

I(P)GS-5400-2P-PT

4 Modular Slots Industrial L2⁺ IEC61850-3 Managed (PoE) Switch

- IEC 61850-3 & IEEE1613 compliance
- High-density 28 x Gigabit Ethernet L2+ managed (PoE at/af) switch
- Support dual power redundancy AC&DC
- Enhanced G.8032 ring protection < 20ms</p>
 for single ring. Supports auto mode, enhanced mode, train mode and basic mode;
 Enhanced G.8032 ring covers multicast packets; MSTP 16MSTI /RSTP; support MRP ring
- Support LACP link aggregation, IGMP v3/router port, MLD snooping, DHCP server & DHCP Option82; DHCP Snooping, Port-based DHCP distribution, Mac-based DHCP server, QoS by VLAN, SSH v2/SSL, HTTPS, INGRESS/EGRESS ACL L2/L3, QinQ
- Protocol-based VLAN; IPv4 Subnet-based VLAN
- Support relay contact & environmental monitoring
- Miss-wiring avoidance & Node failure protection (node failure protection)
- User-friendly UI, including auto topology drawing and DDM threshold monitoring with dB values***
- MMS built-in
- Support USB dongle for automatic backup configuration



OVERVIEW

Lantech I(P)GS-5400-2P-PT is a high-performance L2 + managed industrial Ethernet switch which provides L2 wire speed and advanced security function for network aggregation and backbone deployment. It delivers ITU G.8032 enhanced ring recovery less than 20ms in single ring while also supports train ring, enhanced mode, multiple VLAN mode with easy configuration. The comprehensive QoS, QoS by VLAN, advanced security including INGRESS/EGRESS ACL L2/L3, SSH v2/SSL, Mac-based DHCP server, DHCP Option 82, DHCP server, IGMPv1/v2/v3/router port, QinQ are supported and also required in large network. It also supports Cisco Discovery Protocol (CDP) for Ciscoworks to detect the switch info and show on L2 map topology.

The highly flexible modular design consisting of maximum 24x Gigabit T+4xDual SFP,24x Giga PoE at/af (IPGS-5400-2P-PT)+4xDual SFP, 28xGigabit/100M SFP, 18x100M ST/SC + 4 Gigabit SFP covers the widest deployment of applications.

The built-in MMS server allows SCADA to control & monitor switch for data modeling.

Built-in MMS server for IEC61850 data modeling for monitoring and control

The built-in MMS (Manufacturing Messaging Specification) server can help SCADA to monitor and control switch by data

modeling. It covers system, power, port status, network configuration.

Enhanced G.8032 ring, 16 MSTI MSTP; MRP ring

Lantech I(P)GS-5400-2P-PT features enhanced G.8032 ring which can be self-healed in less than 20ms for single ring topology protection covering Multicast packets. It also supports various ring topologies that covers double ring, multi-chain (under enhanced ring), train ring, basic ring, multiple-VLAN ring and auto-ring by easy setup than others. The innovative auto-Ring configurator (auto mode) can calculate owner and neighbor in one step. It supports MSTP that allows RSTP over VLAN for redundant links with 16 MSTI.

MRP (Media Redundancy Protocol) can be supported for industrial automation networks.

Miss-wiring avoidance, Loop protection, Node failure protection

The I(P)GS-5400-2P-PT also embedded several features for stronger and reliable network protection in an easy and intuitive way. When the pre-set ring configuration failed or looped by miss-wiring, Lantech I(P)GS-5400-2P-PT is able to alert with the LED indicator and disable ring automatically. Node failure protection ensures the switches in a ring to survive after power breakout is back. The status can be shown in NMS when each





switch is back. This feature prevents the broken ring and keep ring alive without any re-configuration needed. Loop protection is also available to prevent the generation of broadcast storm when a dumb switch is inserted in a closed loop connection.

QoS by VLAN for legacy device

QoS by VLAN can allow switch to tag QoS by VLAN regardless the devices acknowledge QoS or not in which greatly enhance the bandwidth management in a network.

QinQ, QoS and GVRP supported

It supports the QinQ, QoS and GVRP for large VLAN segmentation.

IGMPv3, GMRP, router port, MLD Snooping, static

multicast forwarding and multicast Ring protection The unique multicast protection under enhanced G.8032 ring can offer immediate self-recovery instead of waiting for IGMP table timeout. It also supports IGMPv3, GMRP, router port, MLD snooping and static multicast forwarding binding by ports for video surveillance application.

802.1X security by MAC address

MAC-based port authentication is an alternative approach to 802.1x for authenticating hosts connected to a port. By authenticating based on the host's source MAC address, the host is not required to run a user for the 802.1x protocol. The RADIUS server that performs the authentication will inform the switch if this MAC can be registered in the MAC address table of switch.

Reliable network protection, node failure protection

The I(P)GS-5400-2P-PT also embedded several features for stronger and reliable network protection in an easy and intuitive way. When the pre-set ring configuration failed or looped by miss-wiring, Lantech I(P)GS-5400-2P-PT is able to alert with the LED indicator and send out an email or traps. Node failure protection ensures the switches in a ring to survive after power breakout is back. The status can be shown in NMS when each switch is back. This feature prevents the broken ring and keep ring alive without any re-configuration needed. Loop protection is also available to prevent the generation of broadcast storm when a dumb switch is inserted in a closed loop connection.

DHCP option 82 & Port based, Mac based DHCP, Option66, DHCP Snooping, IPv6 DHCP server

DHCP server can assign dedicated IP address by MAC or by port (Port based for single switch), it also can assign IP address by port for multiple switches with single DHCP option82 server. DHCP Snooping is supported. For the ending device which need to download file from TFTP server, DHCP Option66 server can offer IP address of TFTP server to DHCP client. Basic IPv6 DHCP service can be supported.

Auto-provisioning for firmware/configuration update The switch supports auto-provisioning for switch to auto-check the latest software image and configuration through TFTP server.

