

IFS-402CGSW

4x FE RJ45 + 2x 100/1000Base-X SFP, Compact size



- ◆ 4KV Surge Protection for UTP and SFP Ports
- ◆ Compact Size for Easy Installation
- ◆ EN 62368-1, EN50121-4, EN61000-6-2, EN61000-6-4, CE and FCC Certified



The industrial compact size managed Ethernet switch IFS-402CGSW, features 4 ports 10/100Base-TX UTP and equipped with 2 100/1000Base-X SFP slots for fiber optic connections to meet the requirements for extended transmission distance, fanless design, high MTBF, supports wide operating temperature, and redundant 12/24/48VDC power input, it is suitable for heavy-duty applications in harsh environments such as industrial factory automation and data centers, intelligent transportation systems, military and utility market applications where environmental conditions exceed commercial product specifications.

Features

- Redundant power input
- Cable diagnostics
- 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)	
	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)	
	Switch Architecture	Back-Plane (Switching Fabric): 4.8Gbps (Full Wire-Speed)	
	Data Processing	Store and Forward	
Flow Control	IEEE 802.3x for full duplex mode Back pressure for half duplex mode		

Industrial Managed Switch



Network Connector	4x 10/100Base-TX RJ-45 + 2x FE/GbE SFP RJ-45 UTP port supports Auto negotiation speed, Auto MDI/MDI-X function SFP port supports FE/GbE with DDMI									
Console	RS-232 (RJ-45)									
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	Redundant Dual 12/24/48VDC (9.6~60VDC) Input power (Removable Terminal Block)									
Power Consumption	<table border="1"> <thead> <tr> <th>Input Voltage</th> <th>Total Power Consumption</th> </tr> </thead> <tbody> <tr> <td>12 VDC</td> <td>4.7W</td> </tr> <tr> <td>24 VDC</td> <td>4.8W</td> </tr> <tr> <td>48 VDC</td> <td>5.3W</td> </tr> </tbody> </table>		Input Voltage	Total Power Consumption	12 VDC	4.7W	24 VDC	4.8W	48 VDC	5.3W
Input Voltage	Total Power Consumption									
12 VDC	4.7W									
24 VDC	4.8W									
48 VDC	5.3W									
LED	System: Power 1 (Green), Power 2 (Green) UTP: 100 Link/Active (Green), 10 Link/Active (Amber) SFP Slot: 100 Link/Active (Green), 1000 Link/Active (Amber)									
Jumbo Frame	9KB									
IEEE802.3ac	Max frame size extended to 1522Bytes (allow Q-tag in packet)									
MAC Address Table	4K									
Memory Buffer	1.75M bits for packet buffer									
Device Memory	128M Bytes Flash ROM, 256M Bytes RAM									
Warning Message	System Syslog, SMTP/ e-mail event message									
Removable Terminal Block	Provides 2 redundant power, 4 Pin									
Operating Temperature	-10 ~ 60°C (IFS-402CGSW) -40 ~ 75°C (IFS-402CGSW-E)									
Operating Humidity	5% to 95% (Non-condensing)									
Storage Temperature	-40 ~ 85°C									
Housing	Rugged Metal, IP30 Protection and Fanless									
Dimensions	106 x 31.6 x 142mm (D x W x H)									
Weight	535g									
Installation Mounting	DIN Rail mounting or wall mounting (Optional)									
MTBF	1038,003Hours (MIL-HKPK-217)									
Warranty	5 years									
Certification										
EMC	CE (EN55032, EN55035)									
EMI (Electromagnetic Interference)	FCC Part 15 Subpart B Class A,CE									
Railway Traffic	EN50121-4									
Immunity for Heavy Industrial Environment	EN61000-6-2									
Emission for Heavy Industrial Environment	EN61000-6-4									
EMS (Electromagnetic Susceptibility) Protection Level	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									
Surge Protection	4KV for UTP and Fiber ports									

Safety	EN 62368-1, UL/cUL 62368-1, IEC 62368-1
Shock	IEC 60068-2-27
Freefall	IEC 60068-2-31
Vibration	IEC 60068-2-6

