CTC Union Technologies Co., Ltd.

w w w . c t c u . c o m

Quick Installation Guide

IGS-802CS-8PH

IGS-802CS-8PHE

8 x GbE RJ-45 + 2 x 100/1000M SFP with 8 x PoE (240W, 48VDC) Switch (Hardened)

sales@ctcu.com

Version 1.0 February, 2025

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

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

LEGAL

The information in this publication has been carefully checked and is believed to be entirely accurate at the time of publication. CTC Union Technologies assumes no responsibility, however, for possible errors or omissions, or for any consequences resulting from the use of the information contained herein. CTC Union Technologies reserves the right to make changes in its products or product specifications with the intent to improve function or design at any time and without notice and is not required to update this documentation to reflect such changes.

CTC Union Technologies makes no warranty, representation, or guarantee regarding the suitability of its products for any particular purpose, nor does CTC Union assume any liability arising out of the application or use of any product and specifically disclaims any and all liability, including without limitation any consequential or incidental damages.

CTC Union products are not designed, intended, or authorized for use in systems or applications intended to support or sustain life, or for any other application in which the failure of the product could create a situation where personal injury or death may occur. Should the Buyer purchase or use a CTC Union product for any such unintended or unauthorized application, the Buyer shall indemnify and hold CTC Union Technologies and its officers, employees, subsidiaries, affiliates, and distributors harmless against all claims, costs, damages, expenses, and reasonable attorney fees arising out of, either directly or indirectly, any claim of personal injury or death that may be associated with such unintended or unauthorized use, even if such claim alleges that CTC Union Technologies was negligent regarding the design or manufacture of said product.

WARNING:

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instruction manual may cause harmful interference in which case the user will be required to correct the interference at his own expense. NOTICE: (1) The changes or modifications not expressively approved by the party responsible for compliance could void the user's authority to operate the equipment. (2) Shielded interface cables and AC power cord, if any, must be used in order to comply with the emission limits.

This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

Table of Contents

Introduction

IGS-802CS-8PH(E) are unmanaged 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 (-10°C to 60°C) and wide operating temperature range models (-20°C to 75°C) fulfill the special needs of industrial automation applications.

Package List

- One IGS-802CS-8PH(E) device
- DIN rail with screws
- Terminal block

Features

- IP30 rugged metal housing
- Wide temperature range -20°C~75°C (IGS-802CS-8PHE)
- Support redundant dual power inputs (48VDC)
- Support Ethernet jumbo frames
- Support flow control
- Support DIN rail and wall mounting installation

Specifications

Ethernet Interface

- Standards: IEEE802.3 (10Base-T), 802.3u (100Base-TX), 802.3ab (1000Base-TX)
- Connector Type: RJ-45 (shielded)
- Number of Connector: 8 ports
- Speed: 10/100/1000Mbps (Auto)
- MAC Table: 4K
- Jumbo Frame: 9K Bytes
- Support Full/Half Duplex (Auto-negotiation per IEEE802.3u)
- Support Auto MDI/MDI-X
- Support IEEE802.3x Flow Control
- Store & Forward Switching

Optical Interface

- Standards: IEEE802.3u (100Base-FX), 802.3z (1000Base-X)
- SFP-based slots
- Number of SFP Slot: 2
- Speed: 100/1000Mbps

Power over Ethernet

- Standards: IEEE802.3af, 802.3at
- Number of PoE Enabled Ports: 8
- Total PoE Output Power Budget (Max.): 240W (30W Per Port Max.)
- Support IEEE802.3af 15.4W PoE & IEEE802.3at 30W PoE+
- Positive (V+) Pins 1,2; Negative (V-) Pins 3,6; Data Pins 1, 2, 3, 6, 4, 5, 7, 8

Power

- Support redundant dual power inputs 48VDC (44VDC~57VDC)
- For IEEE802.3at PoE+ applications, 50~57VDC power input is recommended.
- Connector: Removable Terminal Block
- Support Power Input Reverse Polarity Protection
- Support Overload Current Protection
- Consumption:

Input Voltage	Total Power Consumption	Device Power Consumption	PoE Budget
52VDC	246.8W	6.8W	240W

Mechanical

- Housing: Rugged Metal, IP30 Protection
- Fanless Design
- Dimensions: 106 mm (D) x 45 mm (W) x 152 mm (H)
- Installation Method: DIN Rail & Wall Mounting (Optional accessory)
- Weight: 645g