User-friendly GUI, Auto topology drawing

The user-friendly UI, innovative auto topology drawing and topology demo makes I(P)GS-5400-2P-PT much easier to get hands-on. The complete CLI enables professional engineer to configure setting by command line.

Editable configuration file

The configuration file of Lantech I(P)GS-5400-2P-PT can be exported and edited with word processor for the other switches configuration with ease. The factory reset button can restore the setting back to factory default. The built-in watchdog design can automatically reboot the switch when CPU is found dead.

Environmental monitoring for switch inside information

The environmental monitoring can detect switch overall temperature, total PoE load, voltage and current where can send the SNMP traps and email when abnormal.

The PoE modules support advanced PoE management including PoE detection and scheduling. PoE detection can detect if the connected PD is hang up then restart the PD; PoE scheduling is to allow pre-set power feeding schedule upon routine time table. It also supports per-port PoE status including current, voltage, watt and temperature information.

Event log & message; 2 DI + 2DO

In case of event, the I(P)GS-5400-2P-PT is able to send an email to pre-defined addresses as well as SNMP Traps out immediately. It provides 2DI and 2DO. When disconnection of the specific port was detected; DO will activate the signal LED to alarm. DI can integrate the sensors for events and DO will trigger the alarm while sending alert information to IP network with email and traps.

Various dual power conversions redundancy, high ESD protection

Lantech I(P)GS-5400-2P-PT chassis and modules are designed for easy maintenance and installation; It also supports dual power redundancies with isolated 100~240VAC/120~370VDC power conversion and isolated 16.8~137.5VDC power conversion to increase the network reliability. It also supports a terminal block for connecting DC 48V PoE power source (IPGS-5400-2P-PT).

Lantech I(P)GS-5400-2P-PT features high reliability and robustness compliant with IEC-61850-3 & IEEE 1613 withstanding extensive EMI/RFI phenomenon, ±4kV surge, inductive load switching, high ESD (±8kV contact/ ±15kV air), 4kV EFT, high fault current environment usually found in Substation, Steel automation, Mining and Process control etc. IGS-5400-2P-E can run under operational temperatures ranging from -40°C~75°C in the harsh and critical environments.

FEATURES & BENEFITS

System Interface/Performance

- IEC-61850 & IEEE1613 Compliance
- maximum 24x Gigabit T+4xSFP,24x Giga PoE at/af+4xSFP (IPGS-5400-2P), 28xGigabit/100M SFP, 18x100M ST/SC + 4 Gigabit SFP 16K MAC Address Table

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OS1 Platform Industrial IEC61850-3 Managed Switches

- Backplane: 56Gbps
- Dual isolated power conversions for 1600V DC (16.8V~137.5V)
- Dual isolated power conversions for ±3000 V (100V~240VAC/120V~370VDC)
- Rear terminal block for PoE power source (DC48V) for IPGS-5400-2P-PT
- Various modules are available incl.
 Gigabit/100M SFP; Gigabit T; PoE at/af Giga
 T(up to 30W@); 100MST/SC modules
- FAN less design
- MMS server built-in for SCADA monitoring/control
- 10KB jumbo frame supported on all ports
- User-friendly UI, Auto topology drawing, topology demo
- IP v6/v4 supported
- Enhanced G.8032 Ring protection in 20ms < 256 switches
 - Support various ring/chain topologies, including train ring
 - Enhanced G.8032 ring configuration with ease
 - Auto ring configuration(auto mode) for single ring
 - Ring covers multicast on different ports
- DDM to support SFP diagnostic function***
 - Automatically convert the raw data into dB values for TX power/RX power, making it easier to measure the fiber distance
- 256 groups MSTP over VLAN
- VLAN
 - 4K 802.1Q Vlan, Port Based VLAN, GVRP, QinQ
- Port Trunk with LACP 14 trunks with automatic link failover
- LACP link aggregation to add bandwidth
- QoS (Quality of Service)
 - Supports IEEE 802.1p CoS
 - Per port provides 8 priority queues
 - Port-base, Tag-base, and TOS Priority
 - Strict priority and WRR
- Security
 - SSL/SSH v2/ACL L2&L3
 - MAC address table: MAC address entries/Filter/MAC-Port binding
 - IP Security: IP address security management to prevent unauthorized intruders.

- Management access control with priority
- Login Security: IEEE802.1X/RADIUS
- HTTPS for secure access to the web interface

Miss-wiring avoidance

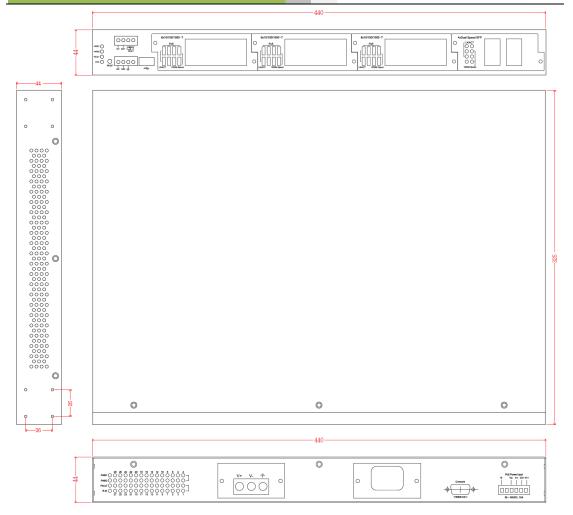
- LED indicator
 - Email or traps notification

