

## IGS-A804SM-8PH & IGS-A804SM-8PH24

- ◀ 8x GbE RJ45 + 4x 100M/1G/2.5G SFP with 8x PoE 240W, 48VDC
- ▶ 8x GbE RJ45 + 4x 100M/1G/2.5G SFP with 8x PoE 180W, 24/48VDC

**NEW**

- ◆ Compliant with the IEC 62443-4-2\* industrial cybersecurity standards
- ◆ Supports  $\mu$ -Ring, ERPS, APS, MRP, MSTP, RSTP, STP for Redundant Cabling
- ◆ Auto Checking and Auto Reset When PoE PD Fail
- ◆ EN50121-4, EN61000-6-2, EN61000-6-4, CE and FCC Certified
- ◆ 4KV Surge Protection for PoE, RJ45 and SFP Ports
- ◆ Supports Secure Boot



The industrial cyber-hardened managed PoE switch IGS-A804SM-8PH is one of our new generation designs and comes with 8 gigabit UTP ports, each complies with IEEE802.3af/at up to 30W PoE+ standard. Equipped with 4 100M/1G/2.5G SFP slots for fiber optic connectivity meet the requirements for extended transmission distance, fanless design, high MTBF, 4KV surge protection and supports wide temperature operation, 48VDC redundant power input, and is designed to comply with cybersecurity regulations. Suitable for heavy-duty applications in harsh environments such as industrial factory automation, data centers, smart transportation systems, military and utility market applications beyond environmental conditions commercial product specifications.

### Features

- 48VDC (44~57VDC) redundant dual power input (IGS-A804SM-8PH)
- 24/48VDC (20~57VDC) redundant dual power input (IGS-A804SM-8PH24)
- Provides 8-port IEEE 802.3af / 802.3at PoE+ output (30W per port, total 240W) (IGS-A804SM-8PH)
- Provides 8-port IEEE 802.3af / 802.3at PoE+ output (30W per port, total 180W) (IGS-A804SM-8PH24)
- Provides 5 ring instances that each can support  $\mu$ -Ring,  $\mu$ -Chain or Sub-Ring type for flexible uses. Supports up to 5 rings in one device (Please see CTC  $\mu$ -Ring white paper for more details and more topology application)
- $\mu$ -Ring for redundant cabling, recovery time<20ms in 250 devices
- Supports EMS Management

### Specifications

Standard	IEEE 802.3	10Base-T 10Mbit/s Ethernet
	IEEE 802.3u	100Base-TX, 100Base-FX, Fast Ethernet
	IEEE 802.3ab	1000Base-T Gbit/s Ethernet over twisted pair
	IEEE 802.3z	1000Base-X Gbit/s Ethernet over Fiber-Optic
	IEEE 802.3cb	2.5GBase-X
	IEEE 802.3af	PoE (Power over Ethernet)
	IEEE 802.3at	PoE+ (Power over Ethernet enhancements)
	IEEE 802.1D	STP (Spanning Tree Protocol)
	IEEE 802.1W	RSTP (Rapid Spanning Tree Protocol)
	IEEE 802.1S	MSTP (Multiple Spanning Tree Protocol)
	ITU-T G.8032 / Y.1344	ERPS (Ethernet Ring Protection Switching)
	ITU-T G.8031 / Y.1342	APS (Automatic Protection Switching)
	IEEE 802.1Q	Virtual LANs (VLAN)
	IEEE 802.1X	Port based and MAC based Network Access Control, Authentication

