	
Enclosure	IP30 aluminum case	
Installation	DIN-rail or wall mounting	
Dimensions (W x D x H)	76 x 135 x 152 mm	
Weight	1,152g	1,619g
Power Requirements	Dual DC 48~54V, 8A max. (>52V DC for 802.3bt PoE++ output recommended)	
Power Consumption	Max. 12.9 watts/44.2BTU@54V DC input (System on) Max. 415.6 watts/1425.9BTU@54V DC input (Full loading with 802.3bt PoE++ function)	Max. 12.4 watts/42.3BTU@54V DC input (System on) Max. 430 watts/1467.2BTU@54V DC input (Full loading with 802.3bt PoE++ function)
ESD Protection	Air 8KV DC Contact 6KV DC	
Surge Protection	4KV DC	

LED Indicator	**System:**
	    Power 1 (Green), Power 2 (Green), Alarm (Red)
	    Ring (Green), Ring Owner (Green), DIDO (Red)
	Per 10/100/1000T RJ45 PoE++ Port:
	    1000Mbps LNK/ACT (Green)
	    10/100Mbps LNK/ACT (Amber)
	    802.3bt PoE++-in-use x 1 (Green)
	    802.3at/af PoE-in-use x 1 (Amber)
	Per SFP Interface:
	    1G/2.5G LNK/ACT (Green)
	    100 LNK/ACT (Amber)
	Per SFP+ Port:
	    10Gbps LNK/ACT (Green)
	    1Gbps LNK/ACT (Amber)
	PoE Usage:
	    90W, 180W, 270W, 360W (Amber)	

Switching Specifications		
Switch Architecture	Store-and-Forward	
Switch Fabric	66Gbps/non-blocking	106Gbps/non-blocking
Throughput (packet per second)	49.1Mpps@ 64 bytes packet	78.8Mpps@ 64 bytes packet
Address Table	32K entries, automatic source address learning and aging	
Shared Data Buffer	32Mbits	
Jumbo Frame	10Kbytes	
SDRAM	512Mbytes	
Flash Memory	64Mbytes	
Flow Control	IEEE 802.3x pause frame for full-duplex Back pressure for half-duplex	

Power Over Ethernet	
PoE Standard	IEEE 802.3bt PoE++ Type-4 PSE Backward compatible with 802.3at PoE+ PSE
PoE Power Supply Type	■ 802.3bt ■ UPOE/POH ■ End-span ■ Mid-span ■ Force

PoE Power Output	802.3bt PoE++
	  - Per port 52V~54V DC (depending on the power supply), max. 90 watts
	UPoE(PoH)
	  - Per port 52V~54V DC (depending on the power supply), max. 95 watts
	IEEE 802.3at Standard
	  - Per port 52V~54V DC (depending on the power supply), max. 36 watts
	Force
	  - Per port 52V~54V DC (depending on the power supply), max. 60 watts

Power Pin Assignment	End-span: 1/2(-), 3/6(+) Mid-span: 4/5(+), 7/8(-) 802.3bt/UPoE: 1/2(-), 3/6(+),4/5(+), 7/8(-)
PoE Power Budget	Single power input: 240W maximum (depending on power input) - Dual power input: 360W maximum (depending on power input) *Dual power input must be the same as DC voltage, like dual 54V
PoE Ability PD @ 12.5 watts	8 units
PoE Ability PD @ 25 watts	8 units
PoE Ability PD @ 51 watts	6 units
PoE Ability PD @ 71 watts	4 units
PoE Management Functions	
Active PoE Device Detection	Yes
PoE Power Recycling	Yes, daily or predeinded schedule
PoE Schedule	4 schedule profiles
PoE Extend Mode	Yes, max. 160 to 200 meters
PoE System Management	System PoE Admin control Total PoE power budget control Auto power input and PoE budget control PoE Legacy mode Over-temperature threshold alarm PoE usage threshold alarm

PoE Port Management	Port Enable/Disable/Schedule
	PoE mode control
	  - 802.3bt
	  - UPoE
	  - 802.3at End-span
	  - 802.3at Mid-span
	Force mode
	Port Priority

Layer 2 Functions	
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 Supports up to 5 sessions
VLAN	IEEE 802.1Q tagged 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 Up to 4K VLAN groups, out of 4095 VLAN IDs