Node failure protection

- Ensure the switches in a ring to survive after power breakout is back
- The status can be shown in NMS when each switch is back
- SNTP, NTP supported
- IGMPv1,v2,v3 with Query mode for multimedia; GMRP
- IGMP router to select another Query mode and support IGMP static routing for reversed IGMP flow to bind with port for IP surveillance application
- Supports IEEE802.1ab LLDP, Cisco CDP
- DHCP server / client / DHCP Option 82 relay / DHCP Option 82 server; Port based DHCP server; DHCP Snooping, DHCP Option 66; basic IPv6 DHCP server
- Mac based DHCP server to assign IP address
- MLD Snooping for IPv6 Multicast stream
- Bandwidth Control
 - Ingress Packet Filter and Egress Rate Limit
 - Broadcast/Multicast Packet Filter Control
- System Event Log, Email alert and SNMP Trap for alarm support
- Diagnostic including Ping / DDM information
- Environmental sensor built-in to detect temperature, voltage, current and total PoE load (IPGS-5400-2P-PT) and send out SNMP traps and emails if there is abnormal events
- TFTP/FTP Firmware upgrade
- Reset / Factory default button to restore factory setting
- Watchdog design to reboot switch if CPU is found dead
- Provides 4kV EFT protection
- Provides ±8kV (Contact) and ±15kV (Air) ESD protection
- Provides ±4kV Surge protection
- 2 DI/DO and 1 relay contact alarm
- Support USB dongle for automatic backup / easily write configuration
- Auto Provision to verify switch firmware with the latest or certain version



DIMENSIONS (unit=mm)



SPECIFICATION

Hardware Sp	ecification	Transfer Rate	14,880pps for Ethernet port
IEEE Standards	IEEE 802.3 10Base-T Ethernet		148,800pps for Fast Ethernet port
	IEEE 802.3u 100Base-TX Ethernet		1,488,000pps for Gigabit Ethernet / Gigabit Fiber
	IEEE 802.3ab 1000Base-T Ethernet		port
	IEEE 802.3z Gigabit Fiber	CPU	Marvell 800Mhz
	IEEE 802.3x Flow Control Capability	RAM	256M Byte
	ANSI/IEEE 802.3 Auto-negotiation	Flash	128M Byte
	IEEE 802.1Q VLAN	MAC Address	16K MAC address table
	IEEE 802.1p Class of Service	Jumbo frame	10KB on all ports
	IEEE 802.1X Access Control	Connectors	Max. 24 10/100/1000T RJ-45 with auto MDI/MDI-
	IEEE 802.1D Spanning Tree		X+4 SFP sockets
	IEEE 802.1w Rapid Spanning Tree		Max 28 100M Mini-GBIC : SFP sockets
	IEEE 802.1s Multiple Spanning Tree		Max 28 1000M Mini-GBIC : SFP sockets
	IEEE 802.3ad Link Aggregation Control Protocol		RS-232 console: Female DB-9
	(LACP)		USB for automatic backup and easy write up
	IEEE 802.1AB Link Layer Discovery Protocol		configuration
	(LLDP)	LED	Per unit: Power 1 (Green), Power 2 (Green),
	IEEE 802.1x User Authentication (Radius)		Alarm (Red), R.M (Green)
	IEEE 802.3af/at PoE (IPGS)		Link/Activity (Green), Full duplex/collision
Switch Architecture	Back-plane (Switching Fabric): 56Gbps		(Yellow), MINI GBIC (Link/Activity) (Green)

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OS1 Platform Industrial IEC61850-3 Managed Switches