# Industrial Managed GbE PoE Switch



Standard	IEEE 802.3ac	Max frame size extended to 1522Bytes			
	IEEE 802.3ad	Link aggregation for parallel links with LACP (Link Aggregation Control Protocol)			
	IEEE 802.3x	Flow control for Full Duplex			
	IEEE 802.1ad	Stacked VLANs, Q-in-Q			
	IEEE 802.1p	LAN Layer 2 QoS/CoS Protocol for Traffic Prioritization			
	IEEE 802.1ab	Link Layer Discovery Protocol (LLDP)			
Switch Architecture	Back-Plane (Switching Fabric): 36Gbps (Full Wire-Speed)				
Forwarding Rate	26.7Mpps				
Data Processing	Store and Forward				
Flow Control	IEEE 802.3x for full duplex mode Back pressure for half duplex mode				
Network Connector	8x 10/100/1000Base-T RJ-45 + 4x 100M/1G/2.5G SFP				
	RJ-45 UTP port supports Auto negotiation speed, Auto MDI/MDI-X function				
	SFP port supports 100M/1G/2.5G speed with DDMI				
Storage Port	USB type A				
Console Port	USB type C				
PoE Standard & RJ-45 Pin Assignment	8x IEEE 802.3af /IEEE 802.3at 2 pairs PoE, PoE+, 30W/port End-Span, Alternative A mode. Positive (V+) : RJ-45 pin 1, 2. Negative (V-) : RJ-45 pin 3, 6.				
Network Cable	UTP/STP Cat. 5e cable or above				
	EIA/TIA-568 100-ohm (100meter)				
Protocols	CSMA/CD				
Reverse Polarity Protection	Supported for power input				
Overload Current Protection	Supported				
CPU Watch Dog	Supported				
Power Supply	IGS-A804SM-8PH Redundant Dual power input (Removable terminal block) 48VDC (44~57VDC) (50~57V input is recommended for IEEE802.3at PoE+ applications)				
	IGS-A804SM-8PH24 Redundant Dual DC 24/48V (20~57VDC) Power input (Removable Terminal Block) Built-in very high efficiency booster(94~97%) to rise up 54VDC for PoE output Regulated PoE output voltage (54VDC) to stabilize PoE device, and guarantee delivery PoE power distance to 100 meter				
Power Consumption	IGS-A804SM-8PH				
	Input Voltage	Total Power Consumption	Device Power Consumption	PoE Budget	
	50VDC	265W	21W	240W	
	IGS-A804SM-8PH24				
	Input Voltage	Total Power Consumption	Device Power Consumption	PoE Budget	Boost Efficiency
	24VDC	205W	21W	180W	97%
	48VDC	206W	21W	180W	97%
PoE Power Budget	Maximum PoE Output power budget 30W/port, Total 240W (IGS-A804SM-8PH)				
	Maximum PoE Output power budget 30W/port, Total 180W (IGS-A804SM-8PH24)				
LED	System: Power 1 (Green), Power 2 (Green), Alarm (Amber), CPU Act (Green), Ring Master (Green)				
	UTP: 10/100 Link/Active (Green), 1000 Link/Active (Amber)				
	SFP Slot: 100M/1G Link/Active (Green), 2.5G Link/Active (Amber)				
	PoE: ON (Green)				
Jumbo Frame	10KB				
MAC Address Table	16K				
Memory Buffer	12Mb for packet buffer				
Device Memory	4G Bytes eMMC, 2G Bytes RAM				
Warning Message	System Syslog, SMTP/ e-mail event message, alarm relay				
Alarm Relay Contact	Relay outputs with current carrying capacity of 1A @24VDC				
Removable Terminal Block	Provides 1 terminal block for Alarm relay, redundant power PWR1 and PWR2				
Operating Temperature	-10 ~ 60°C (IGS-A804SM-8PH, IGS-A804SM-8PH24)				
	-40 ~ 75°C (IGS-A804SM-8PHE, IGS-A804SM-8PHE24)				
Operating Humidity	5% to 95% (Non-condensing)				

