



## IGS-402F

4x 100/1000Base-T + 2x 1000Base-SX/LX  
Gigabit Ethernet Switch

## IGS-402S

4x 100/1000Base-T + 2x 100/1000Base-X SFP  
Gigabit Ethernet Switch



These models are unmanaged industrial grade Gigabit switches with 4 10/100/1000Base-T ports and 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 (See Figure). 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.

### Features

- 4x 10/100/1000Base-T RJ45 + 2x 1000Base-SX/LX Fiber (IGS-402F)
- 4x 10/100/1000Base-T RJ45 + 2x 100/1000Base-X SFP (IGS-402S)
- 12/24/48VDC redundant dual input power design
- Wide operating temperature -40 ~ 75°C ("E" model)
- Provides broadcast storm protection
- Supports DIP SW for alarm setting and broadcast storm protection
- Supports power failure alarm message by relay
- Supports flow control
- Jumbo frame support
- IP30 rugged metal housing and fanless
- Supports DIN Rail or wall mounting installation
- UL60950-1, CE, FCC, EN50121-4 certification
- Heavy industrial grade EMS, EMI, EN61000-6-2, EN61000-6-4 certified
- IP30 rugged metal housing and fanless

### Specifications

<b>IEEE Standard</b>	IEEE 802.3 10Base-T 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 802.3x Flow Control and Back Pressure
<b>Switch Architecture</b>	Back-plane (Switching Fabric): 12Gbps (IGS-402S, IGS-402F) Full wire-speed
<b>Data Processing</b>	Store and Forward
<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
<b>Jumbo Frame</b>	10K Bytes
<b>MAC Address Table</b>	8K
<b>Packet Buffer Size</b>	1Mbits
<b>Network Connector</b>	4 x RJ-45 10/100/1000Base-TX auto negotiation speed, Auto MDI/MDI-X function, Full/Half duplex 2 1000Base-X Fiber SC connector (IGS-402F) 2 100/1000Base-X SFP connector (IGS-402S)
<b>Network Cable</b>	UTP/STP above Cat. 5e cable EIA/TIA-568 100-ohm (100m) Fiber Cable (Multi-mode): 50/125um, 62.5/125um Fiber Cable (Single-mode): 9/125um
<b>Protocols</b>	CSMA/CD
<b>LED</b>	Per unit: Power 1 (Green), Power 2 (Green), Fault (Amber) Per RJ-45 port : Link/Active (Green), Speed 10 (OFF), 100 (Green), 1000 (Yellow) Fiber Per port: Link/Active (Green)
<b>DIP SW</b>	DIP 1 ON : Disable power failure alarm OFF : Enable power failure alarm DIP 2 ON : Disables broadcast storm protection OFF : Enable broadcast storm protection

