IGS-402S-4PU

4x 10/100/1000Base-T +
2x 100/1000Base-X SFP w/ 4x PoE++
(240W, 60W/per port)

IGS-402S-4PH24

4x 100/1000Base-T +
2x 100/1000Base-X SFP w/ 4x PoE+
(120W, 24V Booster)

IGS-402F-4PH24

4x 10/100/1000Base-T +
2x 1000Base-SX/LX Fiber w/ 4x PoE+
(120W, 24V Booster)

IGS-600-4PH24

6x 10/100/1000Base-T with 4x PoE+
(120W, 24V Booster)

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

These models are 6 port unmanaged industrial grade Gigabit PoE switches with 4x 10/100/1000Base-T PoE 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, security automation applications, IP Surveillance, intelligent transportation systems (ITS) and are also suitable for many military and utility market applications where environmental conditions exceed commercial product specifications (See figure 1). 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 RJ-45+ 2x 100/1000Base-X SFP (Total 6 Port) with **4x PoE++**, total 240W power budget (IGS-402S-4PU)
- 4x10/100/1000Base-T RJ-45+ 2x 100/1000Base-X SFP (Total 6 Port)with 4x PoE+, total 120W power budget (IGS-402S-4PH24)
- 4x 10/100/1000Base-T RJ-45+ 2x 1000Base-X SC (Total 6 Port) with 4x PoE+, total 120W power budget (IGS-402F-4PH24)
- 6x 10/100/1000Base-T RJ-45 (Total 6 Port) with 4x PoE+, total 120W power budget (IGS-600-4PH24)
- Provides 4-port IEEE802.3bt/at/af **PoE++** output, **60W/per port** (IGS-402S-4PU)
- Provides 4-port IEEE802.3at/af PoE+ output, 30W/per port (IGS-402S-4PH24, IGS-402F-4PH24, IGS-600-4PH24)
- 48VDC (44~57VDC) redundant dual input power (IGS-402S-4PU)
- 24/48VDC (20~57VDC) redundant dual input power with built-in very high efficiency booster(94~97%) to rise up 55 VDC for PoE output (IGS-402S-4PH24, IGS-402F-4PH24, IGS-600-4PH24)
- Regulate PoE output voltage (55VDC) to stabilize PoE device, and guarantee delivery PoE power distance to 100meter (IGS-402S-4PH24, IGS-402F-4PH24, IGS-600-4PH24) (Figure 2)
- Supports broadcast storm protection
- Supports power failure alarm message by relay
- Supports flow control
- Jumbo frame support
- Supports DIN Rail or wall mounting installation
- IP30 rugged metal housing and fanless
- Wide operating temperature -40 ~ 75℃ ("E" model)
- UL60950-1, CE, FCC, EN50121-4 certification
- Heavy industrial grade EMS, EMI, EN61000-6-2, EN61000-6-4 certified

Specifications

IEEE Standard	IEEE 802.3 10Base-T Ethernet
	IEEE 802.3u 100Base-TX Fast Ethernet
	IEEE 802.3ab 1000Base-T Gigabit Ethernet
	IEEE 802.3z 1000Base-X Gigabit Ethernet
	IEEE 802.3x Flow Control and Back Pressure
	IEEE 802.3af PoE (Power over Ethernet)
	IEEE 802.3at PoE+ (Power over Ethernet enhancements)
	IEEE 802.3bt PoE++(4 pairs Power over Ethernet)
Switch Architecture	Back-plane (Switching Fabric): 12Gbps Full wire-speed
Data Processing	Store and Forward
Flow Control	IEEE 802.3x flow control, back pressure flow control
Provides Broadcast Storm Protection	Enable / Disable set by DIP SW
Jumbo Frame	10K Bytes
MAC Address Table	8K
Packet Buffer Size	1Mbits
PoE standard & RJ-45 Pin Assignment	**IGS-402S-4PU:** 4x IEEE 802.3bt/at/af PoE++ 4 pairs PoE, PoE++ Positive (V+) : RJ-45 pin 1, 2, 4, 5 Negative (V-) : RJ-45 pin 3, 6, 7, 8 Data (1,2,3,6,4,5,7,8)
	IGS-402S-4PH24, IGS-402F-4PH24, IGS-600-4PH24: 4x IEEE 802.3at/af PoE+ 2 pairs PoE, PoE+ Positive (V+) : RJ-45 pin 1, 2. Negative (V-) : RJ-45 pin 3, 6. Data (1,2,3,6,4,5,7,8)