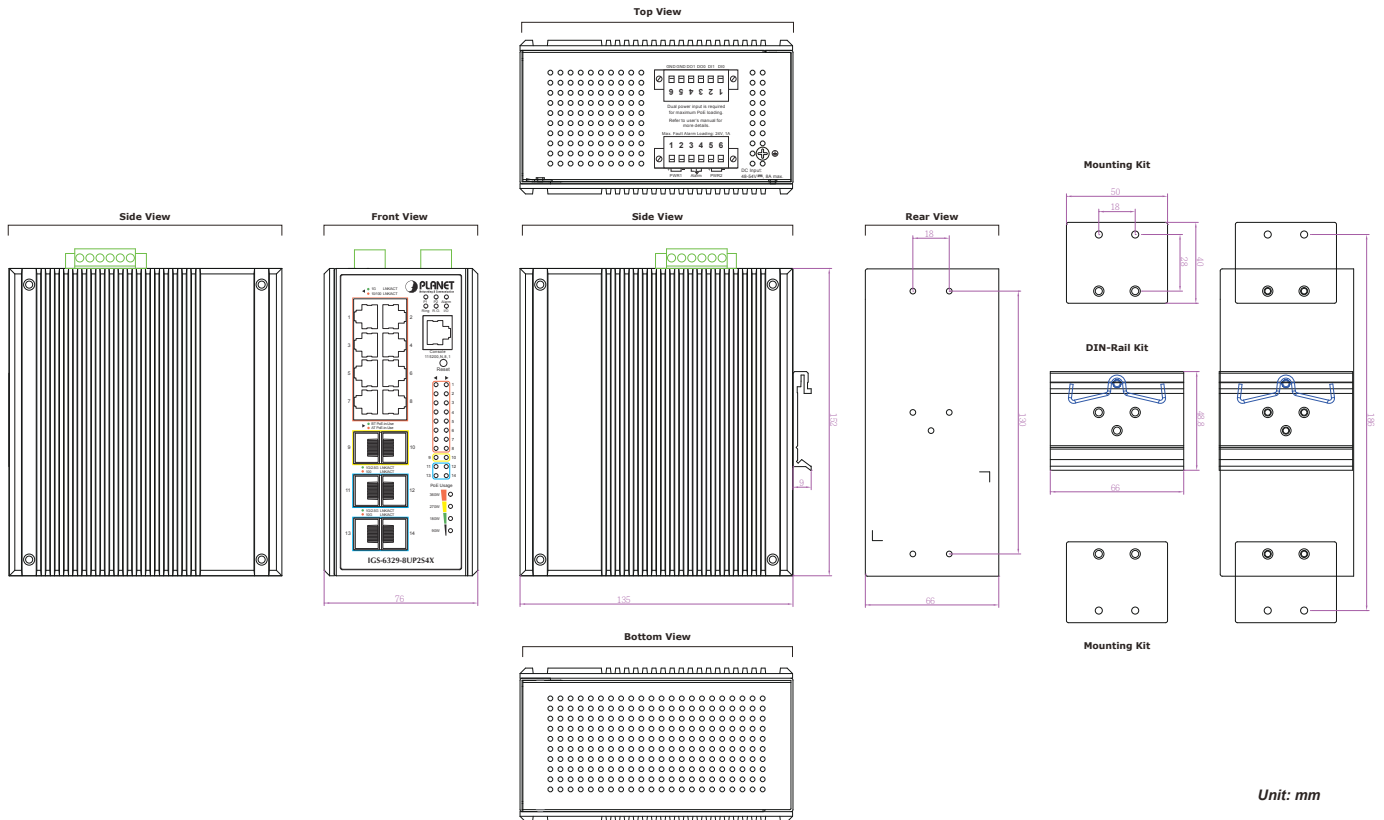|	
Link Aggregation	IEEE 802.3ad LACP/static trunk Supports 3 trunk groups with 4 ports per trunk group
Spanning Tree Protocol	IEEE 802.1D Spanning Tree Protocol IEEE 802.1w Rapid Spanning Tree Protocol IEEE 802.1s Multiple Spanning Tree Protocol
IGMP Snooping	IPv4 IGMP (v1/v2/v3) snooping IPv4 IGMP querier mode support Supports 255 IGMP groups
MLD Snooping	IPv6 MLD (v1/v2) snooping, IPv6 MLD querier mode support Supports 255 MLD groups

Bandwidth Control	Per port bandwidth control
	  Ingress: 500Kb~1000Mbps
	  Egress: 500Kb~1000Mbps

Ring	Supports ERPS, and complies with ITU-T G.8032 Recovery time < 10ms 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

Layer 3 Functions	
IP Interfaces	Max. 128 VLAN interfaces
Routing Table	Max. 128 routing entries
Routing Protocols	IPv4 hardware static routing IPv6 hardware static routing RIPv2 dynamic routing IPv4 OSPFv2 dynamic routing IPv6 OSPFv3 dynamic routing
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 256 entries

Security	Port security IP source guard Dynamic ARP inspection Command line authority control based on user level
AAA	RADIUS client TACACS+ client
Network Access Control	IEEE 802.1x port-based network access control MAC-based authentication Local/RADIUS authentication
Management Functions	
Basic Management Interfaces	Console; Telnet; Web browser; SNMP v1, v2c
Secure Management Interfaces	SSHv2, TLSv1.2, SNMPv3

