

# Industrial Unmanaged FE Switch



## IFS-402F

4x 10/100Base-TX+ 2x 100Base-FX FE Switch

## IFS-800

8x 10/100Base-TX FE Switch

## IFS-802GS (New Model)

8x 10/100Base-TX + 2x 1000Base-X SFP Slot FE Switch

This series models are non-managed industrial grade gigabit switches with 4 or 8 10/100/1000Base-T ports and 0~2 fiber ports, that provide stable and reliable Ethernet transmission. Housed in rugged DIN rail or wall mountable enclosures, these switches are designed for harsh environments, such as industrial networking, intelligent transportation systems (ITS) and are also suitable for many military and utility market applications where environmental conditions exceed commercial product specifications. Standard operating temperature range models (-10 to 60°C) and wide operating temperature range models (-40 to 75°C) fulfill the special needs of industrial automation applications.

### Feature

- 4x 10/100Base-TX RJ45 + 2x 100Base-FX Fiber (IFS-402F)
- 8x 10/100Base-TX RJ45 (IFS-800)
- 8x 10/100Base-TX RJ45 + 2x 1000Base-X SFP (IFS-802GS)
- Redundant dual DC input power 12/24/48VDC (9.6~60VDC)
- IP30 rugged metal housing and Fanless
- Wide operating temperature -40 ~ 75°C (-E model)
- Provides broadcast storm protection (IFS-402F, IFS-800)
- Supports DIP SW for alarm setting and broadcast storm protection
- Supports power failure alarm message by relay
- Supports flow control
- CE, FCC, and EN50121-4 certification
- Industrial grade EMS, EMI, EN61000-6-2, EN61000-6-4 certified

