

Figure 9. Ethernet Switch Transmission

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/>



©2015 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.

IFS-802GS-8PH
IFS-802GS-8PHE

8 x 10/100Base-TX + 2 x 1000Base-X SFP with 8 High Power PoE Switch (Hardened)



sales@ctcu.com

Introduction

IFS-802GS-8PH & IFS-802GS-8PHE are unmanaged industrial grade Fast Ethernet PoE 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~60°C) and wide operating temperature range models (-40°C~75°C) fulfill the special needs of industrial automation applications.

Package List

- IFS-802GS-8PH(E) Device
- Protective caps for SFP slots
- Quick installation guide
- Din rail with screws
- Wall mount bracket with screws
- Terminal block

Features

- Redundant dual 48VDC inputs (44~57VDC)
- IP30 rugged metal housing and fanless design
- 8-port IEEE802.3at/af PoE output (30W per port)
- Maximum PoE output power budget 240W
- Wide temperature range -40°C~75°C (IFS-802GS-8PHE)
- CE, FCC, EN50121-4 Rail traffic
- Industrial grade EN61000-6-2 EMS and EN61000-6-4 EMI

Specifications

Ethernet Interface

- 8 x RJ-45 (shielded) ports
- Speed: 10/100M
- Duplex: Full/Half (Auto-negotiation per IEEE802.3u)
- Auto MDI/MDI-X function

Optical

- 2 x SFP slots
- Speed: 1000M

Switch

- Store & Forward Switch
- Supports IEEE802.3x Flow Control
- Switching Fabric: 5.6Gbps non-blocking
- Standards: IEEE802.3, 802.3u, 802.3x, 802.3z
- MAC Table: 8K
- Packet Buffer Size: 1Mbits

Specifications (cont.)

Power over Ethernet

- 8 x PoE-enabled ports, Alternate A Mode
- Support IEEE802.3af 15.4watts PoE per port
- Support IEEE802.3at 30watts PoE+ per port (240W budget)
- Positive (VCC+) pins 1,2; Negative (VCC-) pins 3,6; Data pins 1, 2, 3, 6

Power

- Absolute Input Range: 44~57VDC (50~57VDC input is recommended for IEEE802.3at 30W applications)
- Reverse Polarity Protection: Yes
- Dual Power Inputs: Yes
- Connector: Removable terminal block
- Consumption:

Input Voltage	Total Power Consumption	Device Power Consumption	PoE Power Budget
48VDC	251W	5.2W	240W

Mechanical

- Water & Dust Proof: IP30 Protection
- Dimensions: 106mm (D) x 72mm (W) x 152mm (H)
- Mounting: DIN-Rail or Wall Mounting (kits included)
- Weight: 765 g

Environmental

- Operating Temperature :
- -10°C~60°C (IFS-802GS-8PH), -40°C~75°C (IFS-802GS-8PHE)
- 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
- Safety: UL60950-1 (Pending)
- Shock: EN60068-2-27
- Freefall: EN60068-2-32
- Vibration: EN60068-2-6
- MTBF (MIL-HDBK-217): 400,469 Hours

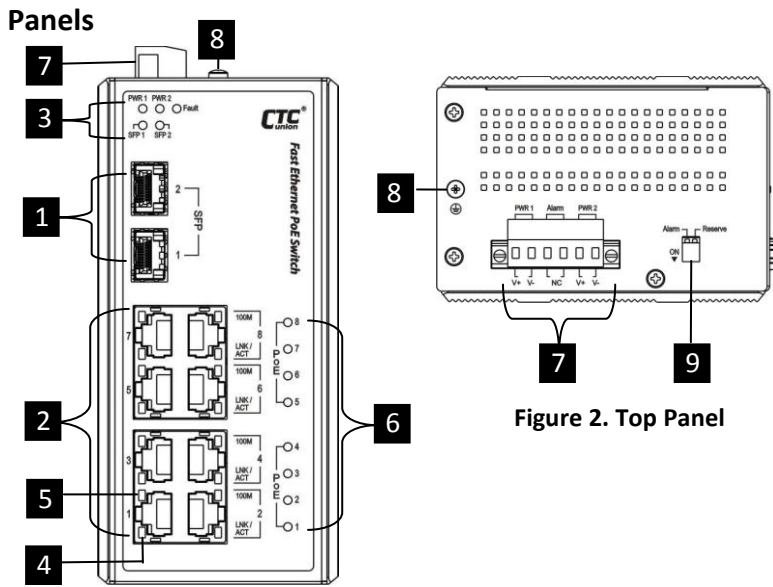


Figure 1. Front Panel

Figure 2. Top Panel

Index No.	Description	Index No.	Description
1	SFP slot 1~2	6	PoE LEDs
2	Fast Ethernet port 1~8	7	Terminal block for power inputs & alarm relay
3	Power, SFP, Fault LEDs	8	Grounding connection
4	Fast Ethernet LNK/Act LED	9	DIP switch
5	Fast Ethernet 100M LED		

LAN and Fiber Connection

IFS-802GS-8PH(E) PoE switches have 8 electrical LAN ports (labeled 1~8) and 2 SFP-based fiber ports (labeled SFP 1~2) on the front panel. The LAN ports utilize shielded RJ-45 connectors that support 10/100M; while the fiber SFP ports support 1000M.