Environmental

- Operating Temperature: -10°C~60°C (IGS-802CS-8PH); -20°C~75°C (IGS-802CS-8PHE)
- Humidity: 5%~95% (Non-condensing)

Certifications

- EMC: CE
- EMI (Electromagnetic Interference): FCC Part 15 Subpart B Class A, CE
- 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
- Surge Protection: 4KV for PoE, UTP and SFP Ports
- Shock: IEC 60068-2-27
- Freefall: IEC 60068-2-31
- Vibration: IEC 60068-2-6

MTBF (MIL-HDBK-217)

- 678,010 Hours

Panels

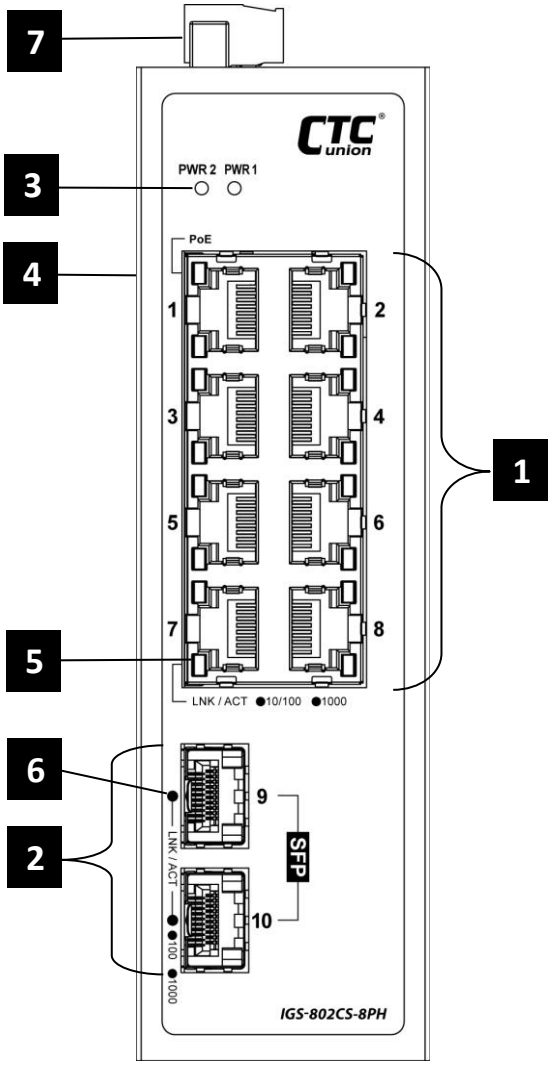

Figure 1. Front Panel

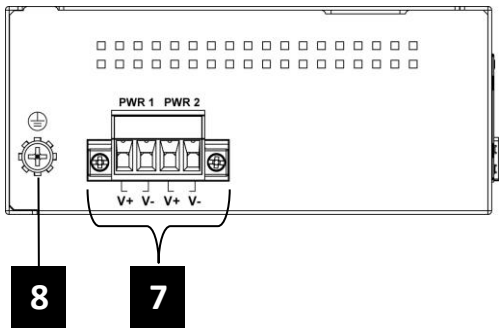

Figure 2. Top Panel

Index No.	Description
1	RJ-45 Ethernet Ports (1~8)
2	Fiber Optic SFP Slots (9~10)
3	Power LED Indicators
4	PoE LED Indicators
5	10/100/1000 Link/Act LED Indicators
6	SFP Link/ACT LED Indicators
7	Power Terminal Block
8	Grounding Screw

Connections

LAN Ports

IGS-802CS-8PH(E) models have 8 LAN ports (labeled 1~8) on the front panel. The LAN ports that utilize shielded RJ-45 connectors support 10/100/1000M. Port speed and link activity can be shown in real-time on the individual LED indicator.

Fiber Ports

On the front panel, there are two fiber ports (labeled 9~10). These two fiber ports are SFP-based and support 100/1000M speed. Port speed and link activity can be shown in real-time on the individual LED indicator.

PoE Ports

8 LAN ports (labeled 1~8) all 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, etc. PoE not only eliminates the need to run separate power to these devices, but also simplifies deployment and reduces 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.

NOTE: IGS-802CS-8PH(E) is a PSE device that can connect to PDs (Powered Devices) or non-PoE devices. However, it is NOT recommended to connect IGS-802CS-8PH(E) to another PSE device. By doing so, it may have potential risks to cause device damages.