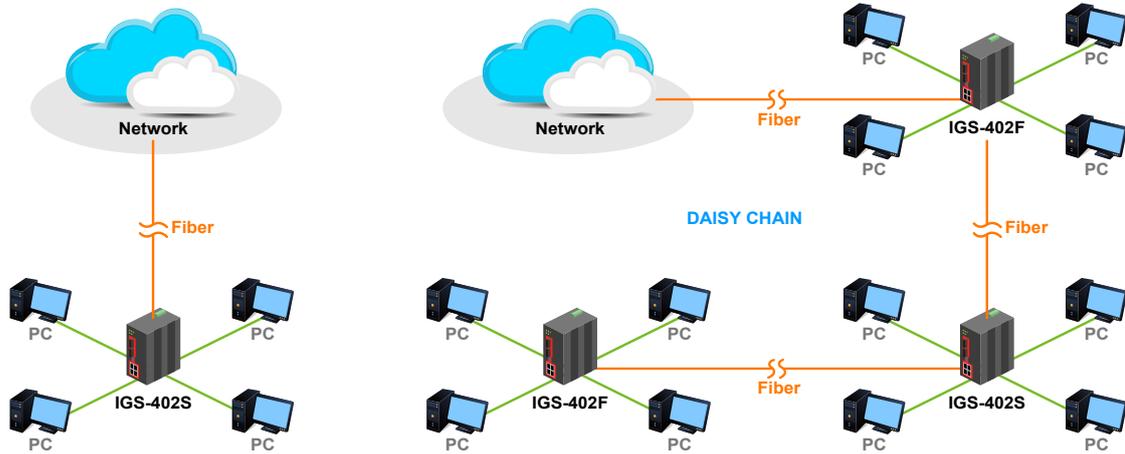
<b>DIP SW</b>	DIP 4 ON : Fiber 2 for 100Base-FX SFP OFF : Fiber 2 for Gigabit SFP (IGS-402S) DIP 4 ON : Fiber 1 for 100Base-FX SFP OFF : Fiber 1 for Gigabit SFP (IGS-402S)
<b>Reverse Polarity Protection</b>	Supported for Power Input
<b>Overload current protection</b>	Supported
<b>Power Supply</b>	Redundant Dual DC 12/24/48V (9.6~60VDC) Input power (Removable Terminal Block)
<b>Power Consumption</b>	7.9W (IGS-402F) 7.9W (IGS-402S)
<b>Alarm Relay Contact</b>	Relay outputs with current carrying capacity of 1 A @24VDC Provides 2 Redundant power, Alarm relay contact, 6 Pin
<b>Removable Terminal Block</b>	
<b>Operating Temperature</b>	-10 ~ 60°C (IGS-402S, IGS-402F) -40 ~ 75°C (IGS-402S-E, IGS-402F-E)
<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 62.5 x 134.8 mm (D X W X H)
<b>Weight</b>	0.84kg (IGS-402S) 0.68kg (IGS-402F)
<b>Installation Mounting</b>	DIN Rail mounting, or wall mounting (Optional)
<b>MTBF</b>	1,000,643 Hours (IGS-402S) 821,412 Hours (IGS-402F) (MIL-HDBK-217)
<b>Warranty</b>	5 years
<b>Certification</b>	
<b>EMC/EMS</b>	CE
<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

<b>EMS</b>	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
<b>Safety</b>	UL60950-1
<b>Shock</b>	IEC 60068-2-27
<b>Freefall</b>	IEC 60068-2-32
<b>Vibration</b>	IEC 60068-2-6