VAC/VDC statust 4000/ 100~2600AC120-3070/CD DC loaded 1600/16.8-137.5/DC (DCI model) 1k loaded 4000/16.8-137.5/DC (DCI model) PC power consumption PC power consumptintere power PC PC power consumption PC power consumption				
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CE EN55032 Class A, CE EN55024,				Cisco Discovery Protocol for topology mapping
61850-3 Port Based VLAN IEC Contact: ± Contact: ± 61850-3 IEC Contact: ± Contact: ± 61850-3 IEC 61850-3 IEE 61000-42 8 kV, Arr. HE EEE 61000-43 Signal: 4 kV V/m V/m IEC 220VAC: Power: 4 kV; Suports IEEE802.10 Spanning Tree with 16 MSTI IEC 220VAC: Power: 4 kV; IEE Suports IEEE802.10 Spanning Tree with 16 MSTI IEC DC power: Ine to line: ± 2 kV; Line to earth: ± 2 kV Class of Service Support IEEE802.10 Av (e1375-3-4 G1000-4-5 1 kV; Line to earth: ± 2 kV Class of Service Support IPeM MUlticast stream Signal: Line to line: ± 2 kV; Line to earth: ± 4 kV Support IPeM MUlticast stream Signal: Line to line: ± 2 kV; Line to earth: ± 4 kV Support IPPM MUlticast stream IEC 61000-4-5 Signai: 10V Support IPPM MUlticast stream Login Security Support 1PPM MUlticast stream Support 1PPM MUlticast stream IEC 61000-6-5 Support 1PPM MUlticast stream Support 10 IP addresses that have permiss access the switch management and to prevunauthoticast ory 2.2 kor Management				ambient temperature to be shown in GUI and
IEC Contact: ± Contact: ± Contact: ± Contact: ± IEEE 802.10 Tag VLAN (256 entries)/ VLAI (Up to 4K, VLAN (10 can be assigned from 1 4096) IEC 80 to 3000 80 to 1000 GVRP, QinQ, Protocol-based VLAN; IPv4 IEC 80 to 3000 80 to 1000 GVRP, QinQ, Protocol-based VLAN; IPv4 IEC 2004C: Power: 4 kV; Gittoo-4.4 Subports IEEE802.10 Spanning Tree and IEEE802.10 Spanning Tree, IEEE802 IEC 220VAC: Power: 4 kV; Gittoo-4.4 Class of Service Supports IEEE802.10 Spanning Tree, IEEE802 G1000-4.5 1 kV; Line to earth: ±2 kV AC power: Ine to line: ± Class of Service Supports IEEE802.10 class of service, per provides B proirty queues KV; Line to earth: ±4 kV Signal: Line to line: ± Class of Service Support 10 Padfresses that have permiss CS 1600-4.4 Signal: 10V Support 10 Padfresses that have permiss access the switch management and to prevunauthorized intruders. CE EN61000-6.2 CE Ne1000-6.5 SUL 21.3 SUL 21.3 SUL 23.3 SUL 23.3 MTBF 572.361trs IEC 60068-26: 2007 (Vibration) IEC 60068-26: 2007 (Vibration) IEC 60068-26: 2007 (Vibration) IEC 60068-26: 2007 (Vibration) IEC 60068-26: 2007 (Vibration)				sent alerting if any abnormal status(-M model)
61000-4-2 6 kV, Air: 8 kV, Air: ESD 38 kV ±15 kV IEC 80 to 3000 80 to 1000 61000-4-3 MHz: 10 MHz: 20 V/m V/m V/m IEC 220VAC: Power: 4 kV; 61000-4-4 Signal: 4 kV EFT 48VDC: Power: 4 kV; 61000-4-5 Signal: 4 kV BEC DC power: Line to line: ± 0.100-4-6 Signal: 1 kV Surge A C power: Line to line: ± 2 kV; Line to earth: ±4 kV Signal: Line to line: ± VK, Line to earth: ±4 kV Signal: Line to line: ± VK, Line to earth: ±4 kV Signal: Line to line: ± VK, Line to earth: ±4 kV Signal: Line to line: ± VK, Line to earth: ±4 kV Signal: Line to line: ± VK, Line to earth: ±4 kV Signal: Line to line: ± REC 61000-4-8 PFMF Support 10 P6 Multicast stream IEC 61000-4-8 PFMF Support 10 Pa addresses that have permiss BC E N61000-6-5 Support 10 Pa addresses that have permiss Stability Testing IEC 60006-2-6 (2007 (Vibration) IEC 60006-2-6 (2007 (Vibration) IEC 60			VLAN	
IEC 80 to 3000 80 to 1000 61000-4-3 MHz: 10 Witz Witz Subnet-based VLAN RS V/m V/m Subnet-based VLAN RS 220VAC: Power: 4 kV Bignal: 4 kV EFT 48VDC: Power: 4 kV BEE802.1 w Rapid Spanning Tree and IEEE802.1 w Rapid Spanning Tree with 16 MSTI IEC DC power: Line to line: ± AC power: Line to line: ± 61000-4-5 1 kV; Line to earth: ±2 kV Signal: Line to line: ± Support IEC 220VAC: Power: 10V; Signal: 10V Login Security Support IP/6 Multicast stream Login Security Support 10 P addresses that have permiss access the switch management and to prevunationized intruders. IEC 61000-4-1 Signal: 10V Support 10 P addresses control with priority packet" Network Security Support 10 IP addresses that have permiss access to switch management and to prevunationized intruders. B1200-4-6 Signal: 10V Support 10 P addresses control with priority lingress/Egress ACL 12/L3 SU SEN SNU 2 for Management Support 10 P addresses control with priority lingress/Egress ACL 12/L3 SU SSNU 2 for Management SU SAN 2 for Management access to the web interfa MAC filter Stability Testing IEC 60068				(Up to 4K, VLAN ID can be assigned from 1 to
61000-4-3 RS MHz: 10 V/m MHz: 20 V/m Subnet-based VLAN RS V/m V/m Supports IEEE802.1d Spanning Tree and IEEE802.1w Rapid Spanning Tree, IEEE800.1d Spanning Tree with 16 MSTI IEC DC power: Line to line: ± 4 WDC: Power: Line to line: ± 2 kV; Line to earth: ±4 kV Signal: Line to line: ± 2 kV; Line to earth: ±4 kV Class of Service Support IEEE802.1d Class of service, per pt provides 8 priority queues MLD Snooping Support IEE602.1x Authentication/RADIL V, Line to earth: ±4 kV Support 10 P addresses that have permiss access the switch management and to prev unauthorized intruders. IEC 61000-4-8 Signal: 10V CE EN61000-6-2 CE EN61000-6-2 Support 10 P addresses that have permiss access the switch management and to prev unauthorized intruders. MTBF 572,361 hrs F72,361 hrs MTBF 572,361 hrs IGMP Stability Testing IEC 60068-2-6: 2007 (Vibration) IEC 60068-2-27; 2008 (Shock) IGMP Safety EN IEC 62368-1 IGMP Support IGMP snooping 1,v2,v3; Supports IGMP flow with multicast groups; IG router port ; IGMP quey; GMRP, QinQ, QO VLAN Power Automation IEC 61850-3, IEEE 1613, IEC 60255-5 Static MAC-Port bridge Static multicast forward reverseer				
IEC220VAC: Power: 4 kV; Signal: 4 kV61000-4-4Signal: 4 kVEFT48VDC: Power: 4 kVIECDC power: Line to line: ± 4 kV, Line to earth: ±2 kVSurgeAC power: Line to line: ± 2 kV; Line to earth: ±4 kVSurgeSupport IPC6 Multicast streamLick220VAC: Power: 10 to earth: ±4 kVSignal: Line to line: ± 2 kV; Line to earth: ±4 kVSignal: Line to line: ± 2 kV; Line to earth: ±4 kVBCC220VAC: Power: 10V; 61000-4-661000-4-6Signal: 10V 48VDC: Power: 10V; EC 61000-6-4IEC220VAC: Power: 10V; 61000-4-4IEC 61000-4-8Signal: 10V 48VDC: Power: 10V; EC 61000-6-4IEC 61000-6-5Signal: 10V 48VDC: Power: 10V;IEC 61000-6-5Signal: 10V 48VDC: Power: 10V;IEC 61000-6-5Signal: 10V 48VDC: Power: 10V;IEC 61000-6-5Signal: 10V 48VDC: Power: 10V;IEC 61000-6-6Signal: 10V 48VDC: Power: 10V;IEC 61000-6-7Signal: 10V 48VDC: Power: 10V;IEC 61000-6-8Signal: 10V 48VDC: Power: 10V;IEC 61000-6-5Signal: 10V 48VDC: Power: 10V;IEC 60068-2-6: 2007 (Vibration) IEC 60068-2-27: 2008 (Shock)IEC 61850-3, IEEE 1613, IEC 60255-5SafetyEN IEC 61850-3, IEEE 1613, IEC 60255-5Varranty5 yearsSoftware ShootificationSoftware ShootificationSoftware ShootificationSoftware Shootification		61000-4-3 MHz: 10 MHz: 20	-	Subnet-based VLAN