# Industrial Managed GbE PoE Switch

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<b>Storage Temperature</b>	-40 ~ 85°C
<b>Housing</b>	Rugged Metal, IP30 Protection, Fanless
<b>Dimensions</b>	106 x 72 x 152mm (D x W x H)
<b>Weight</b>	1,230g (IGS-A804SM-8PH)
	1,240g (IGS-A804SM-8PH24)
<b>Installation Mounting</b>	DIN Rail mounting or wall mounting (Optional)
<b>MTBF (MIL-HDBK-217)</b>	301,421 (IGS-A804SM-8PH)
	289,420 (IGS-A804SM-8PH24)
<b>Warranty</b>	5 years
<b>Certification</b>	
<b>Industrial Cybersecurity</b>	IEC 62443-4-1, IEC 62443-4-2*
<b>EMC</b>	CE (EN55032, EN55035)
<b>EMI (Electromagnetic Interference)</b>	FCC Part 15 Subpart B Class A, CE
<b>Railway Traffic</b>	EN50121-4
<b>Immunity for Heavy Industrial Environment</b>	EN61000-6-2
<b>Emission for Heavy Industrial Environment</b>	EN61000-6-4
<b>EMS (Electromagnetic Susceptibility) Protection Level</b>	EN61000-4-2 (ESD) Level 3, Criteria B
	EN61000-4-3 (RS) Level 3, Criteria A
	EN61000-4-4 (Burst) Level 3, Criteria A
	EN61000-4-5 (Surge) Level 3, Criteria B
<b>EMS (Electromagnetic Susceptibility) Protection Level</b>	EN61000-4-6 (CS) Level 3, Criteria A
	EN61000-4-8 (PFMF, Magnetic Field) Field Strength: 300A/m, Criteria A
<b>Safety</b>	UL 61010-2-201, EN62368-1
<b>Surge Protection</b>	4KV for PoE, UTP and Fiber ports
<b>Shock</b>	IEC 60068-2-27
<b>Freefall</b>	IEC 60068-2-31
<b>Vibration</b>	IEC 60068-2-6

\*Future release

## Software Specifications

Topology	
<b>VLAN</b>	IEEE 802.1q VLAN, up to 4094 802.1Q VLAN ID
	IEEE 802.1q VLAN, up to 4094 Groups
	IEEE 802.1ad Q-in-Q
	MAC-based VLAN, up to 256 entries
	IP Subnet-based VLAN, up to 128 entries
	Protocol-based VLAN (Ethernet, SNAP, LLC), up to 128 entries
	VLAN Translation, up to 256 entries
	Private VLAN for port isolation
	GVRP (GARP VLAN Registration Protocol)
	MVR (Multicast VLAN Registration )
	Voice VLAN
<b>Link Aggregation (Port Trunk)</b>	Static (Hash with SA, DA, IP, TCP/UDP port), up to 6 trunk group
	Dynamic (IEEE 802.3ad LACP), up to 6 trunk group
<b>Spanning Tree</b>	IEEE 802.1D STP, IEEE 802.1W RSTP, IEEE 802.1S MSTP
<b>MRP (IEC62439-2)</b>	Supported
<b>Multiple μ-Ring</b>	Up to 5 instances that each supports μ-Ring, μ-Chain or Sub-Ring type for flexible uses, and maximum up to 5 Rings
	Recovery time <20ms
	The maximum number of device is allowed 250 nodes in a Ring.
<b>Loop Protection</b>	Supported