Network Connector	4 x RJ-45 (IGS-402S-4PU, IGS-402S-4PH24, IGS-402F-4PH24) 6 x RJ-45 (IGS-600-4PH24) 10/100/1000Base-T auto negotiation speed, Auto MDI/MDI-X function, Full/Half duplex	
	2x 100/1000Base-X SFP (IGS-402S-4PU, IGS-402S-4PH24) 2x1000Base-X Fiber connector: SC Muti Mode or Single Mode (IGS-402F-4PH24)	
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)	
	Fiber Per port: Link/Active (Green)	
	Per Port PoE LED • Active : ON • Inactive : OFF • Fault : Flash (Fault: Over Load, Short Circuit, Port failed at Startup)	
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 3	ON : Fiber 2 for 100Base-FX SFP OFF : Fiber 2 for Gigabit SFP (for IGS-402S-4PU, IGS-402S-4PH24)
	DIP 4	ON : Fiber 1 for 100Base-FX SFP OFF : Fiber 1 for Gigabit SFP (for IGS-402S-4PU, IGS-402S-4PH24)

Reverse Polarity Protection	Supported for Power Input
Overload Current Protection	Supported
Power Supply	**IGS-402S-4PU:** Redundant Dual DC 48V (44~57VDC) input power (Removable terminal block) (50~57V input is recommended for IEEE802.3at PoE+ in 30W applications) (50~57V input is recommended for IEEE802.3bt PoE++ in 60W applications) **IGS-402S-4PH24, IGS-402F-4PH24, IGS-600-4PH24:** Redundant Dual DC 24/48V (20~57VDC) input power (Removable Terminal Block) Built-in very high efficiency booster(94~97%) to rise up 55 VDC for PoE output Regulated PoE output voltage (55VDC) to stabilize PoE device, and guarantee delivery PoE power distance to 100meter (Figure 2)
Power Consumption	

Input Voltage	IGS-402S-4PH24	IGS-402F-4PH24	IGS-600-4PH24
24VDC	143.3W	143.2W	142.9W
48VDC	138.2W	138.2W	139.6W

(Include full load 120W PoE output)

IGS-402S-4PU Power consumption

Input Voltage	Total Power Consumption	Device Power Consumption	PoE Budget
50VDC	250.3W	8W	240W

PoE Power Budget	Maximum PoE Output power budget 240W, **60W/ per port** (IGS-402S-4PU) Maximum PoE Output power budget 120W, 30W/ per port (IGS-402S-4PH24, IGS-402F-4PH24, IGS-600-4PH24)
Alarm Relay Contact	Relay outputs with current carrying capacity of 1A @24VDC
Removable Terminal Block	Provides 2 Redundant power, Alarm relay contact, 6 Pin
Operating Temperature	-10 ~ 60°C (IGS-402S-4PU, IGS-402S-4PH24, IGS-402F-4PH24, IGS-600-4PH24) -40 ~ 75°C (IGS-402S-4PUE, IGS-402S-4PHE24, IGS-402F-4PHE24, IGS-600-4PHE24)
Operating Humidity	5% to 95% (Non-condensing)
Dimensions	106 x 62.5 x 134.8mm (D X W X H) (IGS-402S-4PH24, IGS-402F-4PH24, IGS-600-4PH24) 106 x 62.5 x135mm (IGS-402S-4PU)
Housing	Rugged Metal, IP30 Protection, Fanless
Weight	0.84kg (IGS-402S-4PH24) 0.68kg (IGS-402F-4PH24) 0.84kg (IGS-600-4PH24) 0.74kg (IGS-402S-4PU)
Installation Mounting	DIN Rail mounting, or wall mounting (Optional accessories)
MTBF	736,988 Hours @25°C (IGS-402S-4PH24) 635,099 Hours @25°C (IGS-402F-4PH24) 649,579 Hours @25°C (IGS-600-4PH24) 688,499Hours (IGS-402S-4PU) (MIL-HDBK-217)
Warranty	5 years
Certification	
EMC	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 (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
Safety	UL60950-1 (IGS-402S-4PH24, IGS-402F-4PH24, IGS-600-4PH24)
Shock	IEC 60068-2-27
Freefall	IEC 60068-2-32
Vibration	IEC 60068-2-6