61000-4-4 Signal: 4 kV Multiple Spanning Tree with 16 MSTI EFT 48VDC: Power: Line to line: ± The quality of service determined by port / C 1EC DC power: Line to line: ± The quality of service determined by port / C Surge 2 kV; Line to earth: ±2 kV AC power: Line to line: ± 2 kV; Line to earth: ±4 kV Support IEEE802.17 class of service, per porvides 8 priority queues 2 kV; Line to earth: ±4 kV Support IEEE802.17 class of service, per porvides 8 priority queues 2 kV; Line to earth: ±4 kV Support IEEE802.17 class of service, per porvides 8 priority queues 1 kV; Line to earth: ±4 kV Support 10 IP addresses that have permissis 1 k00-4-6 Signal: 10V CS 48VDC: Power: 10V 1 EC 61000-4-8 PFMF EC 61000-6-2 CE EN61000-6-2 Set be 80100-6-2 CE EN61000-6-5 MTBF 572,361hrs HTTPS for secure access to the web interfat MAC filter IGMP IGMP subport IGMP snooping v1,v2,v3; Supports IGMP snooping v1,v2,v3; Suports IGMP snooping v1,v2,v3; Suports IGMP snooping v1,			RSTP/MSTP	
IEC 61000-4-5DC power: Line to line: ± 1 KV; Line to earth: ±2 kV AC power: Line to line: ± 2 kV; Line to earth: ±4 kV Signal: Line to line: ± 2 kV; Line to earth: ±4 kV Signal: Line to line: ±2 kV; Line to earth: ±4 kV Signal: Line to line: ±2 kV; Line to earth: ±4 kV EEC 61000-4-6 Signal: 10V EEC 61000-4-8 PFMF EEC 61000-4-8 PFMF EEC 61000-4-1 DIPs CE EN61000-6-2 CE EN61000-6-5ToS / VLAN / 61375-3-4 Class of ServiceClass of Service Support 1Pv6 Multicast stream Login SecurityMTBF572,361hrsMLD Snooping Support 10Ps (EE 60068-2-67: 2007 (Vibration) IEC 60068-2-27: 2008 (Shock)With and agement access to the web interfat MAC filterMTBF572,361hrsIEC 60068-2-27: 2008 (Shock)IGMPSupport 10MP snooping v1,v2,v3; Supports Static MAC-Port Ingress/Egress ACL L2/L3MTBF572,361hrsIEC 60068-2-27: 2008 (Shock)IGMPSupport 10MP snooping v1,v2,v3; Supports Builticast forwarding forward reversed v2 for ulticast provers; IGMP query; GMRP, QinQ, QO VLANPower AutomationIEC 61850-3, IEEE 1613, IEC 60255-5 S yearsStatic MAC-Port bridgeStatic multicast forwarding forward reversed bridge		61000-4-4 Signal: 4 kV		
61000-4-5 Surge1 kV; Line to earth: ±2 kV AC power: Line to line: ± 2 kV; Line to earth: ±4 kV Signal: Line to line: ± 2 kV; Line to earth: ±4 kVClass of ServiceSupport IEEE802.1p class of service, per pr provides 8 priority queuesIEC 61000-4-6 61000-4-6 CS 61000-4-8 CE EN61000-6-2220VAC: Power: 10V; Signal: 10V Signal: 10V CE EN61000-6-2Support IPV6 Multicast stream Login SecuritySupport IPV6 Multicast stream Login SecurityIEC 61000-4-8 CE EN61000-6-2220VAC: Power: 10V; Signal: 10V CE EN61000-6-2Support 10 IP addresses that have permissi access the switch management and to prev unauthorized intruders. 802.1X access control for port-based and M based authentication/MAC-Port binding Management access control with priority Ingress/Egress ACL L2/L3 SSL/SSH v2 for Management HTTPS for secure access to the web interfa MAC filterMTBF572,361hrsIEC 60068-2-6: 2007 (Vibration) IEC 60068-2-27: 2008 (Shock)IGMPSafetyEN IEC 62368-1IGMP snooping v1,v2,v3; Supports IGMP snooping v1,v2,v3; Supports IGMP query; GMRP, QinQ, QO VLANPower AutomationIEC 61850-3, IEEE 1613, IEC 60255-5 VarrantyStatic MAC-Port bridgeWarranty5 years			Quality of Service	The quality of service determined by port / CoS / ToS / VLAN / 61375-3-4
Attraction 2 kV; Line to earth: ±4 kV Signal: Line to line: ±2 kV; Line to earth: ±4 kV Signal: Line to earth: ±4 kV Support IPv6 Multicast stream Login Security Support IPv6 Multicast stream Login Security Support 3 mirroring types: "RX, TX and Bott packet" Network Security Support 10 IP addresses that have permissi access the switch management and to prevunauthorized intruders. IEC 61000-4-8 PFMF IEC 61000-4-11 DIPs CE EN61000-6-2 Support 10 IP addresses that have permissi access the switch management and to prevunauthorized intruders. CE EN61000-6-4 CE EN61000-6-4 CE EN61000-6-5 Signal: 10V Stability Testing IEC 60068-2-6: 2007 (Vibration) IEC 60068-2-6: 2007 (Vibration) IEC 60068-2-6: 2007 (Vibration) IEC 61850-3, IEEE 1613, IEC 60255-5 MAC filter Railway verification IEC 61850-3, IEEE 1613, IEC 60255-5 Warranty 5 years Software Specification Static MAC-Port Static multicast			Class of Service	Support IEEE802.1p class of service, per port
Signal: Line to line: ±2 Supports IEEE802.1X Authentication/RADIL Login Security Supports IEEE802.1X Authentication/RADIL IEC 220VAC: Power: 10V; 61000-4-6 Signal: 10V CS 48VDC: Power: 10V; IEC 61000-4-8 PFMF Support 0 IP addresses that have permiss IEC 61000-4-8 PFMF Support 10 IP addresses that have permiss IEC 61000-6-2 Support 10 IP addresses that have permiss CE EN61000-6-2 MTBF 572,361hrs MTBF 572,361hrs IEC 60068-2-6: 2007 (Vibration) IEC 60068-2-6: 2007 (Vibration) IEC 60068-2-6: 2007 (Vibration) IEC 60068-2-7: 2008 (Shock) IGMP Safety EN IEC 62368-1 Railway verification EN50121-4 Power Automation IEC 61850-3, IEEE 1613, IEC 60255-5 Warranty 5 years			MLD Spooning	
IEC 6100-4-6 CS220VAC: Power: 10VSupport 3 mindle gypes. KX, 1X and But packet"IEC 61000-4-6 CSSignal: 10V 48VDC: Power: 10VSupport 3 mindle gypes. KX, 1X and But packet"IEC 61000-4-8 CSSignal: 10V 48VDC: Power: 10VSupport 30 mindle gypes. KX, 1X and But packet"IEC 61000-4-8 CE EN61000-6-1FMF IEC 61000-4-11 DIPsSupport 30 mindle gypes. KX, 1X and But packet"CE EN61000-4-9 CE EN61000-6-2Railwork SecuritySupport 10 IP addresses that have permissi access the switch management and to prev unauthorized intruders. 802.1X access control for port-based and M based authentication/MAC-Port binding Management access control with priority Ingress/Egress ACL L2/L3 SSL/ SSH v2 for Management HTTPS for secure access to the web interfa MAC filterMTBF572,361hrsSupport IGMP snooping v1,v2,v3; Supports IGMP static route; 256 multicast groups; IGI router port ; IGMP query; GMRP, QinQ, QO VLANPower AutomationIEC 61850-3, IEEE 1613, IEC 60255-5 WarrantyStatic MAC-Port bridgeWarranty5 yearsStatic MAC-Port bridge		Signal: Line to line: ±2		Supports IEEE802.1X Authentication/RADIUS