RJ-45 Ethernet Port Pinouts

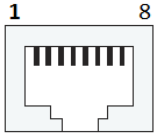

Figure 3. RJ-45 Ethernet Port Pinouts

Pin No.	RJ-45 Ethernet		PoE Output
	100Base-TX	1000Base-T	
1	RX+	TRD 0+	V+
2	RX-	TRD 0-	V+
3	TX+	TRD 1+	V-
4	-	TRD 2+	
5	-	TRD 2-	
6	TX-	TRD 1-	V-
7	-	TRD 3+	
8	-	TRD 3-	

Figure 4. RJ-45 Ethernet & PoE Pin Assignments

Recommended Power & Ground Wiring Scheme

DC Power Connection

A removable terminal block on the top panel provides power source connections. Power can be provided through the dual inputs from separate sources (PWR1 & PWR2). One power supply is enough to power up the device. If two power supplies are used, the device provides power redundancy function. See the figure provided below for recommended DC power wiring scheme.

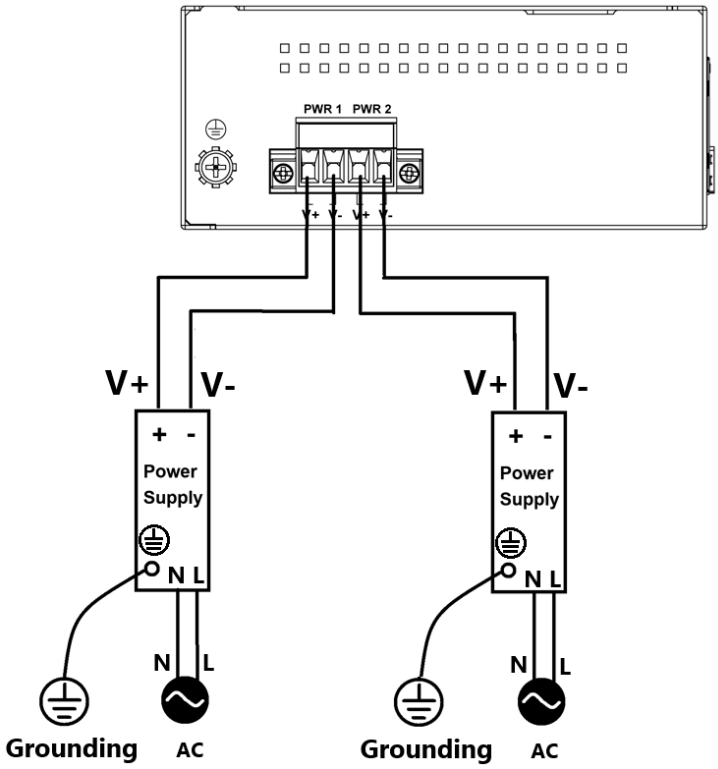

Figure 5. DC Power Connection

Earth Grounding Connection

An earth grounding connection hole is provided on the top panel 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:

Step 1. Make sure you have the grounding screw and grounding cable at hand.

Step 2. Unfasten the ground screw on the top panel.

Step 3. 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.

Step 4. Use a screwdriver (or other tools) to fasten the grounding screw on the earth ground hole securely.