Application

Figure 1 : PoE Gigabit Ethernet Switch Transmission

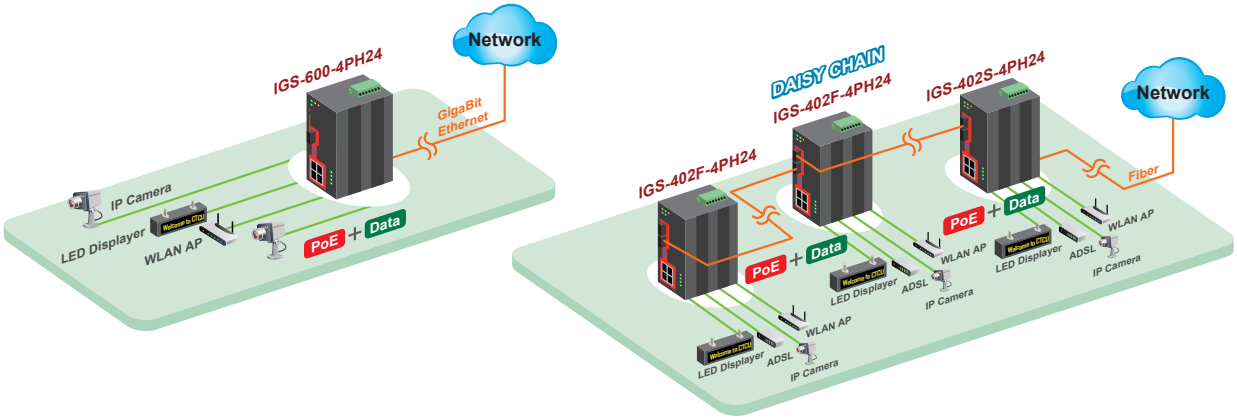
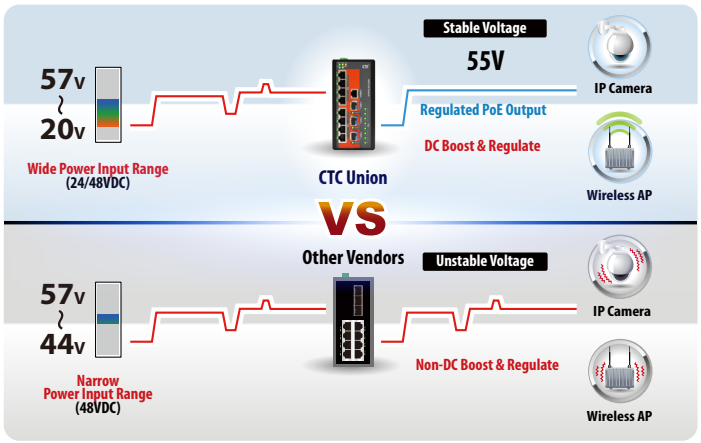


Figure 2 : High efficiency boost technology for PoE

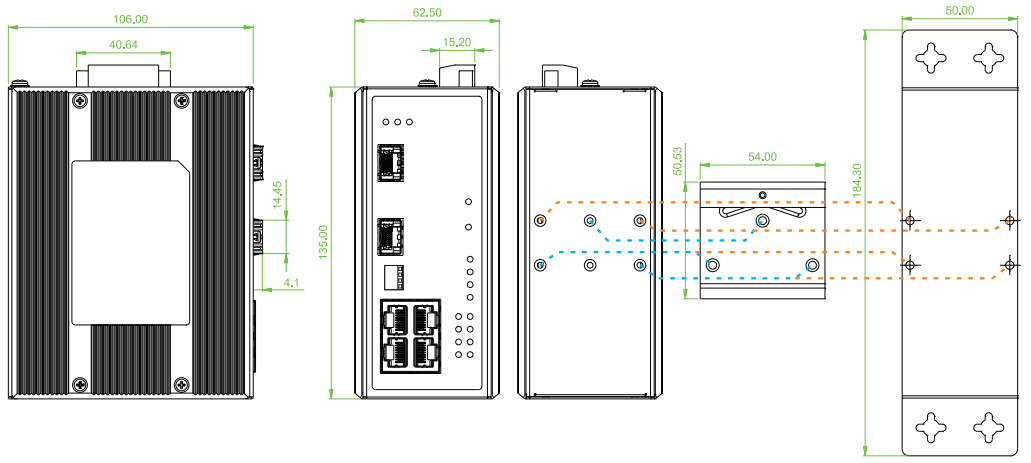


- Regulated PoE output voltage (55VDC) to stabilize PoE device
- Guarantee delivery PoE power distance to 100 meters
- Wide range input power 24/48VDC (20~57VDC)
- Built-in very high efficiency (94~97%) to boost PoE output voltage

Specifications & design are subject to change without prior notice. Please visit CTC Union website for more details.