# Industrial Managed GbE PoE Switch



<b>ITU-T G.8032 / Y.1344 ERPS (Ethernet Ring Protection)</b>	Recovery time <50ms
	Single Ring, Sub-Ring, Multiple ring topology network
<b>ITU-T G.8031 / Y.1342 EPS (Ethernet Protection Switching)</b>	Supported
<b>QoS Features</b>	
<b>Class of Service</b>	IEEE 802.1p 8 active priorities queues for per port
<b>Traffic Classification QoS</b>	IEEE 802.1p based CoS, IP Precedence based CoS, IP DSCP based CoS QCL (QoS Control List): Frame Type, Source/Destination MAC, VLAN ID, PCP, DEI, Protocol, Source IP, IP Fragment, DSCP, TCP/UDP port number
<b>Bandwidth Control for Ingress</b>	100~1,000,000 when the "Unit" is "kbps", and 1~1,000 when the "Unit" is "Mbps"
<b>Bandwidth Control for Egress</b>	100~1,000,000 when the "Unit" is "kbps", and 1~1,000 when the "Unit" is "Mbps"
	Per queue / Port shaper
<b>DiffServ (RF 2474) Remarking</b>	
<b>Storm Control</b>	For Unicast, Broadcast and Multicast
<b>IP Multicasting Features</b>	
<b>IGMP / MLD Snooping</b>	IGMP Snooping v1, v2, v3 / MLD Snooping v1, v2
	Port Filtering Profile
	Throttling
	Fast Leave
	Maximum Multicast Group : up to 1022 entries
	Query / Static Router Port
<b>Security Features</b>	
<b>IEEE 802.1X</b>	Port-Based
	MAC-Based
<b>ACL</b>	Number of rules : up to 256 entries for L2 / L3 / L4 L2 : Mac address SA/DA/VLAN L3: IP address SA/DA, Subnet L4: TCP/UDP
<b>RADIUS</b>	Authentication & Accounting
<b>TACACS+</b>	Authentication, Authorization and Accounting
<b>HTTPS, HTTP</b>	Supported
<b>SSL / SSH v2</b>	Supported
<b>User Name Password Authentication</b>	Local Authentication
	Remote Authentication (via RADIUS / TACACS+)
<b>Management Interface Access Filtering</b>	Web, Telnet / SSH, CLI USB console
<b>Management Features</b>	
<b>CLI</b>	Cisco® like CLI
<b>Web UI</b>	Supported
<b>Telnet</b>	Server
<b>SNMP</b>	V1, V2c, V3
<b>sFlow</b>	Supported
<b>Modbus/TCP</b>	Supports for management and monitoring
<b>SW &amp; Configuration Upgrade</b>	SFTP, TFTP, HTTPS, HTTP, FTP
	Redundant firmware in case of upgrade failure
<b>FTP Client</b>	Supports for upload/download configuration
<b>RMON</b>	RMON I (1, 2, 3, 9 group), RMON II
<b>MIB</b>	RFC1213 MIB II, Private MIB
<b>UPnP</b>	Supported
<b>DHCP v4</b>	Server, Client, Relay, Relay option 82, Snooping
<b>ARP Inspection</b>	Supported
<b>IP Source Guard</b>	Supported
<b>Port Mirroring</b>	Supported
<b>Event Syslog</b>	Syslog server (RFC3164) (Support 4 server)

**Warning Message** System syslog, e-mail, alarm relay

**DNS** Client, Proxy

**NTP V4.0, SNTP** Client

**LLDP** Link Layer Discovery Protocol  
(IEEE 802.1ab) LLDP-MED

## IPv6 Features

**IPv6 Management** Telnet Server/ICMP v6

**SNMP over IPv6** Supported

**HTTP over IPv6** Supported

**SSH over IPv6** Supported

**IPv6 Telnet** Supported

**IPv6 NTP, SNTP** Client

**IPv6 TFTP** Supported

**IPv6 QoS** Supported

**IPv6 ACL** Number of rules: up to 256 entries  
for L2 / L3 / L4  
L2 : Mac address SA/DA/VLAN  
L3: IP address SIP, Subnet (32bit)  
L4: TCP/UDP

