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Quick Installation Guide

IGS-501S
IGS-501S-E

Industrial Grade Gigabit Ethernet Switches

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Introduction

IGS-501S & IGS-501S-E are 5-port 10/100/1000Base-T plus 1-port 100/1000Base-X 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 (-10°C to 60°C) and wide operating temperature range models (-40°C to 75°C) fulfill the special needs of industrial automation applications.

Features

- Redundant dual DC inputs 12/24/48VDC
- Fanless IP30 rugged metal housing
- Wide temperature range -40°C~75°C (IGS-501S-E)
- DIP switch enable/disable broadcast storm protection
- Industrial grade EMS, EMI, EN61000-6-2, EN61000-6-4

Specifications

Ethernet Interface

- Standards: IEEE802.3, 802.3u, 802.3ab, 802.3x
- Connector: RJ-45 (shielded)
- Speed: 5 x 10/100/1000Base-T (Auto per 802.3u)

Optical Interface

- Standards: IEEE802.3u, 802.3ab
- Connector: SFP
- Speed: 1 x 100/1000Base-X

Switch Features

- Duplex: Full/Half (Auto per 802.3u)
- Supports IEEE802.3x Flow Control
- Store & Forward Switch
- Switching Fabric: 12Gbps
- Packet Buffer: 512Kbytes
- MAC Table: 8K
- Jumbo Frame: 9.6KBytes
- Broadcast Storm protection

Specifications (cont.)

Power

- Redundant dual DC 12/24/48V (9.6~60VDC) input power
- Reverse polarity protection: Yes
- Dual power inputs: Yes
- Connector: Terminal block
- Consumption: 12VDC—3.9W, 24VDC—3.9W, 48VDC—5.3W

Mechanical

- Water & Dust Proof: IP30 Protection
- Dimensions: 106 mm (D) x 38.6 mm (W) x 142 mm (H)
- Mounting: DIN-Rail, Wall Mount (Kits included)
- Weight: 415 g

Environmental

- Operating Temperature : -10°C~60°C (IGS-501)
  -40°C~75°C (IGS-501-E)
- Storage Temperature: -40°C~85°C
- Humidity: 5%~95% (Non-condensing)

Certifications

- EMC: CE
- EMI (Electromagnetic Interference): FCC, 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
- Shock: EN60068-2-27
- Freefall: EN60068-2-32
- Vibration: EN60068-2-6
- MTBF (MIL-HDBK-217): 569,039 hours

Connectors

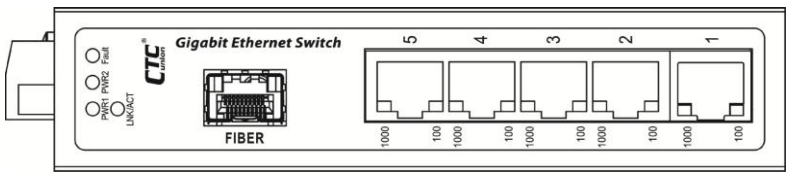

Figure 1. IGS-501S(-E) Front Panel

Ports

IGS-501S & IGS-501S(-E) are 6-port Gigabit industrial non-managed switches that utilize 5 shielded RJ-45 connectors and 1 optical SFP port. LAN connections (labeled 1~5) support 10/100/1000M Auto Negotiation and Auto MDI/MDI-X Ethernet; while the fiber port (labeled FIBER) supports 100/1000M dual speed SFP transceiver.

Power & Alarm

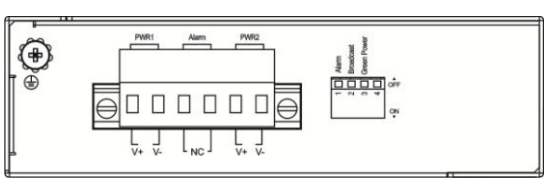

Figure 2. Terminal Block

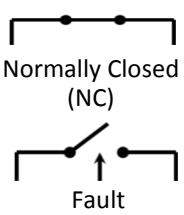

Figure 3. Alarm Relay Circuit

A removable terminal block on the top panel provides both power and alarm connections. Power can be provided through the dual inputs from separate sources. The alarm relay contact can be wired into an alarm circuit which senses an alarm condition when the contact is broken. The alarm relay is normally closed when there is no alarm condition. If either power source has no power input, the alarm relay will “open”. Please note that the alarm relay contact can only support 1A current at 24VDC. Do not apply voltage and current that exceed these specifications.