### Specifications

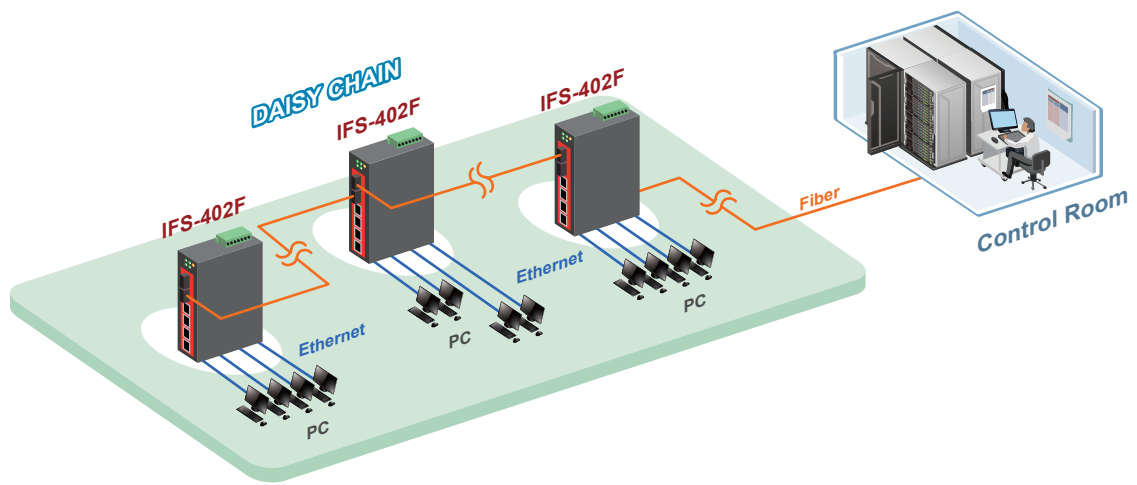
<b>IEEE Standard</b>	IEEE 802.3 10Base-T Ethernet IEEE 802.3u 100Base-TX and 100Base-FX Fast Ethernet IEEE 802.3x Flow Control and Back Pressure IEEE 802.3z 1000Base-X Gbit/s Ethernet over Fiber-Optic	
<b>Switch Architecture</b>	Back-plane (Switching Fabric) : 1.2Gbps (IFS-402F) 1.6Gbps (IFS-800) 5.6Gbps (IFS-802GS) Full wire-speed	
<b>Data Processing</b>	Store and Forward	
<b>Transfer Rate</b>	14,880pps for Ethernet port 148,800pps for Fast Ethernet port 1,488,000pps for Giga Ethernet port	
<b>Flow Control</b>	IEEE 802.3x flow control, back pressure flow control	
<b>Provides Broadcast Storm Protection</b>	Present, Enable /Disable set by DIP SW (IFS-402F, IFS-800)	
<b>MAC Address Table</b>	2K (IFS-402F, IFS-800)	8K (IFS-802GS)
<b>Packet Buffer Size</b>	448Kbit (IFS-402F, IFS-800)	1024Kbit (IFS-802GS)
<b>Network Connector</b>	4X RJ-45, 2 Fiber (IFS-402F) 8x RJ-45 (IFS-800) 8x RJ-45, 2 SFP (IFS-802GS)  RJ-45 Port: Auto MDI/MDI-X function, 10/100Base-TX auto negotiation speed, Full/Half duplex Fiber Port : 100Base-FX SC/ST, Multi/Single Mode SFP Port : 1000Base-X	
<b>Network Cable</b>	10Base-T: 2-pair UTP/STP Cat. 5 cable EIA/TIA-568 100-ohm (100m) 100Base-TX: 2-pair UTP/STP Cat. 5 cable EIA/TIA-568 100-ohm (100m) Fiber Cable (Multi-mode): 50/125um~62.5/125um Fiber Cable (Single-mode): 8/125um~10/125um Wavelength: 1310nm (Multi-mode/Single-mode) Available distance: 2KM (Multi-Mode) 30KM (Single-Mode) 50KM (Single Mode) SFP: Distance depend on SFP Fiber Transceiver	
<b>Protocol</b>	CSMA/CD	
<b>LED</b>	Per unit: Power 1 (Green), Power 2 (Green), Fault (Amber) RJ-45 Per port: Link/Active (Green), Speed 100 (Yellow) Fiber Per port: Link/Active (Green) (IFS-402F) SFP Port : Link/Active (Green) (IFS-802GS)	
<b>DIP SW</b>	DIP 1	OFF : Enable power failure alarm ON : Disable
	DIP 2	OFF : Enable broadcast storm protection ON : Disables broadcast storm protection
<b>Reverse Polarity Protection</b>	Present	
<b>Overload Current Protection</b>	Present	
<b>Power Supply</b>	Redundant Dual DC 12/24/48V (9.6~60VDC) Input power (Removable Terminal Block) Provides DC Power JACK adapter cable for external power supply	
<b>Power Consumption</b>	5.8W (IFS-402F) 4.4W (IFS-802GS) 3.9W (IFS-800)	
<b>Alarm Relay Contact</b>	Relay outputs with current carrying capacity of 1 A @24VDC, NC	
<b>Removable Terminal Block</b>	Provides 2 Redundant power, Alarm relay contact, 6 Pin	
<b>Operating Temperature</b>	-10 ~ 60°C (IFS-402F, IFS-800, IFS-802GS) -40 ~ 75°C (IFS-402F-E, IFS-800-E, IFS-802GS-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 31.6 x 142mm (D x W x H) (IFS-402F) 106 x 31.6 x 142mm (D x W x H) (IFS-800) 106 x 72 x 152 mm (D x W x H) (IFS-802GS)	
<b>Weight</b>	0.42kg (IFS-402F) 0.67kg (IFS-802GS) 0.43kg (IFS-800)	
<b>Installation Mounting</b>	DIN Rail mounting or wall mounting	
<b>MTBF</b>	509,883Hrs (IFS-402F) 552,587Hrs (IFS-800) 513,128Hrs (IFS-802GS) (MIL-HDBK-217)	
<b>Warranty</b>	5 years	

Certification	
EMC/EMS	CE
EMI (Electromagnetic Interference)	FCC Part 15 Subpart B Class A, CE EN55022 Class A
Railway Traffic	EN50121-4
Immunity for Heavy Industrial Environment	EN61000-6-2
Emission for Heavy Industrial Environment	EN61000-6-4

