CTC **CTC Union Technologies Co., Ltd.**
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Quick Installation Guide

IGS-401F-4PH24,402F-4PH24, IGS-402S-4PH24
IGS-401F-4PHE24, 402F-4PHE24, IGS-402S-4PHE24
Industrial Grade Gigabit PoE Switches

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Introduction

IGS-401F/402F/402S-4PH24 models are non-managed industrial grade Gigabit PoE (Power over Ethernet) switches 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 and 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 (0 to 60°C) and wide operating temperature range models (-40 to 75°C) fulfill the special needs of industrial automation applications.

Features
- Redundant dual DC inputs 24/48VDC
- DC Power "boost" feature
- IP30 rugged metal housing
- Wide temperature range -40~75C (-E models)
- Support for Ethernet jumbo frames
- DIP switch enable/disable broadcast storm filter
- UL508, CE, FCC, EN50121-4 Rail traffic
- Industrial grade EN61000-6-2 EMS and EN61000-6-4 EMI

Specifications
Ethernet Interface
- Connector: RJ-45 (shielded)
- 4 PoE enabled ports, Alternate A Mode
- Auto MDI/MDI-X
- Speed: 10/100/1000Base-T (Auto)
- Duplex: Full/Half (Auto-negotiation per IEEE802.3u)
- Supports IEEE802.3x Flow Control
- Store & Forward Switching Fabric: 12Gbps non-blocking
- Packet buffer: 1mb
- Standards: IEEE802.3, 802.3u, 802.3x, 802.3ab, 802.3z
  802.3af (15.4W PoE), 802.3at (30W PoE, 120W total)
- 8K MAC table
- MTU: 64~10240 bytes
- Broadcast Storm protection (enable/disable by DIP)
- Positive (VCC+) pins 1,2 (55VDC ±1V)
- Negative (VCC-) pins 3,6

Specifications (cont.)
Optical Ethernet Interface
- 1000Base-X, 1-port (401), 2-ports (402)
- Fixed SC connectors (401F and 402F models)
- Pluggable SFP x 2 (402S model)
- Multimode (2km) 50/125um, 62.5/125um
- Single mode (30 or 50km) 9/125um
- Wavelength: 1310nm (S/M or M/M)
Power
- Absolute range: 20~57VDC
- Reverse polarity protection: Yes
- Dual power inputs: Yes
- Connector: removable terminal block
- Consumption: 2.89A@48VDC, 138.2Watts (120W for PoE)
  5.97A@24VDC, 143.2Watts (120W for PoE)
Mechanical
- Water & Dust Proof : IP30 Protection
- Dimensions : 106 x 62.5 x 135mm (D x W x H)
- Mounting : DIN-Rail, Wall Mount (kits included)
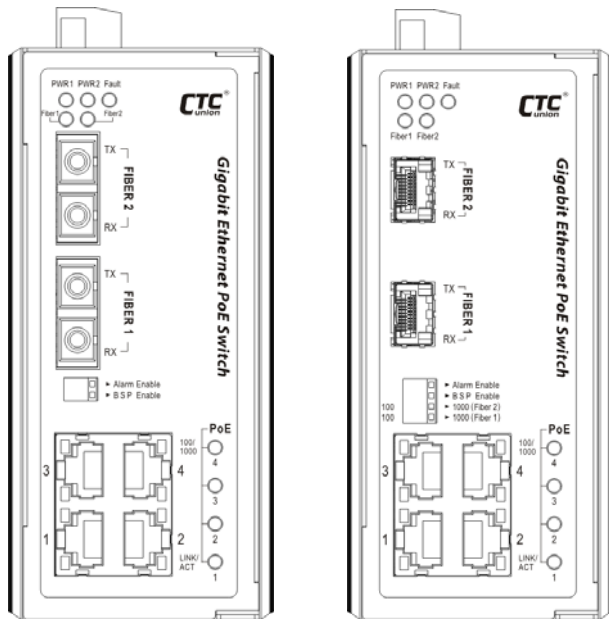- Weight : approximately 850 g

