

IGS-401F, IGS-402F, IGS-402S
IGS-401F-E, IGS-402F-E, IGS-402S-E
 Industrial Grade Gigabit Ethernet Switches



sales@ctcu.com

CTC Union Technologies Co., Ltd.
 Far Eastern Vienna Technology Center
 (Neihu Technology Park)
 8F, No. 60 Zhouzi St., Neihu District, Taipei 114
 Taiwan

T +886-2-26591021
 F +886-2-26590237
 E sales@ctcu.com

To download this QIG or a more complete user manual, please visit
<http://www.ctcu.com/Industrial/>



ISO 9001
 ISO 14001

©2013 CTC Union Technologies Co., Ltd.
 All trademarks are the property of their respective owners.
 Technical information in this document is subject to change without notice.

Introduction

IGS-401F/402F(S) models are non-managed Gigabit 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
- IP30 rugged metal housing
- Wide temperature range -40~75C (-E models)
- Support for Ethernet jumbo frames
- Industrial grade EMS and EMI certification
- DIP switch enable/disable broadcast storm filter
- UL508, CE, FCC, EN50121-4 Rail traffic
- Industrial EN61000-6-2 EMS, EN61000-6-4 EMI

Specifications

Ethernet Interface

- Connector: RJ-45 (shielded)
- 4-ports
- 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 Switch
- Switching Fabric: 12gbps non-blocking
- Packet buffer: 1mb
- Standards: IEEE802.3, 802.3u, 802.3x, 802.3ab, 802.3z
- 8K MAC table
- MTU: 64~10240 bytes
- Broadcast Storm protection (enable/disable by DIP)

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: 0.163A@48VDC, 7.83Watts

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 : 680 g

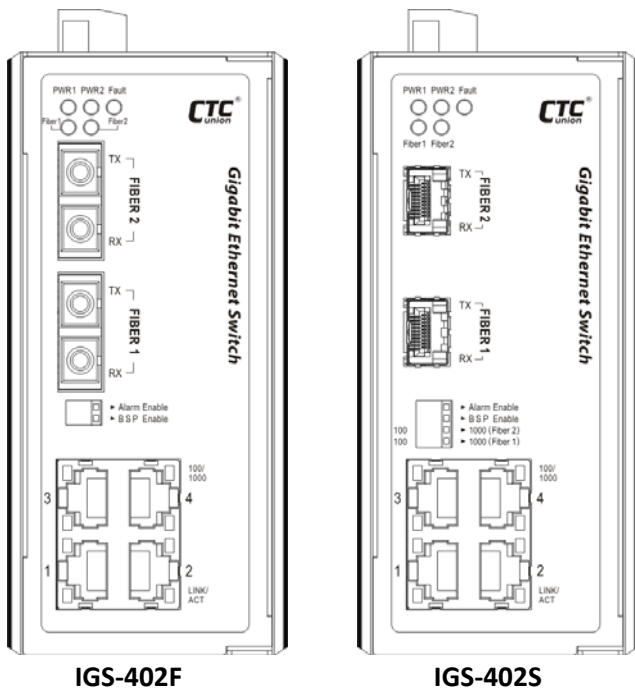
Environmental

- 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: 407596 hr(401F), 391633 hr(402F), 438031 hr (402S)

Connectors



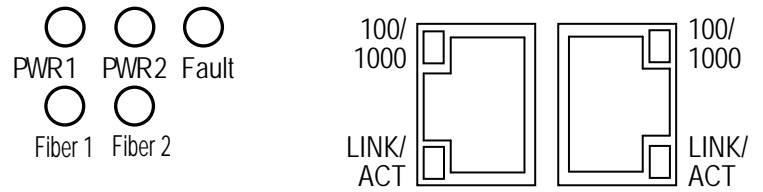
Both models have four electrical LAN ports (labeled 1, 2, 3, 4) that utilize shielded RJ-45 connectors. These ports support 10/100/1000M Auto Negotiation and Auto MDI/MDI-X Ethernet.

IGS-402F 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** model has only one fiber port.)

IGS-402S 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 and **IGS-402F(S)** have LEDs on the front face that report the condition of power, fault, 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.

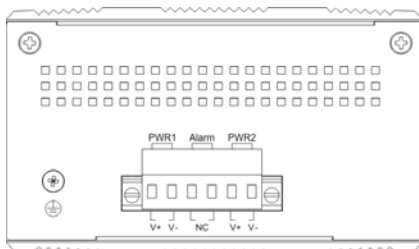
Fiber 1: This green LED will light when the fiber 1 port has an optical link and will flash when there is Ethernet traffic.

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.

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.

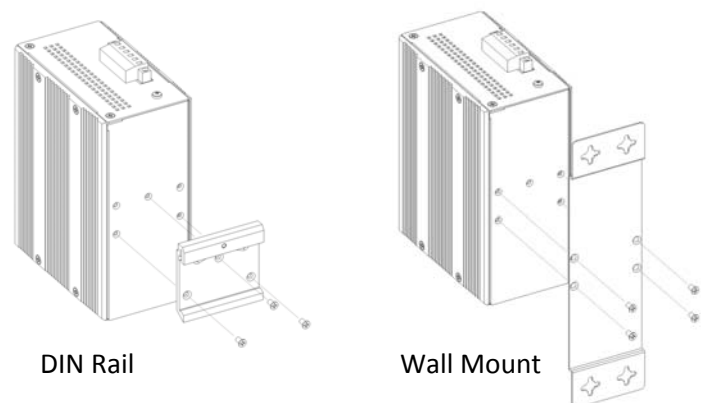
2. **BSP:** When 'On' this switch will disable the broadcast storm protection feature which is enabled by default.

3. **Fiber 2:** This dual rate fiber port (**IGS-402S** 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/402F(S) comes with both wall mount and DIN rail hardware brackets. When installing the DIN rail bracket, be sure to correctly align the orientation pin.



IGS-401F/402F(S) 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.