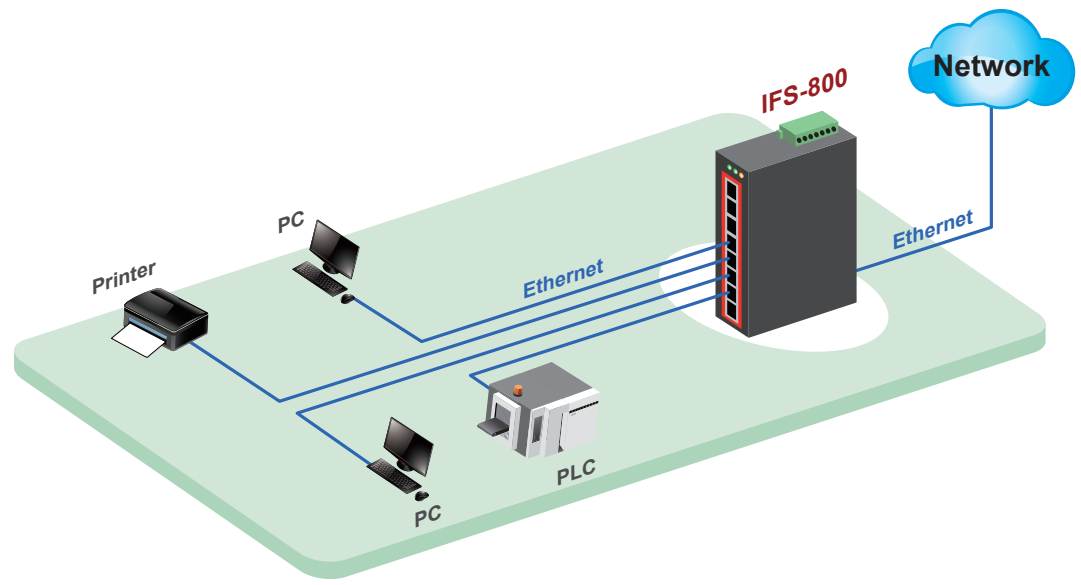
EMS	EN61000-4-2 (ESD) Level 3, Criteria B
	EN61000-4-3 (RS) Level 3, Criteria A
	EN61000-4-4 (Burst) Level 3, Criteria A
	EN61000-4-5 (Surge) Level 3, Criteria B
	EN61000-4-6 (CS) Level 3, Criteria A
	EN61000-4-8 (PFMF, Magnetic Field) Field Strength: 300A/m, Criteria A
Safety	UL60950-1 (Pending)
Shock	IEC 60068-2-27
Freefall	IEC 60068-2-32
Vibration	IEC 60068-2-6

## Application

► **Figure 1 : IFS-402F Fast Ethernet Switch Transmission with Daisy Chain**



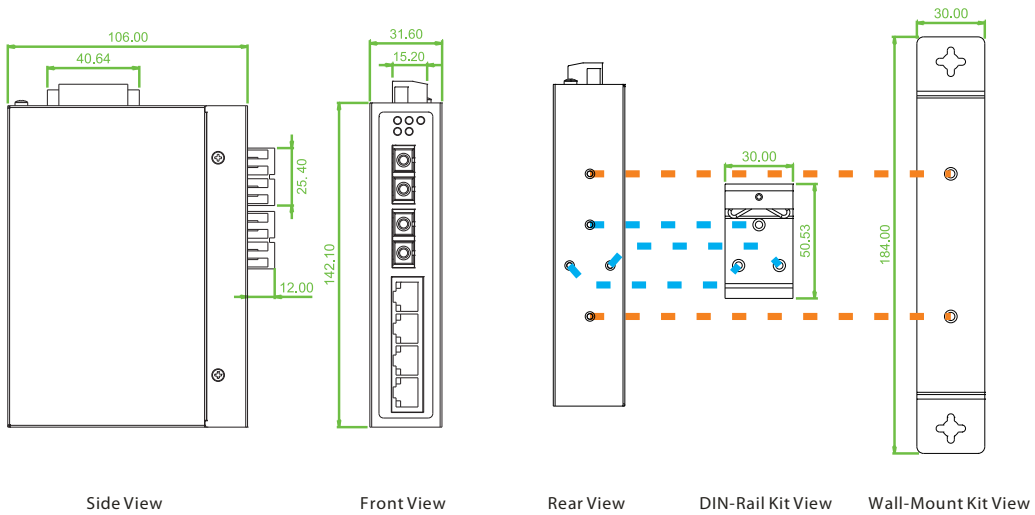
► **Figure 2 : IFS-800 Fast Ethernet Switch Transmission**