Environmental
- Operating Temperature :
  - 0°C ~ 60°C, -40°C ~ 75°C (wide temp. for *-E)
- Storage Temperature: -40°C ~ 85°C
- Humidity : 5 ~ 95% (non-condensing)

Certifications
- EMI: FCC Part 15 sub B class A, EN55022 Class A, EN61000-6-4
- EMS: (Electromagnetic Susceptibility)
  - EN61000-6-2 Immunity for Industrial Environment
  - 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 (Magnetic Field) Level 3,Criteria A
- Safety: UL508 (pending)
- Railway Traffic: EN50121-4
- Shock: EN60068-2-27 Freefall: EN60068-2-32
- Vibration: EN60068-2-6
- MTBF: 316408 hr(401F), 306704 hr(402F). 334448 hr(402S)
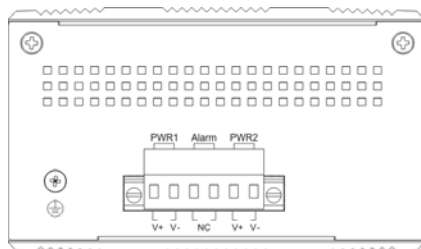
Connectors
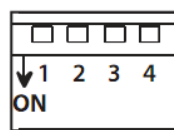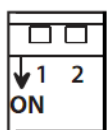

IGS-402F-4PH24   IGS-402S-4PH24

Both models have four electrical 10/100/1000M Auto Negotiation and Auto MDI/MDI-X Ethernet LAN ports (labeled 1 thru 4) that utilize shielded RJ-45 connectors and support PoE (Power over Ethernet) per IEEE802.3af (15.4W) or IEEE802.3at (30W) for connection to standard PoE PD (Power Device) such as IP Cameras, Access Points, IP Phones, Digital Signage, etc.

IGS-402F-4PH24 gigabit optical ports (Fiber 1 / Fiber 2) use fixed transceivers with SC or ST optical connections for multimode or single mode fiber depending on model. (IGS-401F-4PH24 model has only one fiber port.) IGS-402S-4PH24 model provides SFP cages and supports dual rate, 125Mbps or 1.25Gbps SFP modules, inserted into Fiber 1 and Fiber 2 ports. Dual rate support allows use of specific SFP modules for fiber connection to other gigabit Ethernet (1000Base-X) equipment or to legacy Fast Ethernet fiber (100Base-FX).

LED Indicators

IGS-401F/402F/402S-4PH24 have LEDs on the front face that report the condition of power, fault, PoE, Fiber link, LAN link and speed.

PWR1: This green LED will light if power is connected and active at the PWR1 terminal connection.

PWR2: This green LED will light if power is connected and active at the PWR2 terminal connection.

Fault: This amber LED will light if one of the power inputs has fault condition and as long as DIP sw#1 is OFF.

Fiber 1: This green LED will light when the fiber 1 port has an optical link and will flash when there is Ethernet traffic.

Fiber 2: This green LED will light when the fiber 2 port has an optical link and will flash when there is Ethernet traffic.

100/1000: This dual color LED will light with amber color when the LAN connected speed is 1000M, it will light with green color when the LAN speed is 100M and will remain off if the connected speed is 10M.

LINK/ACT: This green LED will light when the LAN port has a link and will flash when there is Ethernet traffic.

PoE: These green LEDs will light when the LAN has successfully negotiated PoE and is supplying output power to the remote connected PD device.