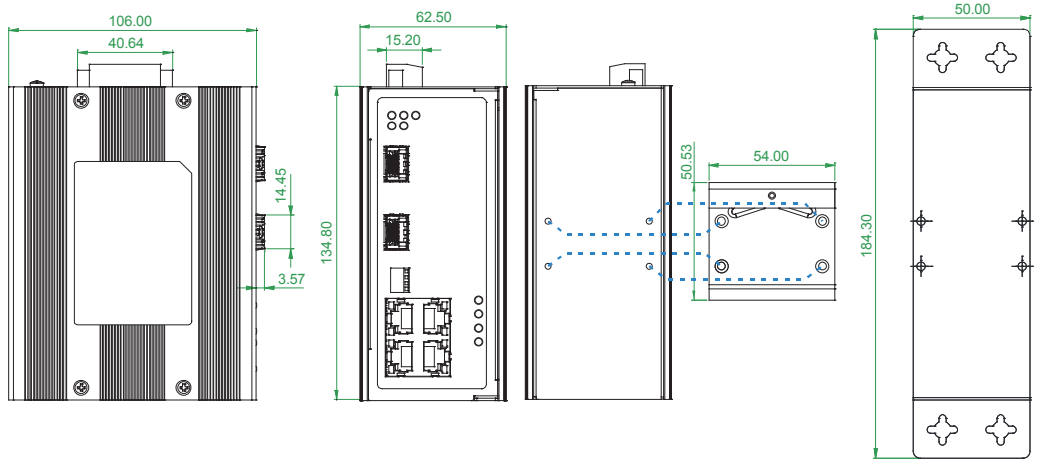
Dimensions

▶ IGS-402S-4PU



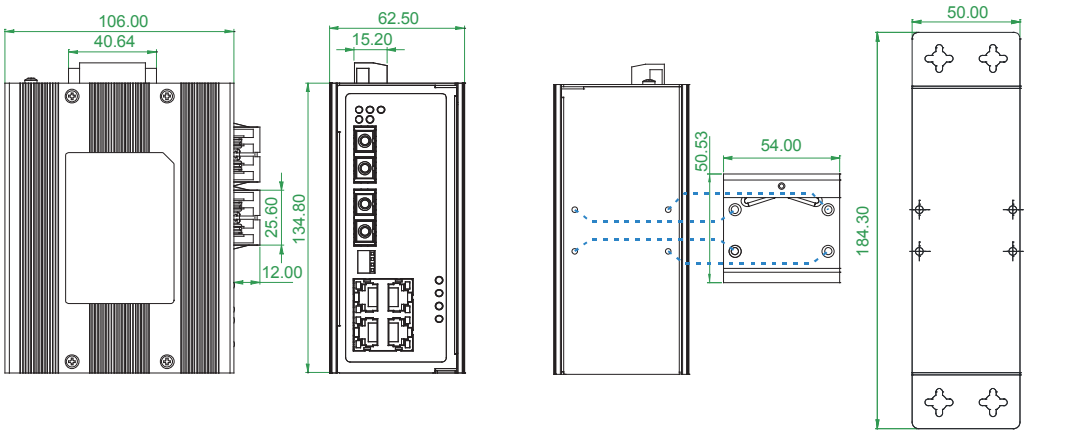
Side View | Front View | Rear View | DIN-Rail Kit View | Wall-Mount Kit View (Optional accessory)