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 CloudViewer app
Event Management	Remote Syslog System log SMTP
ONVIF	ONVIF device discovery ONVIF device monitoring Floor Map
SNMP MIBs	RFC 1213 MIB-II 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 2863 IF-MIB RFC 2933 IGMP-STD-MIB RFC 3411 SNMP-Frameworks-MIB RFC 4292 IP Forward MIB RFC 4293 IP MIB RFC 4836 MAU-MIB IEEE 802.1X PAE LLDP MAU-MIB Power over Ethernet MIB

Standards Conformance		

Regulatory Compliance	FCC Part 15 Class A
	CE:
	  EN 55032 , EN 55035
	  EN 61000-6-2, EN 61000-6-4	

Railway	EN50121-4, EN 50121-1	
Stability Testing	IEC 60068-2-32 (free fall) IEC 60068-2-27 (shock) IEC 60068-2-6 (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 802.3ae 10Gb/s Ethernet 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 802.3bt Power over Ethernet Plus Plus IEEE 802.3ah OAM IEEE 802.1ag Connectivity Fault Management (CFM) RFC 768 UDP RFC 793 TFTP RFC 791 IP RFC 792 ICMP RFC 2068 HTTP RFC 1112 IGMP v1 RFC 2236 IGMP v2 RFC 3376 IGMP v3 RFC 2710 MLD v1 RFC 3810 MLD v2 RFC 2328 OSPF 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

IGS-6329-8UP2S2X

Top View

Side View **Front View** **Side View** **Rear View** **Mounting Kit**

DIN-Rail Kit

IGS-6329-8UP2S2X

Bottom View

Mounting Kit

Unit: mm

IGS-6329-8UP2S4X

Top View

Side View **Front View** **Side View** **Rear View** **Mounting Kit**

DIN-Rail Kit

IGS-6329-8UP2S4X

Bottom View

Mounting Kit

Unit: mm

Ordering Information

IGS-6329-8UP2S2X	Industrial L3 8-Port 10/100/1000T 802.3bt PoE + 2-Port 1G/2.5G SFP + 2-Port 10G SFP+ Managed Ethernet Switch (-40~75 degrees C)
IGS-6329-8UP2S4X	Industrial L3 8-Port 10/100/1000T 802.3bt PoE + 2-Port 1G/2.5G SFP + 4-Port 10G SFP+ Managed Ethernet Switch (-40~75 degrees C)

Related Products

IGS-6325-8UP2S	Industrial L3 8-Port 10/100/1000T 802.3bt PoE + 2-Port 100/1000X SFP Managed Switch
IGS-6325-8UP2S2X	Industrial L3 8-Port 10/100/1000T 802.3bt PoE + 2-Port 100/1000X SFP + 2-Port 10G SFP+ Managed Switch
IGS-5225-4UP1T2S	Industrial L2+ 4-Port 10/100/1000T 802.3bt PoE + 1-Port 10/100/1000T + 2-Port 100/1000X SFP Managed Switch
IGS-5225-8P2S2X	L3 Industrial 8-Port 10/100/1000T 802.3at PoE + 2-Port 100/1000X SFP + 2-Port 10G SFP+ Managed Ethernet Switch (-40~75 degrees C)
IGS-5225-8P4S	L2+ Industrial 8-Port 10/100/1000T 802.3at PoE + 4-Port 100/1000X SFP Managed Ethernet Switch (-40~75 degrees C)
IGS-5225-8P2T2S	L2+ Industrial 8-Port 10/100/1000T 802.3at PoE + 2-Port 10/100/1000T + 2-Port 100/1000X SFP Managed Ethernet Switch (-40~75 degrees C)
IGS-5225-4P2S	L2+ Industrial 4-Port 10/100/1000T 802.3at PoE + 2-Port 100/1000X SFP Managed Ethernet Switch (-40~75 degrees C)
IGS-10020HPT	L2+ Industrial 8-Port 10/100/1000T 802.3at PoE + 2-Port 100/1000X SFP Managed Ethernet Switch (-40~75 degrees C)
IPOE-E174	1-Port 802.3bt PoE++ to 4-Port 802.3af/at Gigabit PoE Extender
IPOE-E302	Industrial IP67 1-Port 802.3bt PoE to 2-Port 802.3at Gigabit PoE Extender

Available Modules

MGB2G-Series Transceiver	2500BASE-SX/LX Transceiver
MGB-Series Transceiver	1000BASE-SX/LX Transceiver
MFB-Series Transceiver	100BASE-FX SFP Transceiver
MTB-Series Module	10BASE-LR/SR/BX/T Modules

Related Power Supply

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

IGS-6329-8UP2S2X/IGS-6329-8UP2S4X