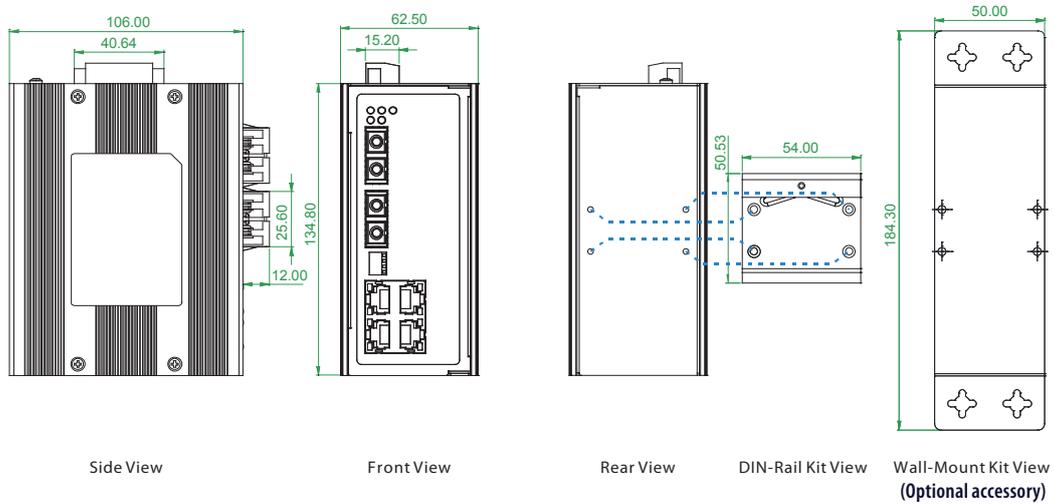
## Application

Figure : IGS-402S & IGS-402F Gigabit Ethernet Switch Transmission

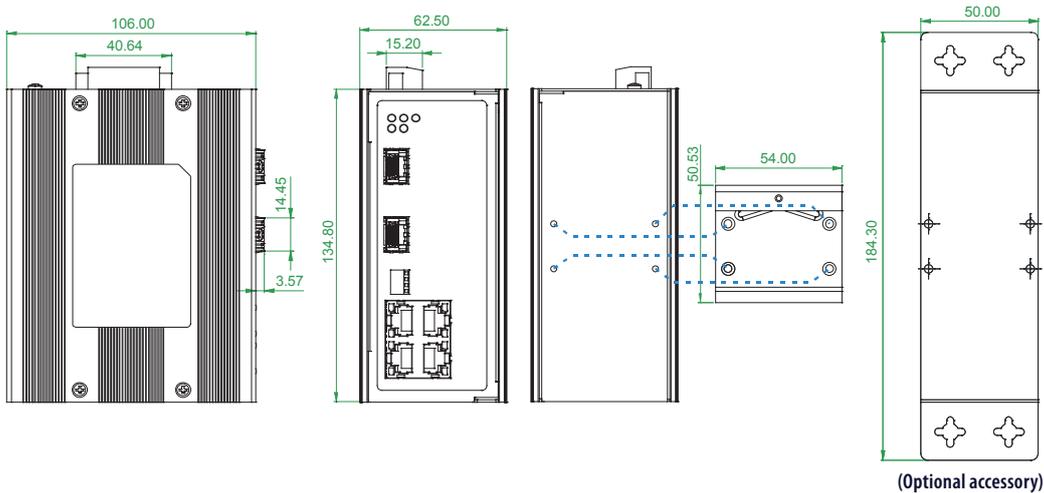


## Dimensions

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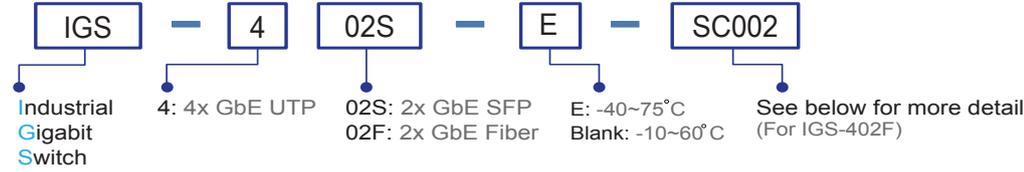
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## Ordering Information

Model Name	Total Port	RJ45 UTP port	Fiber Port		Power Input	Certification					Operating Temperature
		10/100/1000 Base-T	1000Base-X	100/1000Base-X	Redundant	Safety UL60950-1	Railway EN50121-4	EN61000-6-2 EN61000-6-4	CE	FCC	
IGS-402F	6	4	2 SC		12/24/48VDC	V	V	V	V	V	-10~60°C
IGS-402F-E	6	4	2 SC		12/24/48VDC	V	V	V	V	V	-40~75°C
IGS-402S	6	4	2 SFP		12/24/48VDC	V	V	V	V	V	-10~60°C
IGS-402S-E	6	4	2 SFP		12/24/48VDC	V	V	V	V	V	-40~75°C

### Model Naming Rule



Fiber Connector	Connectivity Distance
SC	SC001: 500m (SC, M/M)    002: 2km (M/M)    SC020: 20km (SC, S/M)    SC040: 40km (SC, S/M)
(IGS-402F only)	SC020A: WDM 20km A type (TX:1310nm) SC020B: WDM 20km B type (TX:1550nm)



### Package List

- One device of the series
- Protective caps for SFP ports (for IGS-402S)
- Quickly installation guide
- Din Rail with screws
- Terminal block

## Optional Accessories

### Wall mount kit accessories

IND-WMK02	Wall Mount kit for Industrial product, 184 x 50mm
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### Industrial SFP Transceiver

The ISFP series of industrial grade SFP modules have been fully tested with the series 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-M5002-31-(E)	Industrial SFP 155M 100Base-FX, MM, 2km, wave length 1310nm, 12dB, LC, -10~70°C (-40~85°C)
ISFP-S5030-31-(E)	Industrial SFP 155M 100Base-FX, SM, 30km, 1310nm, 19dB, LC, -10~70°C (-40~85°C)

### SFP Naming Rule

