

## IFS+803GSM

**8x FE RJ45 + 3x 100/1000Base-X SFP**

- » Supports IEEE 1588 PTP V2
- » Supports u-Ring, ERPS, EPS, MSTP, RSTP, STP for Redundant Cabling
- » Cable Diagnostics, Identifies Opens/Shorts Distance
- » UL60950-1, EN60950-1, EN62368-1, EN50121-4, NEMA-TS2, EN61000-6-2, EN61000-6-4, CE and FCC Certified



UL60950-1



EN50121-4



EN61000-6-2  
EN61000-6-4



NEMA TS2



EN62368-1



u-Ring



IEEE 1588v2



The industrial managed Ethernet switch IFS+803GSM has 8 10/100Base-TX UTP ports, equipped with 3 100/1000Base-X 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 12/24/48VDC power input, 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

- Redundant dual DC power input 12/24/48VDC (9.6~60VDC)
- 2.25K VDC Hi-pot isolation protection for Ethernet ports and power
- 4KV surge protection for UTP and fiber ports
- Provides 5 instances that each can support u-Ring, u-Chain or Sub-Ring type for flexible uses.  
(Please see CTC u-Ring white paper for more details and more topology application)
- u-Ring for Redundant Cabling, recovery time<10ms in 250 devices
- Supports IEEE 1588 PTP V2 for precise time synchronization to operate in Ordinary-Boundary, Peer to Peer Transparent Clock, End to End Transparent Clock, Master, Slave mode by each port
- Supports EMS Management

### Specifications

Standard		
IEEE 802.3		10Base-T 10Mbit/s Ethernet
IEEE 802.3u		100Base-TX, 100Base-FX, Fast Ethernet
IEEE 802.3z		1000Base-X Gbit/s Ethernet over Fiber-Optic
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
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)

# Industrial Managed Fast Ethernet Switch

<b>VLAN ID</b>	4094 IEEE 802.1Q VLAN ID	
<b>Switch Architecture</b>	Back-Plane (Switching Fabric): 7.6Gbps (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 10/100Base-TX RJ-45 and 3x 100/1000Base-X SFP	
	RJ-45 UTP port supports Auto negotiation speed, Auto MDI/MDI-X function	
	SFP port supports 100/1000M dual speed with DDMI	
<b>Console</b>	RS-232 (RJ-45)	
<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	
<b>Overload Current Protection</b>	Supported	
<b>CPU Watch Dog</b>	Supported	
<b>Power Supply</b>	Redundant Dual 12/24/48VDC (9.6~60VDC) Input power (Removable Terminal Block )	
<b>Power Consumption</b>	<b>Input Voltage</b>	<b>Total Power Consumption</b>
	12 VDC	7.4W
	24 VDC	7.8W
	48 VDC	8.9W
<b>LED</b>	System: Power 1 (Green), Power 2 (Green), Fault (Amber), CPU Act (Green), Ring Master (Yellow)	
	UTP: 10/100 Link/Active (Green)	
	SFP Slot: Link/Active (Green)	
<b>Jumbo Frame</b>	9.6KB	
<b>IEEE 802.3ac</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>	Provide 2 redundant power, alarm relay contact, 6 Pin	
<b>Operating Temperature</b>	-10 ~ 60°C (IFS+803GSM) -40 ~ 75°C (IFS+803GSM-E)	
<b>Operating Humidity</b>	5% to 95% (Non-condensing)	
<b>Storage Temperature</b>	-40 ~ 85°C	
<b>Housing</b>	Rugged Metal, IP30 Protection and Fanless	
<b>Dimensions</b>	106 x 72 x 152mm (D x W x H)	
<b>Weight</b>	0.81kg	
<b>Installation Mounting</b>	DIN Rail mounting or wall mounting (optional)	
<b>MTBF</b>	688,248 hours (MIL-HDBK-217)	
<b>Warranty</b>	5 years	
<b>Certification</b>		
<b>EMC</b>	CE (EN55032, EN55024)	
<b>EMI (Electromagnetic Interference)</b>	FCC Part 15 Subpart B Class A, CE EN55032 Class A	
<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	
	EN61000-4-6 (CS) Level 3, Criteria A	
	EN61000-4-8 (PFMF, Magnetic Field) Field Strength: 300A/m, Criteria A	

# Industrial Managed Fast Ethernet Switch

<b>Safety</b>	UL60950-1, EN60950-1, EN62368-1
<b>Hipot</b>	DC 2.25KV for power to chassis ground, Ethernet ports to chassis ground
<b>Surge Protection</b>	4KV for UTP and Fiber port
<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 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 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 devices in the ring supports 250 nodes.
<b>Loop Protection</b>	Supported
<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