61000-4-6 CS Signal: 10V 48VDC: Power: 10V IEC 61000-4-8 PFMF IEC 61000-4-11 DIPs Support 10 IP addresses that have permiss access the switch management and to prev unauthorized intruders. 802.1X access control for port-based and M based authentication/MAC-Port binding Management access control with priority Ingress/Egress ACL L2/L3 SSL/ SSH v2 for Management MTBF 572,361hrs Stability Testing IEC 60068-2-6: 2007 (Vibration) IEC 60068-2-6: 2007 (Vibration) IEC 60068-2-6: 2007 (Vibration) IEC 60068-2-6: 2007 (Vibration) IEC 60068-2-7: 2008 (Shock) Safety EN IEC 62368-1 Railway verification Power Automation IEC 61850-3, IEEE 1613, IEC 60255-5 Warranty Static MAC-Port Warranty 5 years			Port Mirror	Support 3 mirroring types: "RX, TX and Both
Image: CS 48VDC: Power: 10V IEC 61000-4-8 PFMF access the switch management and to prevunauthorized intruders. IEC 61000-4-11 DIPs 802.1X access control for port-based and M CE EN61000-6-2 Management access control with priority CE EN61000-6-4 Management access control with priority CE EN61000-6-5 Management access control with priority MTBF 572,361hrs Stability Testing IEC 60068-2-6: 2007 (Vibration) IEC 60068-2-27: 2008 (Shock) Safety EN IEC 62368-1 Railway verification ENS0121-4 Power Automation IEC 61850-3, IEEE 1613, IEC 60255-5 Warranty 5 years Software Specification Static MAC-Port Warranty 5 years		61000-4-6 Signal: 10V	Network Security	Support 10 IP addresses that have permission to
IEC 61000-4-11 DIPs 802.1X access control for port-based and M CE EN61000-6-2 Mased authentication/MAC-Port binding CE EN61000-6-4 Management access control with priority Ingress/Egress ACL L2/L3 SSL/ SSH v2 for Management MTBF 572,361hrs Stability Testing IEC 60068-2-6: 2007 (Vibration) IEC 60068-2-27: 2008 (Shock) IGMP Safety EN IEC 62368-1 Railway verification ENS0121-4 Power Automation IEC 61850-3, IEEE 1613, IEC 60255-5 Varranty 5 years Software Specification Static MAC-Port Static MAC-Port Static multicast forwarding forward reversed IGMP flow with multicast packets binding v ports for IP surveillance application				access the switch management and to prevent unauthorized intruders.
CE EN61000-6-4 Management access control with priority CE EN61000-6-5 Management access control with priority MTBF 572,361hrs Stability Testing IEC 60068-2-6: 2007 (Vibration) IEC 60068-2-27: 2008 (Shock) IGMP Safety EN IEC 62368-1 Railway verification ENS0121-4 Power Automation IEC 61850-3, IEEE 1613, IEC 60255-5 Warranty 5 years Software Specification Static MAC-Port bridge IGMP flow with multicast packets binding v				802.1X access control for port-based and MAC-
CE EN61000-6-5 Ingress/Egress ACL L2/L3 MTBF 572,361hrs SSL/ SSH v2 for Management Stability Testing IEC 60068-2-6: 2007 (Vibration) HTTPS for secure access to the web interfa MAC filter IEC 60068-2-6: 2007 (Vibration) IGMP Safety EN IEC 62368-1 IGMP static route; 256 multicast groups; IGI router port; IGMP query; GMRP, QinQ, QO VLAN Power Automation IEC 61850-3, IEEE 1613, IEC 60255-5 Static MAC-Port Warranty 5 years Static MAC-Port Software Specification Specification				
MTBF 572,361hrs SSL/ SSH ½ for Management Stability Testing IEC 60068-2-6: 2007 (Vibration) HTTPS for secure access to the web interfa MAC filter IEC 60068-2-27: 2008 (Shock) IGMP Safety EN IEC 62368-1 IGMP static route; 256 multicast groups; IGI router port; IGMP query; GMRP, QinQ, QO VLAN Power Automation IEC 61850-3, IEEE 1613, IEC 60255-5 Static MAC-Port Warranty 5 years Static multicast forwarding forward reversed IGMP flow with multicast packets binding v ports for IP surveillance application				Ingress/Egress ACL L2/L3
Stability Testing IEC 60068-2-6: 2007 (Vibration) IEC 60068-2-27: 2008 (Shock) MAC filter Safety EN IEC 62368-1 IGMP Support IGMP snooping v1,v2,v3; Supports IGMP static route; 256 multicast groups; IG router port; IGMP query; GMRP, QinQ, QO VLAN Power Automation IEC 61850-3, IEEE 1613, IEC 60255-5 Static MAC-Port bridge Static multicast forwarding forward reversed IGMP flow with multicast packets binding v ports for IP surveillance application	MTBF			-
Safety EN IEC 62368-1 Railway verification EN50121-4 Power Automation IEC 61850-3, IEEE 1613, IEC 60255-5 Varranty 5 years Software Specification Software Specification				MAC filter
Salety EN IEC 6256-1 Railway verification EN50121-4 Power Automation IEC 61850-3, IEEE 1613, IEC 60255-5 Static MAC-Port Static multicast forwarding forward reversed bridge IGMP flow with multicast packets binding v ports for IP surveillance application			IGMP	Support IGMP snooping v1,v2,v3; Supports
Power Automation IEC 61850-3, IEEE 1613, IEC 60255-5 Static MAC-Port Static multicast forwarding forward reversed bridge Warranty 5 years bridge IGMP flow with multicast packets binding v ports for IP surveillance application				router port ; IGMP query; GMRP, QinQ, QOS by
Warranty 5 years bridge IGMP flow with multicast packets binding v ports for IP surveillance application			Static MAC-Port	
Software Specification ports for IP surveillance application				IGMP flow with multicast packets binding with
Bandwidth Control Support ingress packet filter and egress pac		-	-	ports for IP surveillance application
Management SNMP v1 v2c, v3/ Web/Telnet/CLI limit.	•		Bandwidth Control	
SNMP MIB MIB The egress rate control supports all of pack	SNMP MIB			The egress rate control supports all of packet
MIBII type. SNMP MIB Ingress filter packet type combination rules.				type. Ingress filter packet type combination rules are
Bridge MIB Broadcast/Multicast/Flooded Unicast packet		Bridge MIB		Broadcast/Multicast/Flooded Unicast packet,
IF MIB Broadcast/Multicast packet, Broadcast pack RMON MIB only and all types of packet.				Broadcast/Multicast packet, Broadcast packet only and all types of packet.
				The packet filter rate can be set an accurate