**IPv6 Source Guard** Supported

**DHCP v6** Relay, Snooping

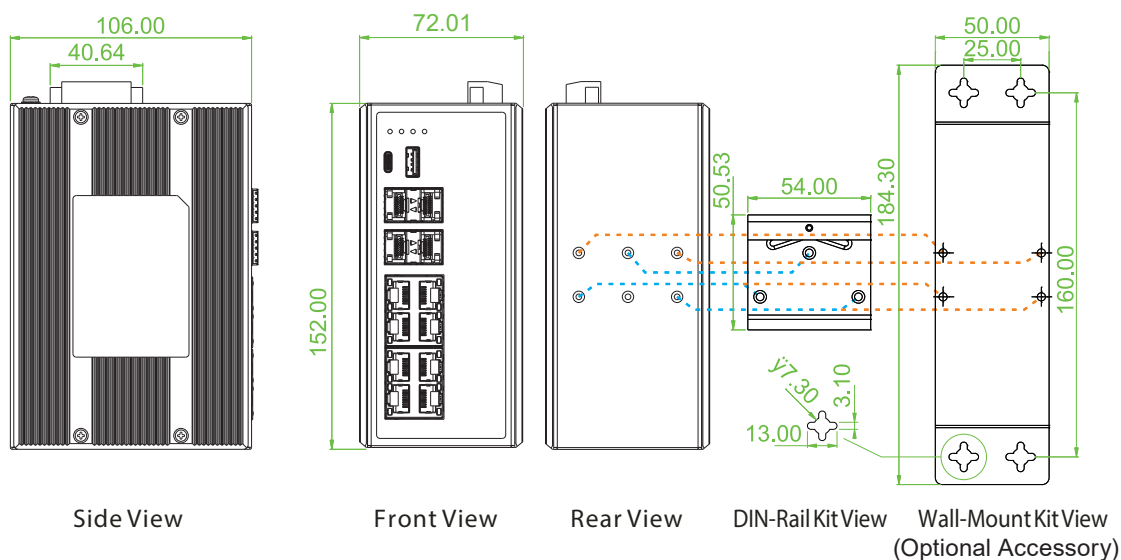
## Others Features

**Green Ethernet** Determine the cable length and lowering the power for ports with short cables  
Lower the power for a port when there is no link

## Advanced PoE

**Management** PoE PD failure auto checking, and auto reset when PD fail  
PoE port on/off weekly scheduling  
PoE Configuration  
PoE Enable/Disable  
Power limit by classification  
Power feeding priority  
Total PoE power budget limitation: maximum 240W (IGS-A804SM-8PH)  
Total PoE power budget limitation: maximum 180W (IGS-A804SM-8PH24)

## Dimensions



## Ordering Information

Model Name	Total Port	RJ45	SFP	PoE		Power Input	Certification			Operating Temperature
		10/100/1000 Base-T(X)	100M/1G/2.5G	IEEE802.3 at/af	Power Budget	Redundant	EN50121-4	EN61000-6-2 EN61000-6-4	CE FCC	
IGS-A804SM-8PH	12	8	4	8	240W	48VDC	V	V	V	-10~60°C
IGS-A804SM-8PHE	12	8	4	8	240W	48VDC	V	V	V	-40~75°C
IGS-A804SM-8PH24	12	8	4	8	180W	24/48VDC	V	V	V	-10~60°C
IGS-A804SM-8PHE24	12	8	4	8	180W	24/48VDC	V	V	V	-40~75°C

## Optional Accessories

### ■ Auto Backup Kit

BUK1-USB	Backup kit for USB Type-C Console Managed Switch
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### ■ Wall Mount Kit

IND-WMK02	Wall Mount kit for Industrial product (Wide) (184 x 50mm)
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### ■ Industrial SFP Transceiver

The ISFP series of industrial grade SFP modules have been fully tested with all CTC Union industrial grade Ethernet switches for guaranteed compatibility and performance. Best performance can be guaranteed, even in mission-critical applications. (Please see CTC Union's Industrial SFP datasheets for more items and detailed information.)

ISFP-M7000-85-D(E)	Industrial SFP GbE 1000Base-SX, M/M, 500 meter, wave length 850nm, 7.5dB, LC, DDML, -10~70°C (-40~85°C)
ISFP-S7020-31-D(E)	Industrial SFP 1000Base-LX, S/M, 20km, wave length 1310nm, 15dB, LC, DDML, -10~70°C (-40~85°C)
ISFP-T7T00-00-(E)	Industrial SFP 10/100/1000Base-T UTP 100meter, -10~70°C (-40~85°C)
ISFP-M5002-31-D(E)	Industrial SFP 155M 100Base-FX, MM, 2km, wave length 1310nm, 12dB, LC, DDML, -10~70°C (-40~85°C)
ISFP-S5030-31-D(E)	Industrial SFP 155M 100Base-FX, SM, 30km, 1310nm, 19dB, LC, DDML, -10~70°C (-40~85°C)

### ■ Industrial Power Supply

NDR-480-48	Industrial Power, Input 90 ~ 264VAC/127 ~ 370VDC, Output 48VDC, 480W, -20 ~ 70°C
XDR-240E-48	Industrial Power, Input 85 ~ 264VAC/120 ~ 370VDC, Output 48VDC, 240W, -40 ~ 70°C
XDR-480E-48	Industrial Power, Input 85 ~ 264VAC/120 ~ 370VDC, Output 48VDC, 480W, -40 ~ 70°C