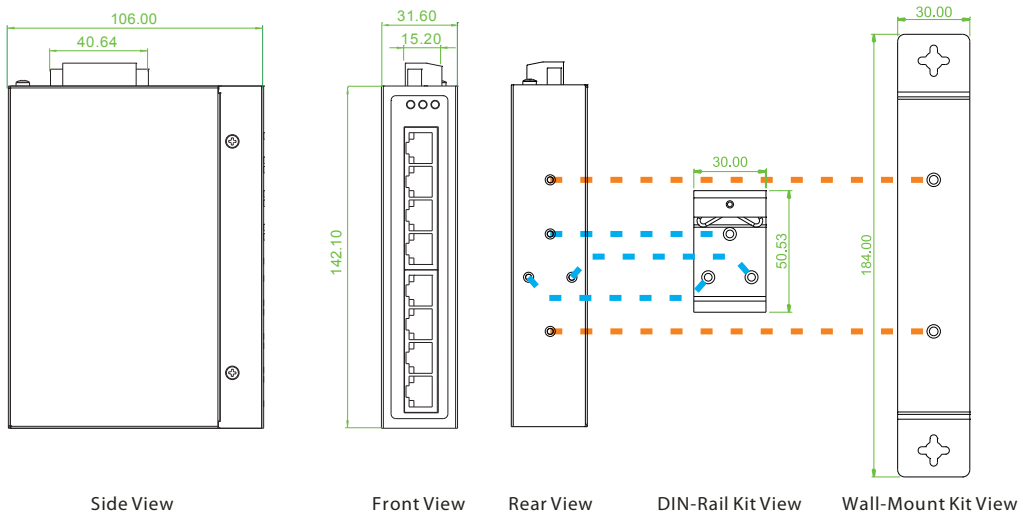
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## Dimensions

