

# Industrial Managed GbE PoE Switch

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## IGS+803SM-8PH & IGS+803SM-8PH24

CTC<sup>®</sup>  
union

- ◀ 8x GbE RJ45 + 3x 100/1000Base-X SFP with 8x PoE 240W, 48VDC
- ▶ 8x GbE RJ45 + 3x 100/1000Base-X SFP with 8x PoE 180W, 24/48VDC

- » Supports IEEE 1588 PTP V2
- » Supports u-Ring, ERPS, EPS, MSTP, RSTP, STP for Redundant Cabling
- » Auto Checking and Auto Reset When PoE PD Fail
- » UL60950-1, EN60950-1, EN62368-1, EN50121-4, NEMA-TS2, EN61000-6-2, EN61000-6-4, CE and FCC Certified
- » 4KV Surge Protection for PoE, RJ45 and SFP Ports



UL60950-1



The industrial PoE Ethernet switches IGS+803SM-8PH and IGS+803SM-8PH24 has 8 Gigabit UTP ports and each port complies with the IEEE802.3af/at up to 30W PoE+ standard. Equipped with 3 100/1000 SFP slots for fiber optic connections to meet the requirements for extended transmission distance, fanless design, high MTBF, 4KV surge protection and supports wide operating temperature, redundant power input, of 48VDC IGS+803SM-8PH and 24/48VDC IGS+803SM-8PH24, suitable for heavy-duty applications in harsh environments, such as industrial factory automations, data centers, intelligent transportation systems, military and utility market applications where environmental conditions exceed commercial product specifications.

### Features

- 48VDC (46~57VDC) redundant dual power input (IGS+803SM-8PH)
- 24/48VDC (20~57VDC) redundant dual power input (IGS+803SM-8PH24)
- Provides 8-port IEEE 802.3af / 802.3at PoE+ output (30W per port, total 240W) (IGS+803SM-8PH)
- Provides 8-port IEEE 802.3af / 802.3at PoE+ output (30W per port, total 180W) (IGS+803SM-8PH24)
- Cable diagnostics, identifies opens/shorts distance
- 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<10ms 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 802.3af	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	EPS (Ethernet Protection Switching)
	IEEE 802.1Q	Virtual LANs (VLAN)
	IEEE 802.1X	Port based and MAC based Network Access Control, Authentication

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<b>Standard</b>	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)			
	IEEE 802.3az	EEE (Energy Efficient Ethernet)			
<b>Switch Architecture</b>	Back-Plane (Switching Fabric): 22Gbps (Full Wire-Speed)				
<b>Data Processing</b>	Store and Forward				
<b>Flow Control</b>	IEEE 802.3x for full duplex mode Back pressure for half duplex mode				
<b>Network Connector</b>	8x 10/100/1000Base-T RJ-45 + 3x 100/1000Base-X SFP				
	RJ-45 UTP port supports Auto negotiation speed, Auto MDI/MDI-X function				
	SFP port supports 100/1000 dual speed with DDMI				
<b>Console</b>	RS-232 (RJ-45)				
<b>PoE Standard &amp; RJ-45 Pin Assignment</b>	8x IEEE 802.3af /IEEE 802.3a 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.				
<b>Network Cable</b>	UTP/STP Cat. 5e cable or above				
	EIA/TIA-568 100-ohm (100meter)				
<b>Protocols</b>	CSMA/CD				
<b>Reverse Polarity Protection</b>	Supported for power input				
<b>Overload Current Protection</b>	Supported				
<b>CPU Watch Dog</b>	Supported				
<b>Power Supply</b>	<b>IGS+803SM-8PH</b> Redundant Dual input power (Removable terminal block) 48VDC (44~57VDC) (50~57V input is recommended for IEEE802.3at PoE+ applications)				
	<b>IGS+803SM-8PH24</b> Redundant Dual DC 24/48V (20~57VDC) Input power (Removable Terminal Block) Built-in very high efficiency booster(94~97%) to rise up 52VDC for PoE output Regulated PoE output voltage (52VDC) to stabilize PoE device, and guarantee delivery PoE power distance to 100 meter				
<b>Power Consumption</b>	<b>IGS+803SM-8PH</b>				
	<b>Input Voltage</b>	<b>Total Power Consumption</b>	<b>Device Power Consumption</b>	<b>PoE Budget</b>	
	50 VDC	255.5W	15.5W	240W	
	<b>IGS+803SM-8PH24</b>				
	<b>Input Voltage</b>	<b>Total Power Consumption</b>	<b>Device Power Consumption</b>	<b>PoE Budget</b>	<b>Boost Efficiency</b>
	24VDC	194.2W	10.8W	180W	97%
48VDC	196W	11.5W	180W	97%	
<b>PoE Power Budget</b>	Maximum PoE Output power budget 30W/port, Total 240W (IGS+803SM-8PH)				
	Maximum PoE Output power budget 30W/port, Total 180W (IGS+803SM-8PH24)				
<b>LED</b>	System: Power 1 (Green), Power 2 (Green), Fault (Amber), CPU Act (Green), Ring Master (Yellow)				
	UTP: 10/100 Link/Active (Green), 1000 Link/Active (Amber)				
	SFP Slot: Link/Active (Green)				
	PoE: ON (Green)				
<b>Jumbo Frame</b>	9.6KB				
<b>IEEE802.3ac</b>	Max frame size extended to 1522Bytes (allow Q-tag in packet)				
<b>MAC Address Table</b>	8K				
<b>Memory Buffer</b>	512K Bytes for packet buffer				
<b>Device Memory</b>	16M Bytes Flash ROM, 128M Bytes RAM				
<b>Warning Message</b>	System Syslog, SMTP/ e-mail event message, alarm relay				
<b>Alarm Relay Contact</b>	Relay outputs with current carrying capacity of 1A @24VDC				
<b>Removable Terminal Block</b>	Provides 1 terminal block for Alarm relay, redundant power PWR1 and PWR2				
<b>Operating Temperature</b>	-10 ~ 60°C (IGS+803SM-8PH, IGS+803SM-8PH24)				
	-40 ~ 75°C (IGS+803SM-8PHE, IGS+803SM-8PHE24)				