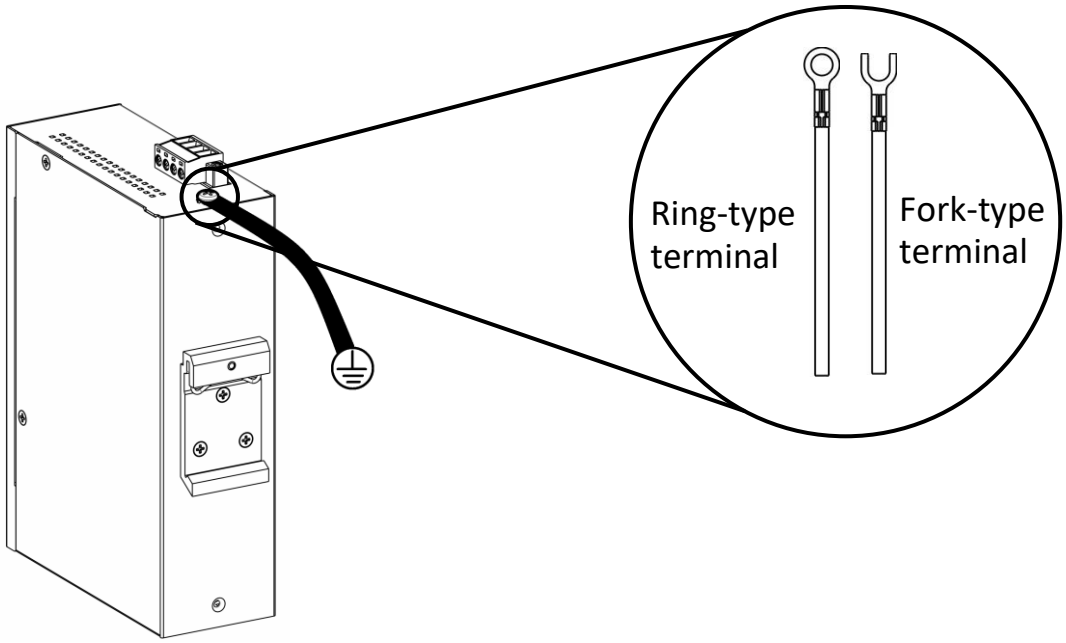

Figure 6. Earth Grounding Connection

ATTENTION: It is important to mount this product on the well-grounded surface before using it so as to reduce unexpected noises or injuries.

Installation

The switch can be mounted on the wall or installed in DIN rail depending on your installation needs. When installing the wall-mounting bracket (optional accessory) and DIN rail bracket, be sure to correctly align the orientation pin.

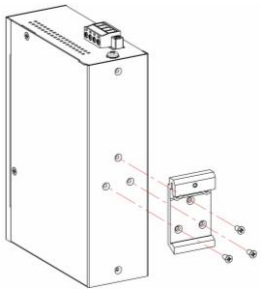

Figure 7. DIN Rail

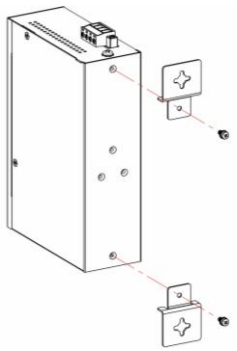

Figure 8. Wall Mount

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.

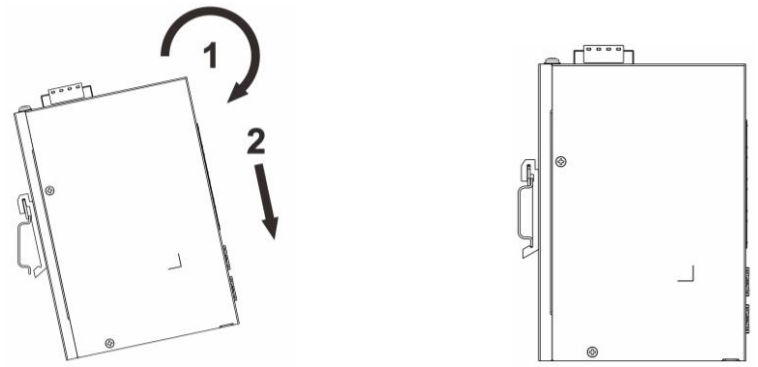

Figure 9. Mounting

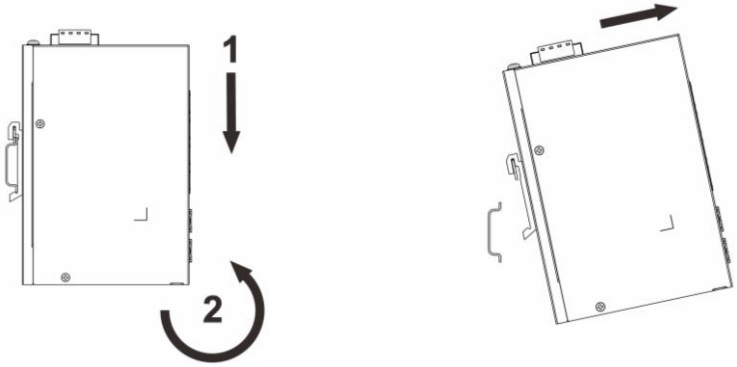

Figure 10.Un-Mounting

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.
LINK/ACT (1~8)	Green	On	Lit when the LAN connected speed is 10/100M.
		Blinking	Blinking when there is Ethernet traffic.
	Amber	On	Lit when the LAN connected speed is 1000M.
		Blinking	Blinking when there is Ethernet traffic.
PoE	Green	On	The respective LAN port has successfully negotiated PoE and is supplying output power to the remote connected PD.
		Off	PD is not connected or output power is not provided.
LINK/ACT (9~10)	Green	On	Lit when the fiber is connected and fiber speed is 100M.
		Blinking	Blinking when there is Ethernet traffic.
	Amber	On	Lit when the fiber is connected and fiber speed is 1000M.
		Blinking	Blinking when there is Ethernet traffic.