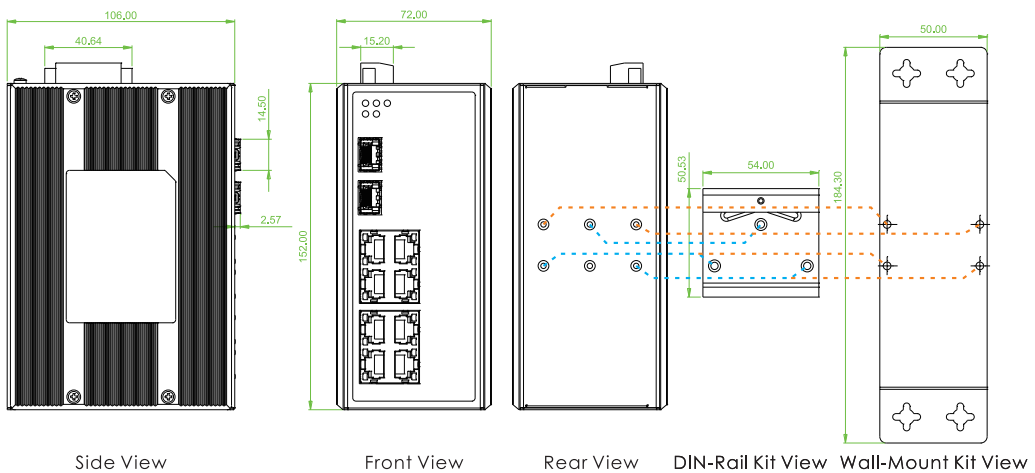
### ► IFS-402F



### ► IFS-800



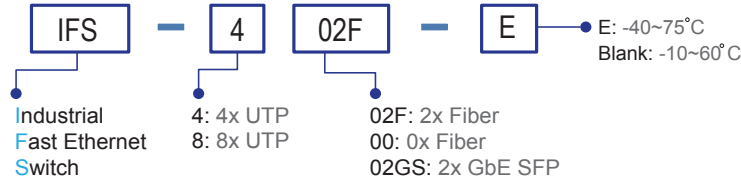
### ► IFS-802GS



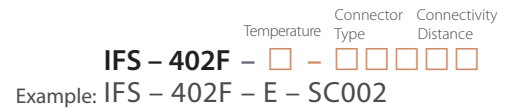
## Ordering Information

Model Name	Total Port	UTP Port			Fiber Port		Certification				Operating Temperature
		10/100Base-TX	100Base-FX	1000Base-X	Railway EN50121-4	EN61000-6-2 EN61000-6-4	CE	FCC			
IFS-402F	6	4	2 SC/ST		V	V	V	V		-10~60 C	
IFS-402F-E	6	4	2 SC/ST		V	V	V	V		-40~75 C	
IFS-800	8	8			V	V	V	V		-10~60 C	
IFS-800-E	8	8			V	V	V	V		-40~75 C	
IFS-802GS	10	8		2 SFP	V	V	V	V		-10~60 C	
IFS-802GS-E	10	8		2 SFP	V	V	V	V		-40~75 C	

### Model Naming Rule



Fiber Option Type	Connectivity Distance
SC, ST (only for IFS-402F)	002: 2km 030: 30km 050: 50km 020A: WDM Bidi 20km A type (TX: 1310nm) 020B: WDM Bidi 20km B type (TX: 1550nm)



## Optional Accessories

### Industrial Power Supply

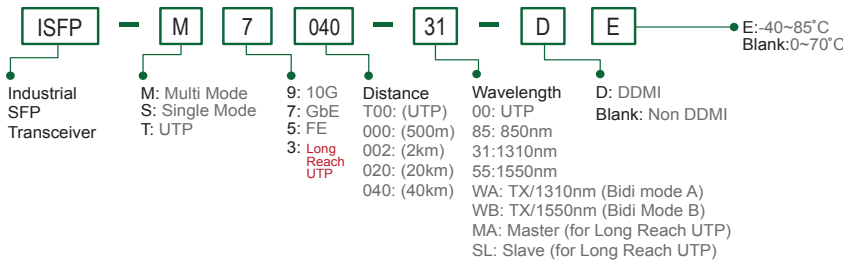
DR-4524	Industrial Power, Input 85 ~ 264VAC, Output 24VDC, 48W, -10 ~ +50°C
MDR-40-24	Industrial Power, Input 85 ~ 264VAC, Output 24VDC, 40W, -20 ~ +70°C

### Industrial SFP Transceiver

(The ISFP series of industrial grade SFP modules have been fully tested with the IFS-802GS product for guaranteed compatibility and performance. The best performance can be guaranteed even in mission-critical applications.)  
(Please see CTC Union's Industrial SFP datasheet for more details and more items.)

ISFP-M7000-85-(E)	Industrial SFP GbE 1000Base-SX, M/M, 500 meter, wave length 850nm, 7.5dB, LC, -10~70°C (-40~85°C)
ISFP-S7020-31-(E)	Industrial SFP 1000Base-LX, S/M, 20km, wave length 1310nm, 15dB, LC, -10~70°C (-40~85°C)
ISFP-T7T00-00-(E)	Industrial SFP 1000Base-T UTP 100meter, -10~70°C (-40~85°C)
ISFP-T3T00-MA-(E)	Industrial SFP 100Mbps, long reach UTP (2 wire) (500meter), Master, -10~70°C (-40~85°C)
ISFP-T3T00-SL-(E)	Industrial SFP 100Mbps, long reach UTP (2 wire) (500meter), Slave, -10~70°C (-40~85°C)

### SFP Naming Rule



## Package List

- One device of the series
- Quickly installation guide
- Din Rail with screws
- Wall mount bracket with screws
- Terminal block
- Protective caps for SFP ports (for IFS-802GS)
- DC Power JACK adapter cable