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<b>Operating Humidity</b>	5% to 95% (Non-condensing)
<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>	0.85kg (IGS+803SM-8PH) 0.86kg (IGS+803SM-8PH24)
<b>Installation Mounting</b>	DIN Rail mounting or wall mounting (Optional)
<b>MTBF (MIL-HDBK-217)</b>	487,189 Hours (IGS+803SM-8PH) 528,753 Hours (IGS+803SM-8PH24)
<b>Warranty</b>	5 years
<b>Certification</b>	
<b>EMC</b>	CE (EN55024, EN55032)
<b>EMI (Electromagnetic Interference)</b>	FCC Part 15 Subpart B Class A, CE
<b>Railway Traffic</b>	EN50121-4
<b>Traffic Control</b>	NEMA TS2
<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>	UL60950-1, EN60950-1, EN62368-1
<b>Surge Protection</b>	4KV for PoE, UTP and Fiber ports
<b>Shock</b>	IEC 60068-2-27
<b>Freefall</b>	IEC 60068-2-32
<b>Vibration</b>	IEC 60068-2-6

## 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 (Ethernt, SNAP, LLC), up to 128 entries VLAN Translation, up to 256 entries 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 5 trunk group Dynamic (IEEE 802.3ad LACP), up to 5 trunk group
<b>Spanning Tree</b>	IEEE 802.1D STP, IEEE 802.1w RSTP, IEEE 802.1s MSTP
<b>Multiple <math>\mu</math>-Ring</b>	Up to 5 instances that each supports $\mu$ -Ring, $\mu$ -Chain or Sub-Ring type for flexible uses, and maximum up to 5 Rings Recovery time <10ms The maximum number of device is allowed 250 nodes in a Ring.
<b>Loop Protection</b>	Supported

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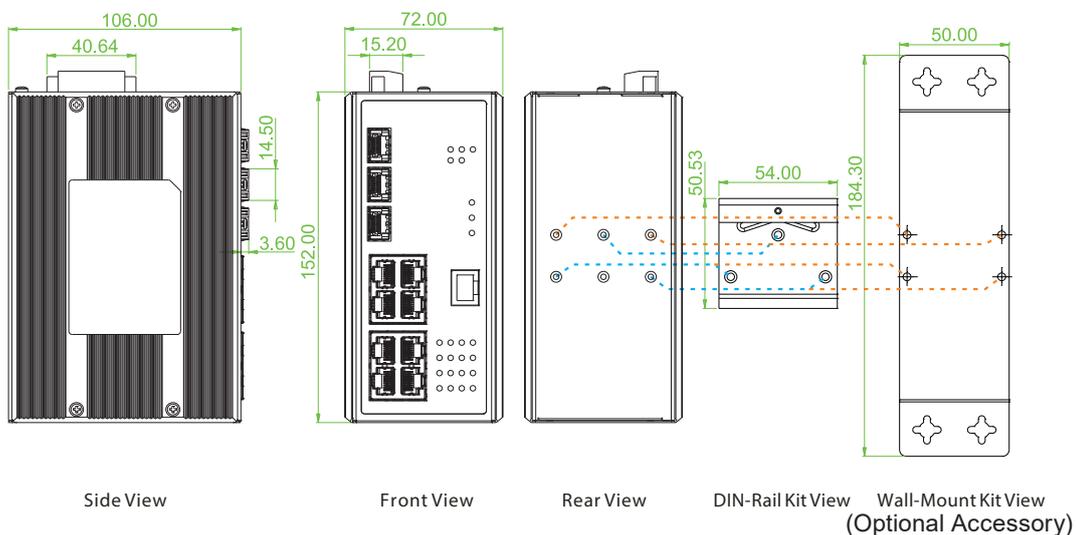
ITU-T G.8032 / Y.1344 ERPS (Ethernet Ring Protection)	Recovery time <50ms Single Ring, Sub-Ring, Multiple ring topology network
ITU-T G.8031 / Y.1342 EPS (Ethernet Protection witching)	Supported
<b>QoS Features</b>	
Class of Service	IEEE 802.1p 8 active priorities queues for per port
Traffic Classification QoS	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 QCE (QoS Control Entry):
Bandwidth Control for Ingress	100~1,000,000 when the "Unit" is "kbps", and 1~1,000 when the "Unit" is "Mbps"
Bandwidth Control for Egress	100~1,000,000 when the "Unit" is "kbps", and 1~1,000 when the "Unit" is "Mbps" Per queue / Port shaper
DiffServ (RF 2474) Remarking	
Storm Control	For Unicast, Broadcast and Multicast
<b>IP Multicasting Features</b>	
IGMP / MLD Snooping	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>	
IEEE 802.1X	Port-Based MAC-Based
ACL	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
RADIUS	Authentication & Accounting
TACACS+	Authentication
HTTPS, HTTP	Supported
SSL / SSH v2	Supported
User Name Password Authentication	Local Authentication Remote Authentication (via RADIUS / TACACS+)
Management Interface Access Filtering	Web, Telnet / SSH, CLI RS-232 console
<b>Management Features</b>	
CLI	Cisco® like CLI
Web UI	Supported
Telnet	Server
SNMP	V1, V2c, V3
sFlow	Supported
Modbus/TCP	Supports for management and monitoring
SW & Configuration Upgrade	TFTP, HTTP Redundant firmware in case of upgrade failure
FTP client	Supports for upload/download configuration
RMON	RMON I (1, 2, 3, 9 group), RMON II
MIB	RFC1213 MIB II, Private MIB
UPnP	Supported
BOOTP	Supported
DHCP	Server, Client, Relay, Relay option 82, Snooping
RARP	Supported
IP Source Guard	Supported
Port Mirroring	Supported