Datasheet Version 6.22 www.lantechcom.tw | info@lantechcom.tw RP-001-26 A0

OS1 Platform Industrial IEC61850-3 Managed Switches



	value through the pull-down menu for the ingress	DHCP	Provide DHCP Client/ DHCP Server/DHCP
	packet filter and the egress packet limit.		Option 82/Port-based DHCP; DHCP Option 66;
RTC	Built-in Real Time Clock to keep track of time		DHCP Snooping, basic IPv6 DHCP server
	always	Mac-based DHCP	Assign IP address by Mac
Flow Control	Supports Flow Control for Full-duplex and Back	Server	
	Pressure for Half-duplex	DNS	Provide DNS client feature
System Log	Supports System log record and remote system	Diagnostic	Support Ping and DDM information
	log server(RFC3164)	SNTP	Supports Dual NTP server to synchronize
Relay Alarm	Provides one relay output for port breakdown,		system clock in Internet
	power fail and alarm.	Firmware Update	Supports TFTP firmware update, TFTP backup
	Alarm Relay current carry ability: 1A @ DC24V		and restore; HTTP firmware upgrade
Protection	Miss-wiring avoidance	Configuration backup	Supports text configuration file for system quick
	Node failure protection	& restore	installation
	Loop protection		N-key** for mass firmware auto-backup, editable
SNMP Trap	Up to 10 trap stations; trap types including:		restoration and auto-upgrade
	Device cold start		USB port to upload/download firmware by USB
	 Authorization failure 		dongle
	Port link up/link down	Auto Provision	To verify switch firmware with the latest or
	DI/DO open/close		certain version
	Typology change(ITU ring)		*Future Release
	Power failure		
	Environmental abnormal		**Optional
			***Optional DDM SFP required

ORDERING INFORMATION

IGS-5400-2P-PT-HV-E......P/N: 8388-1001TEL
 4 Modular Slots L2 plus Industrial IEC-61850 Switch Chassis
 Built-in 1x isolated AC/DC 100~240VAC/120V~370VDC power conversion + 1x isolated DC 16.8~137.5VDC power supply; - 40°C to 75°C

■ IGS-5400-2P-PT-DCI-E......P/N: 8388-1183 4 Modular Slots L2 plus Industrial Switch IEC 61850-3 Chassis

Built-in 1x isolated DC 16.8~137.5VDC power supply + 1x optional power socket; -40 $^\circ$ C to 75 $^\circ$ C

- IPGS-5400-2P-PT-HV-E.......P/N: 8388-1301
 4 Modular Slots L2 plus Industrial IEC 61853-3 PoE Switch Chassis
 Built-in 1x isolated AC/DC 100~240VAC/120V~370VDC power conversion + 1x optional power socket + 1x 48VDC PoE power input; -40°C to 75°C
- IPGS-5400-2P-PT-DCI-E......P/N: 8388-1384
 4 Modular Slots L2 plus Industrial Switch Chassis
 Built-in 1x isolated DC 16.8~137.5VDC power supply + 1x optional power socket + 1x 48VDC PoE power input; -40°C to 75°C

Modules for Slot 1-3 Note: the modules will be factory pre-installed.