Power, Alarm and DIP switch

A removable terminal block provides both power and alarm connections. Power can be provided through the dual inputs from separate sources. One electrical relay can be wired into an alarm circuit. The relay is connected as Normally Closed (will open upon alarm condition).
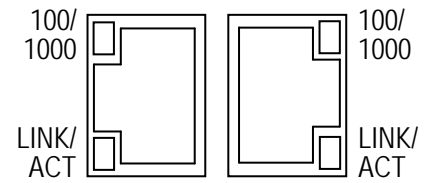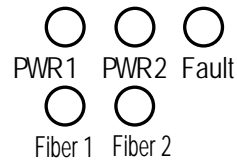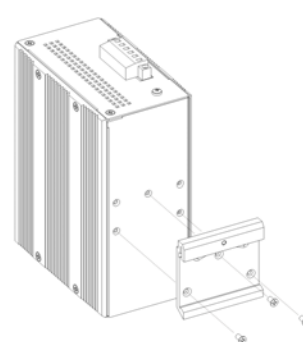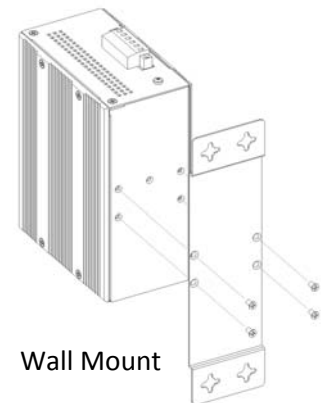

IGS-401F/402F uses a 2-pole DIP switch for configuration, while the IGS-402S uses a 4-pole DIP switch for configuration. Each pole of the switch has the following functions:

1. **Alarm Enable**: When 'On' this switch will disable alarm relay and fault LED if there is a power failure in one supply. If only connecting to a single power source, place this switch 'On' to disable alarm.

2. **BSP**: When 'On' this switch will disable the broadcast storm protection feature which is enabled by default.

3. **Fiber 2**: This dual rate fiber port (IGS-402S-4PH24 ONLY) supports optical Ethernet rate of 100M or 1G, depending on the setting and the inserted SFP module. When set to 'On', the port supports Fast Ethernet rate and should use an SFP rated for 125~155Mbps. When set 'Off', the port is configured for gigabit Ethernet and requires a 1.25gbps SFP module.

4. **Fiber 1**: The same settings as for Fiber 2 port.

Installation

IGS-401F-4PH24/402F(S)-4PH24 comes with both wall mount and DIN rail hardware brackets. When installing the DIN rail bracket, be sure to correctly align the orientation pin.
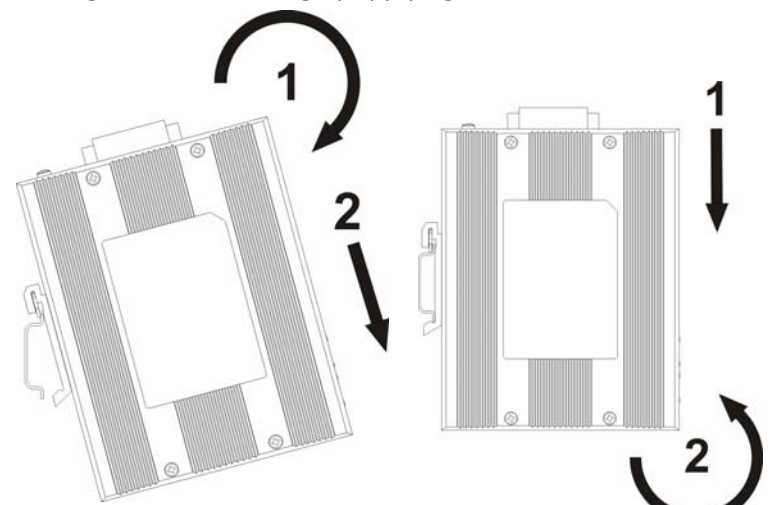

DIN Rail   Wall Mount

IGS-401F/402F(S)-4PH24 with DIN Rail bracket has a steel spring in the upper rail of the bracket. This spring is compressed for mounting and un-mounting by applying downward force.

mounting   un-mounting

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