DIP Switch

IGS-501S(-E) uses a 4-pole DIP switch for configuration. Each pole of the switch has the following functions:

DIP No.	Status	Function	Description
1	OFF	Alarm Enable	Provide alarm relay and fault LED indication if there is a power failure in one supply.
	ON	Alarm Disable	Disable alarm relay and fault LED if there is a power failure in one supply. Connecting to a single power source, place this switch ON to disable alarm.
2	OFF	BSP Enable	Enable broadcast storm protection.
	ON	BSP Disable	Disable the broadcast storm protection feature.
3	OFF	Enable Green Power	Enable IEEE802.3az Green Power function. Power usage will be reduced when there is low or no traffic utilization.
	ON	Disable Green Power	Disable IEEE802.3az Green Power function. No power saving plan will be carried out when there is low or no traffic utilization.
4	OFF	SFP Speed 1000M	SFP speed is 1000M.
	ON	SFP Speed 100M	SFP speed is 100M.

NOTE: By default, all DIP switch poles are set to OFF.

LED Indicators

IGS-501S(-E) switches have LEDs on the front panel that report the condition of power, alarm, LAN link and speed.

Figure 4. LED Indicators

LED	Color	Definition
PWR1	Green	Power is connected and active at the PWR1 input terminal connection.
	Off	PWR1 is not connected.
PWR2	Green	Power is connected and active at the PWR2 input terminal connection.
	Off	PWR2 is not connected.
Fault	Amber	One of the power inputs has fault condition (DIP No. 1 must be OFF).
	Off	Normal operation without power faults or DIP No.1 is ON.
1000	Yellow	The connected LAN speed is 1000M.
	Blinking	Blinking when there is Ethernet traffic.
	Off	No Ethernet link.
100	Green	The connected LAN speed is 10M or 100M.
	Blinking	Blinking when there is Ethernet traffic.
	Off	No Ethernet link.
Link/ACT	Green	The connected fiber speed is 100M or 1000M.
	Off	This fiber link is not connected or down.

Installation

The switch comes with both wall mount and DIN rail hardware brackets. When installing the DIN rail bracket, be sure to correctly align the orientation pin.

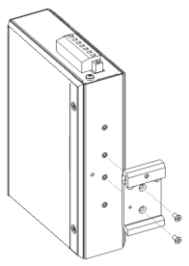

Figure 5. DIN Rail

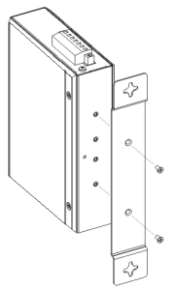

Figure 6. Wall Mount

The switch 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.

Figure 7. Mounting

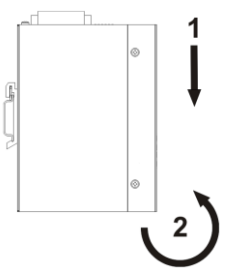

Figure 8. Un-mounting

Application

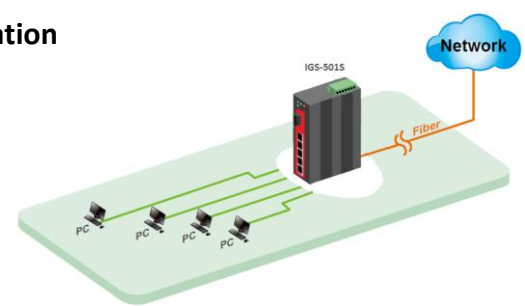

Figure 9. Gigabit Ethernet Switch Transmission