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**

UL60950-1   CE   FC   EN50121-4   EN61000-6-2 EN61000-6-4

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℃) and wide operating temperature range models (-40 to 75℃) 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℃ ("-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

IEEE Standard	
	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
Switch Architecture	Back-plane (Switching Fabric): 12Gbps (IGS-402S, IGS-402F) Full wire-speed
Data Processing	Store and Forward
Flow Control	IEEE 802.3x flow control, back pressure flow control
Provides Broadcast Storm Protection	Present, Enable / Disable set by DIP SW
Jumbo Frame	10K Bytes
MAC Address Table	8K
Packet Buffer Size	1Mbits
Network Connector	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)
Network Cable	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
Protocols	CSMA/CD
LED	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)

DIP SW	DIP 1	ON : Disable power failure alarm
		OFF : Enable power failure alarm
	DIP 2	ON : Disables broadcast storm protection
		OFF : Enable broadcast storm protection

DIP SW	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)

Reverse Polarity Protection	Supported for Power Input
Overload current protection	Supported
Power Supply	Redundant Dual DC 12/24/48V (9.6~60VDC) Input power (Removable Terminal Block)
Power Consumption	7.9W (IGS-402F)
	7.9W (IGS-402S)
Alarm Relay Contact	Relay outputs with current carrying capacity of 1 A @24VDC
Removable Terminal Block	Provides 2 Redundant power, Alarm relay contact, 6 Pin
Operating Temperature	-10 ~ 60℃ (IGS-402S, IGS-402F)
	-40 ~ 75℃ (IGS-402S-E, IGS-402F-E)
Operating Humidity	5% to 95% (Non-condensing)
Storage Temperature	-40 ~ 85℃
Housing	Rugged Metal, IP30 Protection, Fanless
Dimensions	106 x 62.5 x 134.8 mm (D X W X H)
Weight	0.84kg (IGS-402S)
	0.68kg (IGS-402F)
Installation Mounting	DIN Rail mounting, or wall mounting (Optional)
MTBF	1,000,643 Hours (IGS-402S) 821,412 Hours (IGS-402F) (MIL-HDBK-217)
Warranty	5 years
Certification	
EMC/EMS	CE
EMI (Electromagnetic Interference)	FCC Part 15 Subpart B Class A, CE
Railway Traffic	EN50121-4

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Immunity for Heavy Industrial Environment	EN61000-6-2		EMS	EN61000-4-5 (Surge) Level 3, Criteria B
				EN61000-4-6 (CS) Level 3, Criteria A
Emission for Heavy Industrial Environment	EN61000-6-4			EN61000-4-8 (PFMF, Magnetic Field) Field Strength: 300A/m, Criteria A
EMS (Electromagnetic Susceptibility) Protection Level	EN61000-4-2 (ESD) Level 3, Criteria B		Safety	UL60950-1
	EN61000-4-3 (RS) Level 3, Criteria A		Shock	IEC 60068-2-27
	EN61000-4-4 (Burst) Level 3, Criteria A		Freefall	IEC 60068-2-32
			Vibration	IEC 60068-2-6