- 8xGIGA T Module.....P/N: 8380-1055 8x 10/100/1000T Module; -40°C to 75°C
- 8xGIGA T-PoE at/af Module.....P/N: 8380-1145 8x 10/100/1000T PoE at/af Module; -40°C to 75°C
- 8x SFP Module.....P/N: 8380-1065
 8x Dual Speed SFP module for 100M SFP or Gigabit SFP; -40°C to 75°C
- 4x GIGA T + 4x SFP Module......P/N: 8380-1075
 4x 10/100/1000T + 4 x 100/1000M Dual Speed SFP Module ; -40°C to 75°C

Modules for Slot 4 Note: the modules will be factory pre-installed.

4x SFP Module......P/N: 8380-1155
 4x Dual Speed SFP module for 100M SFP or Gigabit SFP; -40°C to 75°C

OPTIONAL ACCESSORIES

Power

EOTH000701

Isolation Power 100-240VAC, 120-370VDC 2.0A max, 47-63HZ



EOTH000708 Power Input Module 16.8-137.5VDC







EOTH000709

Isolation Power 100-240VAC, 120-370VDC 2.0A max, 47-63HZ



DIN Rail Power

8330-168-V1

8330-060-V1

8330-065-V1

8330-061-V1

8330-197-V1

B330-198-V1

B330-195-V1

B330-196-V1

8330-188-V1

8330-189-V1

8330-186-V1

NDR-480 Ser	480W Single Output Industrial Din Rail Power; 90-	264VAC / 127-370VDC	Input Range; Cooling by free air convection; RoHS2 ;
	Operating Temp20°C~70°C (ambient, derating e	ach output at 2.5% per o	degree from 50°C ~ 70°C)
NDR-240 Ser	ies 240W Single Output Industrial Din Rail Power; 90-	264VAC / 127-370VDC	Input Range; Cooling by free air convection; RoHS2 ;
	Operating Temp20°C~70°C (ambient, derating e	ach output at 2.5% per o	legree from 50°C ~ 70°C)
NDR-120 Ser	120W Single Output Industrial Din Rail Power; 90-264VAC / 127-370VDC Input Range; Cooling by free air convection; RoHS2 ;		
	Operating Temp20°C~70°C (ambient, derating e	ach output at 2.5% per o	legree from 50°C ~ 70°C; For 115VAC, please refer to
	derating curve on NDR-120 Series datasheet)		
NDR-75 Serie	NDR-75 Series 75W Single Output Industrial Din Rail Power; 90-264VAC / 127-370VDC Input Range; Cooling by free air convection		put Range; Cooling by free air convection; RoHS2 ;
	Operating Temp20°C~70°C (ambient, derating e	ach output at 2.5% per o	degree from 50°C ~ 70°C; For 115VAC, please refer to
	derating curve on NDR-120 Series datasheet)		
Mini GBIC (S	FP)		
8330-162-V1	MINI GBIC 1000SX (LC/MM/0.5KM) Transceiver	8330-187-V1	1.25Gbps BiDi SFP 20KM Transceiver (WDM 1550)
8330-163-V1	MINI GBIC 1000SX2 (LC/MM/2KM) Transceiver	8330-180-V1	1.25Gbps BiDi SFP 40KM Transceiver (WDM 1310)
8330-165-V1	MINI GBIC 1000LX (LC/SM/10KM) Transceiver	8330-182-V1	1.25Gbps BiDi SFP 40KM Transceiver (WDM 1550)
8340-0591-V1	MINI GBIC 1000LHX (LC/SM/40KM) Transceiver	8330-181-V1	1.25Gbps BiDi SFP 60KM Transceiver (WDM 1310)
8330-166-V1	MINI GBIC 1000XD (LC/SM/50KM) Transceiver	8330-183-V1	1.25Gbps BiDi SFP 60KM Transceiver (WDM 1550)
8330-169-V1	MINI GBIC 1000XD (LC/SM/60KM) Transceiver	8330-184-V1	1.25Gbps BiDi SFP 80KM Transceiver (WDM 1490)
8330-167-V1	MINI GBIC 1000ZX (LC/SM/80KM) Transceiver	8330-185-V1	1.25Gbps BiDi SFP 80KM Transceiver (WDM 1550)
8330-170-V1	MINI GBIC 1000EZX (LC/SM/120KM) Transceiver	8330-071-V1	125Mbps BiDi SFP 2KM (WDM 1310) Transceiver

1.25Gbps BiDi SFP 10KM Transceiver (WDM 1550)	8330-191-V1	Dual Speed SFP 100M/1000M-LX 10KM Transceiver
1.25Gbps BiDi SFP 10KM Transceiver (WDM 1310)	8330-085-V1	125Mbps BiDi SFP 80KM (WDM 1550) Transceiver
1.25Gbps BiDi SFP 2KM Transceiver (WDM 1550)	8330-084-V1	125Mbps BiDi SFP 80KM (WDM 1310) Transceiver
1.25Gbps BiDi SFP 2KM Transceiver (WDM 1310)	8330-083-V1	125Mbps BiDi SFP 60KM (WDM 1550) Transceiver
1.25Gbps BiDi SFP 0.5KM Transceiver (WDM 1550)	8330-081-V1	125Mbps BiDi SFP 60KM (WDM 1310) Transceiver
1.25Gbps BiDi SFP 0.5KM Transceiver (WDM 1310)	8330-082-V1	125Mbps BiDi SFP 40KM (WDM 1550) Transceiver
MINI GBIC 100Base (LC/SM/30KM) Transceiver	8330-080-V1	125Mbps BiDi SFP 40KM (WDM 1310) Transceiver
MINI GBIC 100Base (LC/MM/5KM) Transceiver	8330-068-V1	125Mbps BiDi SFP 20KM (WDM 1550) Transceiver
MINI GBIC 100Base (LC/MM/2KM) Transceiver	8330-069-V1	125Mbps BiDi SFP 20KM (WDM 1310) Transceiver
MINI GBIC 10/100/1000T (100m) Transceiver	8330-072-V1	125Mbps BiDi SFP 2KM (WDM 1550) Transceiver
WINN GDIC TOUDEZA (LC/SIW/TZURIVI) Transceiver	= 0330-07 I-V I	12010005 BIDI SEE ZRIVI (VVDIVI 1310) Haliscelvei

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