PoE Ports

All 8 LAN ports support PoE (Power over Ethernet) per IEEE802.3af (15.4W) or IEEE802.3at (30W) for connection to standard PoE PD (Power Devices) such as IP Cameras, Access Points, IP Phones, Digital Signage. Using switches with PoE function can eliminate the need to run separate power to these devices thereby simplifying deployment and reducing expenses.

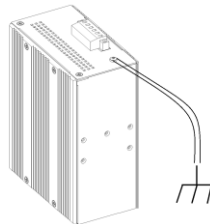
The LAN ports may also connect to any non-PoE device for normal Ethernet transmission without any damage to the non-PoE device or to this device.

Earth Ground Connection

An earth ground connector is provided on the top panel (See Figure 2) with an earth ground sign next to it. Grounding the device can help to release leakage of electricity to the earth safely so as to reduce injuries from electromagnetic interference (EMI).

Prior to connecting to the power, it is important to connect the ground wire to the earth. Follow steps below to install ground wire:

1. Remove the grounding screw.
2. Attach the grounding screw to the ring terminal of the grounding cable. Make sure that the grounding cable is long enough to reach the earth.
3. Use a screwdriver to fasten the grounding screw.



LED Indicators

LED	Color	Status	Definition
PWR1/ PWR2	Green	On	Power is connected and active at the PWR1/PWR2 input terminal connection.
		Off	PWR1/PWR2 is not connected.
Fault	Amber	On	One of the power inputs has fault condition (DIP No. 1 must be turned OFF).
		Off	Normal operation without faults. Alarm conditions are all disabled.
LAN LNK/ ACT	Green	On	Ethernet link is up.
		Blinking	Blinking when there is Ethernet traffic.
		Off	No Ethernet link.
100M	Yellow	On	The connected LAN speed is 100M.
		Off	LAN speed is 10M.
SFP1/ SFP2	Green	On	The fiber SFP link is up.
		Blinking	Blinking when there is data traffic.
		Off	No fiber link.
PoE	Green	On	The respective LAN port has successfully negotiated PoE and is supplying output power to the remote connected PD.
		Blinking	One of the PoE faults (overload, short circuit, port failure at startup) occurs.
		Off	PD is not connected or output power is not provided.

RJ-45 Ethernet Port Pinouts

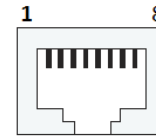


Figure 3. RJ-45 Ethernet Port Pinouts

RJ-45 Ethernet & PoE Pin Assignments

Pin No.	RJ-45 Ethernet 10/100Base-TX	PoE Output
1	RX+	V+
2	RX-	V+
3	TX+	V-
4	-	-
5	-	-
6	TX-	V-
7	-	-
8	-	-

Power and Alarm

A removable terminal block on the top panel (See Figure 2) 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. Please note that the alarm relay contact can only support 1A current at 24VDC. Do not apply voltage and current that exceed these specifications.

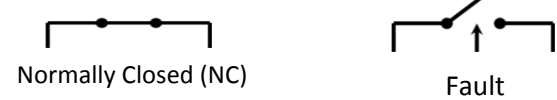


Figure 4. Alarm Relay Circuit

DIP Switch

IFS-802-8PH(-E) switches use a 2-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	Reserved for future use.		

* The default setting.

Installation

IFS-802GS-8PH(E) come with both wall mount and DIN rail hardware brackets. When installing the DIN rail bracket, be sure to correctly align the orientation pin.

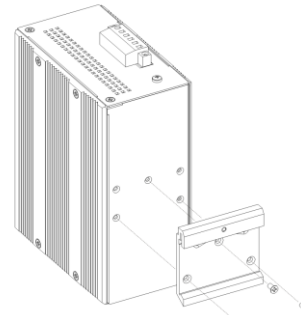


Figure 5. DIN Rail

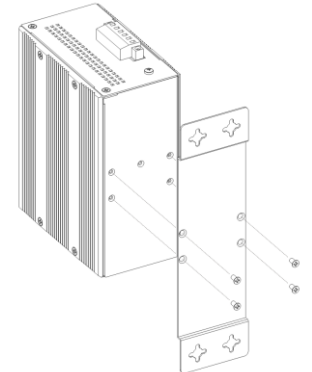


Figure 6. Wall Mount

IFS-802GS-8PH(E) with DIN Rail bracket have a steel spring in the upper rail of the bracket. This spring is compressed for mounting and un-mounting by applying downward force.

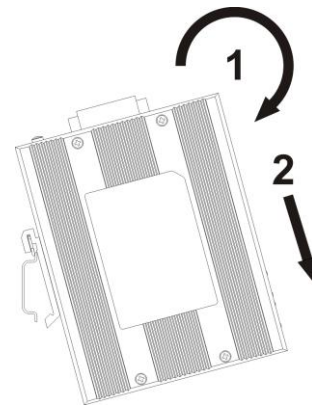


Figure 7. Mounting

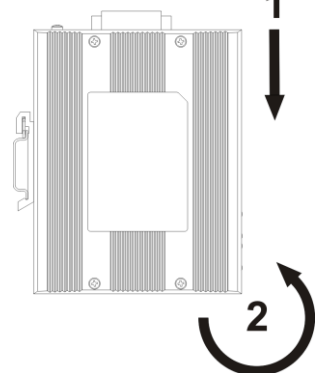


Figure 8. Un-mounting