Application

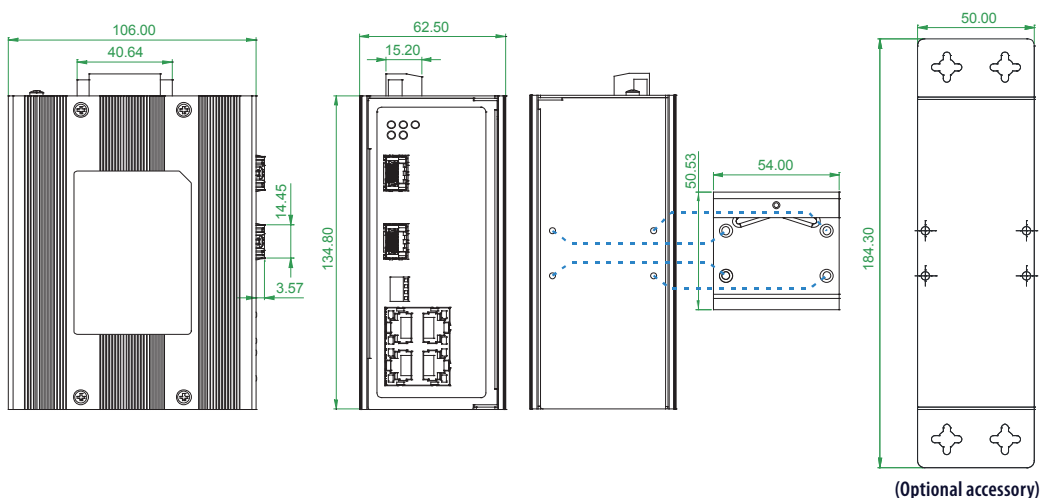**Figure :** IGS-402S & IGS-402F Giagabit Ethernet Switch Transmission
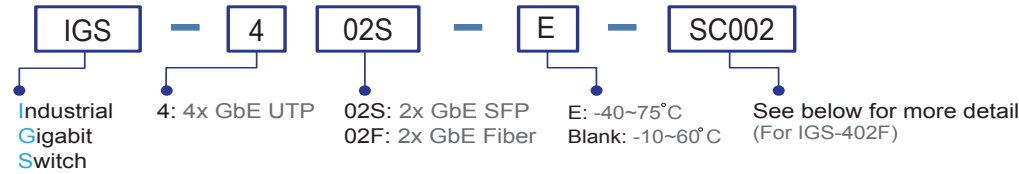

Dimensions

▶ IGS-402F

Side View   Front View   Rear View   DIN-Rail Kit View   Wall-Mount Kit View
(Optional accessory)

▶ IGS-402S

(Optional accessory)
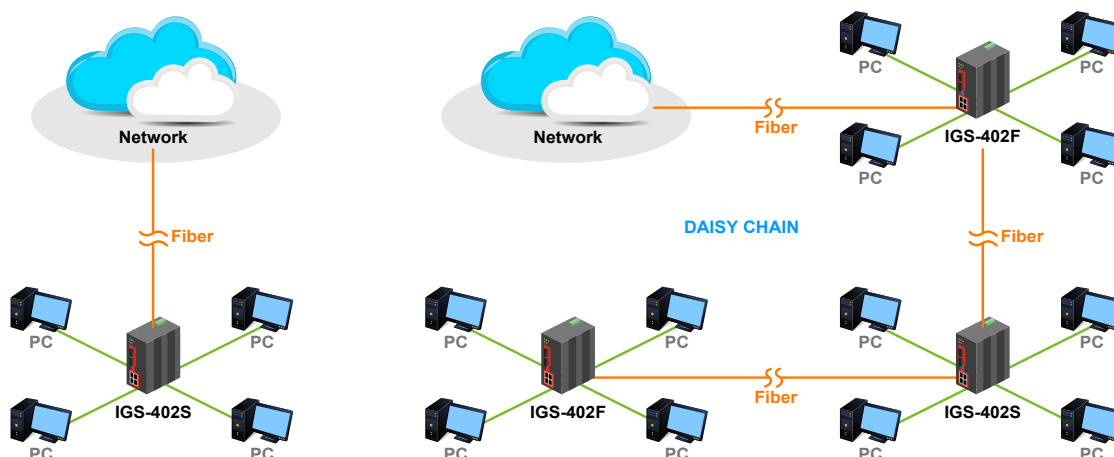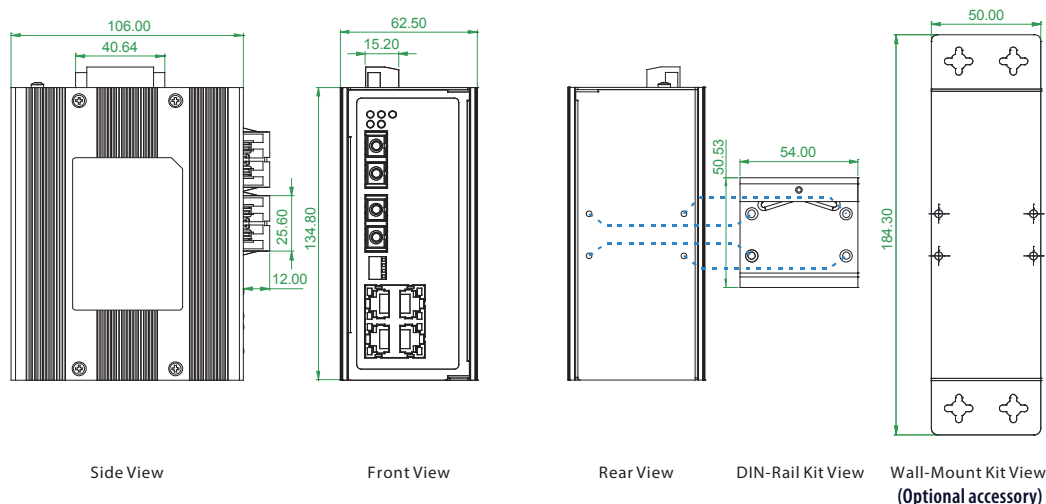
Ordering Information