▶ IGS-402S-4PH24



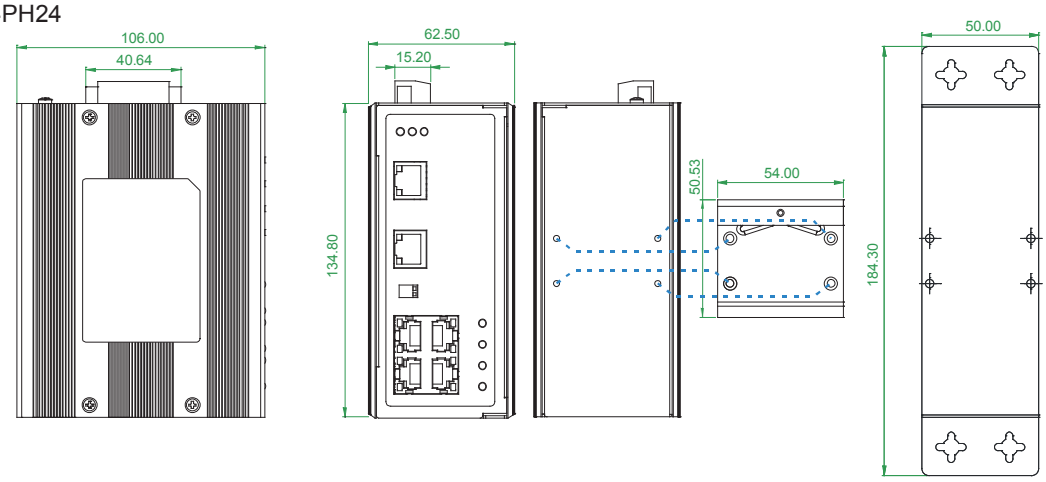
Side View | Front View | Rear View | DIN-Rail Kit View | Wall-Mount Kit View (Optional accessory)

▶ IGS-402F-4PH24



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

▶ IGS-600-4PH24



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

Ordering Information

Model Name	Total Port	RJ45 UTP Port	Fiber Port		PoE port			Input power	Certification			Operating Temperture
		10/100/1000 Base-T(X)	1000Base-X Base-X	100/1000 Base-X	IEEE 802.3at	IEEE 802.3bt (60W)	Power Budget	Redundant	Railway EN50121-4	Safety UL60950-1	CE, FCC EN61000-6-2 EN61000-6-4	
IGS-402S-4PU	6	4		2 SFP		4	240W	48VDC	V		V	-10~60°C
IGS-402S-4PUE	6	4		2 SFP		4	240W	48VDC	V		V	-40~75°C
IGS-402S-4PH24	6	4		2 SFP	4		120W	24/48VDC	V	V	V	-10~60°C
IGS-402S-4PHE24	6	4		2 SFP	4		120W	24/48VDC	V	V	V	-40~75°C
IGS-402F-4PH24	6	4	2 SC		4		120W	24/48VDC	V	V	V	-10~60°C
IGS-402F-4PHE24	6	4	2 SC		4		120W	24/48VDC	V	V	V	-40~75°C
IGS-600-4PH24	6	6			4		120W	24/48VDC	V	V	V	-10~60°C
IGS-600-4PHE24	6	6			4		120W	24/48VDC	V	V	V	-40~75°C

Model Naming Rule

IGS – 4 – 02S – 4PH□24 – SC002

- IGS: Industrial Gigabit Switch
- 4: 4x GbE UTP; 6: 6x GbE UTP
- 02S: 2x GbE SFP; 02F: 2x GbE SC; 00: 0x GbE Fiber
- 4PHE24: 4x High Power PoE 24V Booster -40~75°C
- 4PH24: 4x High Power PoE 24V Booster -10~60°C
- See below for more detail (For IGS-402F-4PH24)

Connector Type / Connectivity Distance

IGS-402F –4PHE24 – □□□□□

Example: IGS-402F –4PHE24 – SC002

Fiber Connector Type	Connectivity Distance
SC (IGS-402F-4PH24)	SC001: 500m (SC, M/M) SC002: 2km (SC, 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)

Optional Accessories

Wall mount kit accessories

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

Package List

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

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-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 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)

SFP Naming Rule

ISFP – S – 7 – 040 – 31 – D – E

- ISFP: Industrial SFP Transceiver
- S: M: Multi Mode; S: Single Mode; T: UTP
- 7: 9: 10G; 7: GbE; 5: FE
- 040: Distance — T00: (UTP); 000: (500m); 002: (2km); 020: (20km); 040: (40km)
- 31: 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: E:-40~85°C; Blank:0~70°C

Specifications & design are subject to change without prior notice. Please visit CTC Union website for more details.