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<b>Event Syslog</b>	Syslog server (RFC3164)
<b>Warning Message</b>	System syslog, e-mail, alarm relay
<b>DNS</b>	Client, Proxy
<b>IEEE1588 PTP V2</b>	Support 5 operating mode in each port : Ordinary-Boundary, Peer to Peer Transparent Clock, End to End Transparent Clock, Master and Slave
<b>NTP, SNTP</b>	Client
<b>LLDP (IEEE 802.1ab)</b>	Link Layer Discovery Protocol LLDP-MED
<b>IPv6 Features</b>	
<b>IPv6 Management</b>	Telnet Server/ICMP v6
<b>SNMP over IPv6</b>	Supported
<b>HTTP over IPv6</b>	Supported
<b>SSH over IPv6</b>	Supported
<b>IPv6 Telnet</b>	Supported
<b>IPv6 NTP, SNTP</b>	Client
<b>IPv6 TFTP</b>	Supported
<b>IPv6 QoS</b>	Supported
<b>IPv6 ACL</b>	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
<b>Others Features</b>	
<b>Green Ethernet</b>	Supports IEEE 802.3az EEE (Energy Efficient Ethernet) Management to optimize the power consumption Determine the cable length and lowering the power for ports with short cables Lower the power for a port when there is no link LED Power Management :Adjustment LEDs intensity
<b>Cable Diagnostic</b>	Measuring UTP cable normal or broken point distance
<b>Advanced PoE</b>	
<b>Management</b>	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+803SM-8PH) Total PoE power budget limitation: maximum 180W (IGS+803SM-8PH24)

## Dimensions



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## Ordering Information

Model Name	Total Port	RJ45	SFP	PoE		Input Power		Certification				Operating Temperature
		10/100/1000 Base-T(X)	100/1000 Base-X	IEEE802.3 at/af	Power Budget	Redundant	NEMA TS2	UL60950-1 EN60950-1 EN62368-1	EN50121-4	EN61000-6-2 EN61000-6-4	CE FCC	
IGS+803SM-8PH	11	8	3	8	240W	48VDC	V	V	V	V	V	-10~60°C
IGS+803SM-8PHE	11	8	3	8	240W	48VDC	V	V	V	V	V	-40~75°C
IGS+803SM-8PH24	11	8	3	8	180W	24/48VDC	V	V	V	V	V	-10~60°C
IGS+803SM-8PHE24	11	8	3	8	180W	24/48VDC	V	V	V	V	V	-40~75°C

## Optional Accessories

### ■ 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, DDMI, -10~70°C (-40~85°C)
ISFP-S7020-31-D(E)	Industrial SFP 1000Base-LX, S/M, 20km, wave length 1310nm, 15dB, LC, DDMI, -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, DDMI, -10~70°C (-40~85°C)
ISFP-S5030-31-D(E)	Industrial SFP 155M 100Base-FX, SM, 30km, 1310nm, 19dB, LC, DDMI, -10~70°C (-40~85°C)

### ■ Industrial Power Supply

NDR-240-48	Industrial Power, Input 90 ~ 264VAC/127 ~ 370VDC, Output 48VDC, 240W, -20 ~ 70°C
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