Software Specifications

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Topology

VLAN	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
Link Aggregation (Port Trunk)	Static (Hash with SA, DA, IP, TCP/UDP port), up to 5 trunk group Dynamic (IEEE 802.3ad LACP), up to 5 trunk group
Spanning Tree	IEEE 802.1D STP IEEE 802.1w RSTP IEEE 802.1s MSTP
Loop Protection	Supported

QoS Features

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
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, Multicast

IP Multicasting Features

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
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Security Features

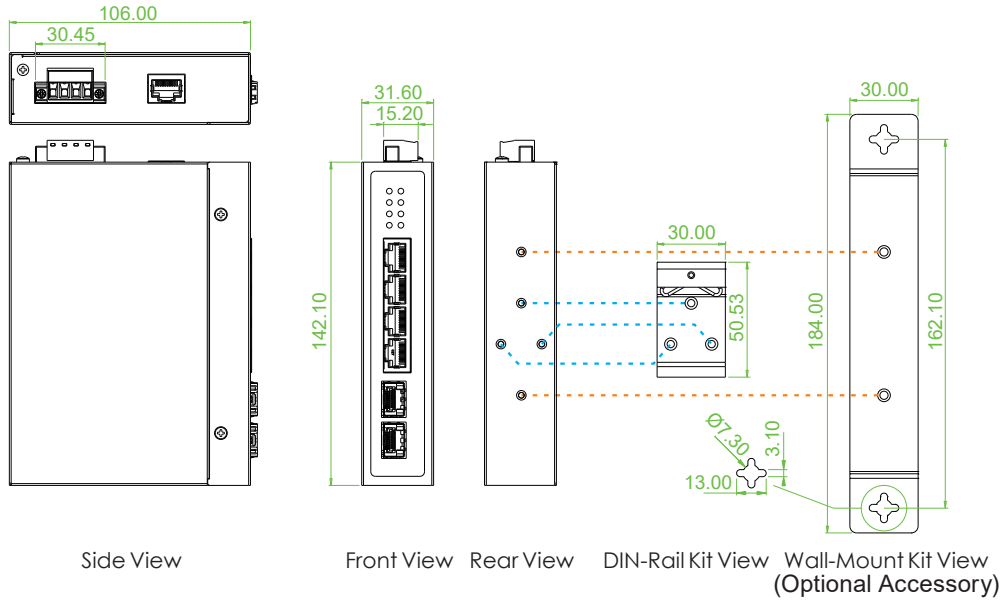
IEEE 802.1X	Port-Based MAC-Based
ACL	Number of rules : up to 256 entries for L2 / L3 / L4 L2 : Mac address SA/DA/VLAN L3: IP address SA/DA, Subnet L4: TCP/UDP
RADIUS	Authentication & Accounting

Industrial Managed Switch



TACACS+	Authentication, Authorization, Accounting
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	Supports for management and monitoring
SNMP	V1, V2c, V3
sFlow	Supported
ModBus/TCP	Supports management and monitoring
SW & Configuration Upgrade	SFTP, 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
DNS	Client, Proxy
NTP	Client
LLDP (IEEE802.1ab)	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	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
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
Cable Diagnostic	Measuring UTP cable normal or broken point distance

Dimensions



Ordering Information

Model Name	Total Port	RJ45	SFP	Input Power	Certification				Operating 10/100Base-TX
		10/100Base-TX	100/1000 Base-X	Redundant	EN 62368-1 UL/cUL 62368-1 IEC 62368-1	EN50121-4	EN61000-6-2 EN61000-6-4	CE FCC	
IFS-402CGSW	6	4	2 SFP	12/24/48VDC	V	V	V	V	-10~60°C
IFS-402CGSW-E	6	4	2 SFP	12/24/48VDC	V	V	V	V	-40~75°C

Optional Accessories

■ Wall Mount Kit

IND-WMK01 Wall Mount kit for Industrial product (184x30mm) (Narrow)

■ 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