### QoS Features

<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, Multicast

### IP Multicasting Features

<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
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# Industrial Managed Fast Ethernet Switch

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## Security Features

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
RADIUS	L4: TCP/UDP
	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

## Management Features

CLI	Cisco® like CLI
WeB UI	Supported
Telnet	Server
SNMP	V1, V2c, V3
sFlow	Supported
Modbus/TCP	Support 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
Event Syslog	Syslog server (RFC3164)
Warning Message	System syslog, e-mail, alarm relay
DNS	Client, Proxy
IEEE 1588 PTP V2	Supports 5 operating mode in each port :
	Ordinary-Boundary, Peer to Peer Transparent Clock, End to End Transparent Clock, Master and Slave
NTP, SNTP	Client
LLDP (IEEE 802.1ab)	Link Layer Discovery Protocol
	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

# Industrial Managed Fast Ethernet Switch

## Others Features

### Green Ethernet

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

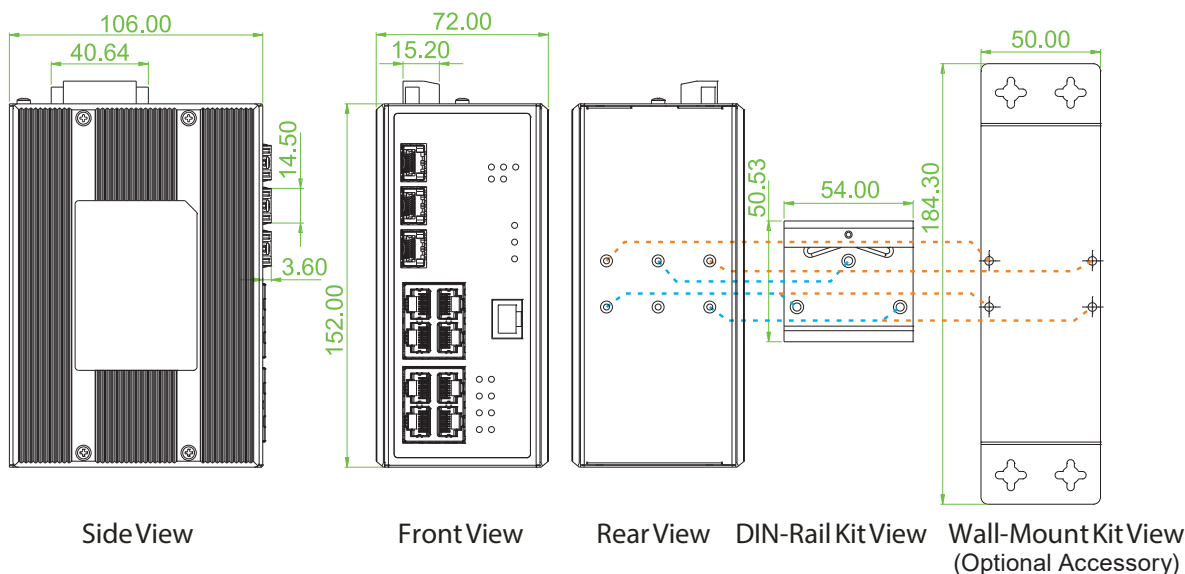
Lower the power for a port when there is no link

LED Power Management :Adjustment LEDs intensity

### Cable Diagnostic

Measuring UTP cable normal or broken point distance

## Dimensions



## Ordering Information

Model Name	Managed	Total Port	RJ45	SFP	Power Input	Certification				Operating Temperature
			10/100 Base-TX	100/1000 Base-X	Redundant	NEMA TS2	UL60950-1 EN60950-1 EN62368-1	EN50121-4	CE, FCC EN61000-6-2 EN61000-6-4	
IFS+803GSM	V	11	8	3	12/24/48VDC	V	V	V	V	-10~60°C
IFS+803GSM-E	V	11	8	3	12/24/48VDC	V	V	V	V	-40~75°C

## Optional Accessories

### ■ Wall Mount Kit

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

### ■ 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

MDR-20-24	Industrial Power, Input 85 ~ 264VAC/120 ~ 370VDC, Output 24VDC, 24W, -20 ~ 70°C
MDR-40-48	Industrial Power, Input 85 ~ 264VAC/120 ~ 370VDC, Output 48VDC, 40W, -20 ~ 70°C