Model Name	Total Port	RJ45 UTP port 10/100/1000 Base-T	Fiber Port		Power Input Redundant	Certification					Operating Temperature
			1000Base-X	100/1000Base-X		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℃
IGS-402F-E	6	4	2 SC		12/24/48VDC	V	V	V	V	V	-40~75℃
IGS-402S	6	4		2 SFP	12/24/48VDC	V	V	V	V	V	-10~60℃
IGS-402S-E	6	4		2 SFP	12/24/48VDC	V	V	V	V	V	-40~75℃

■ Model Naming Rule

IGS — 4 02S — E — SC002

- Industrial Gigabit Switch
- 4: 4x GbE UTP
- 02S: 2x GbE SFP
  02F: 2x GbE Fiber
- E: -40~75℃
  Blank: -10~60℃
- See below for more detail (For IGS-402F)

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

IGS – 402F – ☐ – ☐☐☐☐☐

Port Number | Temperature | Connector Type | Connectivity Distance

Example: IGS – 402F – E – SC002

■ Package List

- One device of the series
- Protective caps for SFP ports (for IGS-402S)
- Quick 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

■ 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℃ (-40~85℃)
ISFP-S7020-31-(E)	Industrial SFP 1000Base-LX, S/M, 20km, wave length 1310nm, 15dB, LC, -10~70℃ (-40~85℃)
ISFP-T7T00-00-(E)	Industrial SFP 1000Base-T UTP 100meter, -10~70℃ (-40~85℃)
ISFP-M5002-31-(E)	Industrial SFP 155M 100Base-FX, MM, 2km, wave length 1310nm, 12dB, LC, -10~70℃ (-40~85℃)
ISFP-S5030-31-(E)	Industrial SFP 155M 100Base-FX, SM, 30km, 1310nm, 19dB, LC, -10~70℃ (-40~85℃)

SFP Naming Rule

ISFP — S 7 040 — 31 — D E

- Industrial SFP Transceiver
- M: Multi Mode
  S: Single Mode
  T: UTP
- 9: 10G
  7: GbE
  5: FE
- Distance
  T00: (UTP)
  000: (500m)
  002: (2km)
  020: (20km)
  040: (40km)
- Wavelength
  00: UTP
  85: 850nm
  31:1310nm
  55:1550nm
  WA: TX/1310nm (Bidi mode A)
  WB: TX/1550nm (Bidi Mode B)
- D: DDMI
  Blank: Non DDMI
- E:-40~85℃
  Blank:0~70℃

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Unmanaged GbE Switch   IGS-402F & IGS-402S

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