GV-PoE Switch

GV-POE0410-E User's Manual

Before attempting to connect or operate this product,
please read these instructions carefully and save this manual for future use.

POE0410E-B

GeoVision inc.

GeoVision, Inc.

9F, No. 246, Sec. 1, Neihu Rd.,
Neihu District, Taipei, Taiwan
Tel: +886-2-8797-8377
Fax: +886-2-8797-8335
http://www.geovision.com.tw

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1. Safety Precautions

FCC 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 in a residential installation. This equipment generates, uses, and can radiate radio frequency energy. It may cause harmful interference to radio communications if the equipment is not installed and used in accordance with the instructions. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

2. Introduction

Figure 2-1

Product Overview

The GV-POE0410-E is a 4-port PoE Switch with 4 PoE+ 10/100/1000BaseT(X) port and 1 Gigabit SFP. The switch supports IEEE 802.3at Power over Ethernet standard with up to 30 W per port and maximum 130 W power consumption per system. No special network cable is required for connecting your powered devices (PD), such as IP cameras. The GV-POE0410-E is featured with a redundant power supply for automatic power backup and supports alarms alerting for power and link failure. The switch is designed for small network environment to strengthen its network connection and efficiency.

Redundant Power Inputs

This switch provides two power inputs that can be connected simultaneously as power supply. One of the power supplies provides backup power immediately if the other fails.

Auto-Negotiation

Every port can automatically detect and adjust if the connected network devices are running at 10Mbps, 100M, 1000Mbps and Half/Full-Duplex mode.

Auto-MDI/MDI-X

Every port can automatically detect your type of cable. There is no need for crossover cables whether you are connecting this switch to another switch or to a computer.

Rugged Design

This switch is designed for harsh environmental conditions. With its rigid aluminum enclosure and 6kV surge protection design, the switch not only protects the surge from the DC in port, but also the RJ-45 ports. By using this switch, it will make your network more reliable regardless of the bad weather outside.

2.1. Key Features

- 4-port PoE+ 10/100/1000BaseT(X), 1 Gigabit SFP
- IEEE 802.3at Compliant (4 Ports at Full 30W)
- Max. 130 W power consumption
- Extreme temperature support (40°C ~ 70°C /40°F ~ 158°F)
- Auto-MDI/MDI-X
- Auto-Negotiation
- Alarm control
- DIN-Rail Installation
- Redundant DC power
- 6 kV surge protection
- Up to 4 GV-IP Cameras support

2.2. Packing List

1. GV-POE0410-E x 1
2. GV-POE0410-E Quick Start Guide x 1

2.3. Option

Optional devices can expand your GV-POE0410-E's capabilities and versatility. Contact your dealer for more information.

GV-LC and GV-LC10	The SFP Transceiver is designed to plug into the SFP port of the GV-POE Switch and is the interface between the switch and optical fiber cables. This product complies with IEEE 802.3z 1000BaseSX/LX standards. The SFP Transceiver is a hot swappable device; you can add or remove the device without powering down.

3. Hardware Description

This section mainly describes the hardware of this switch and gives a physical and functional overview on the switch.

Dimensions

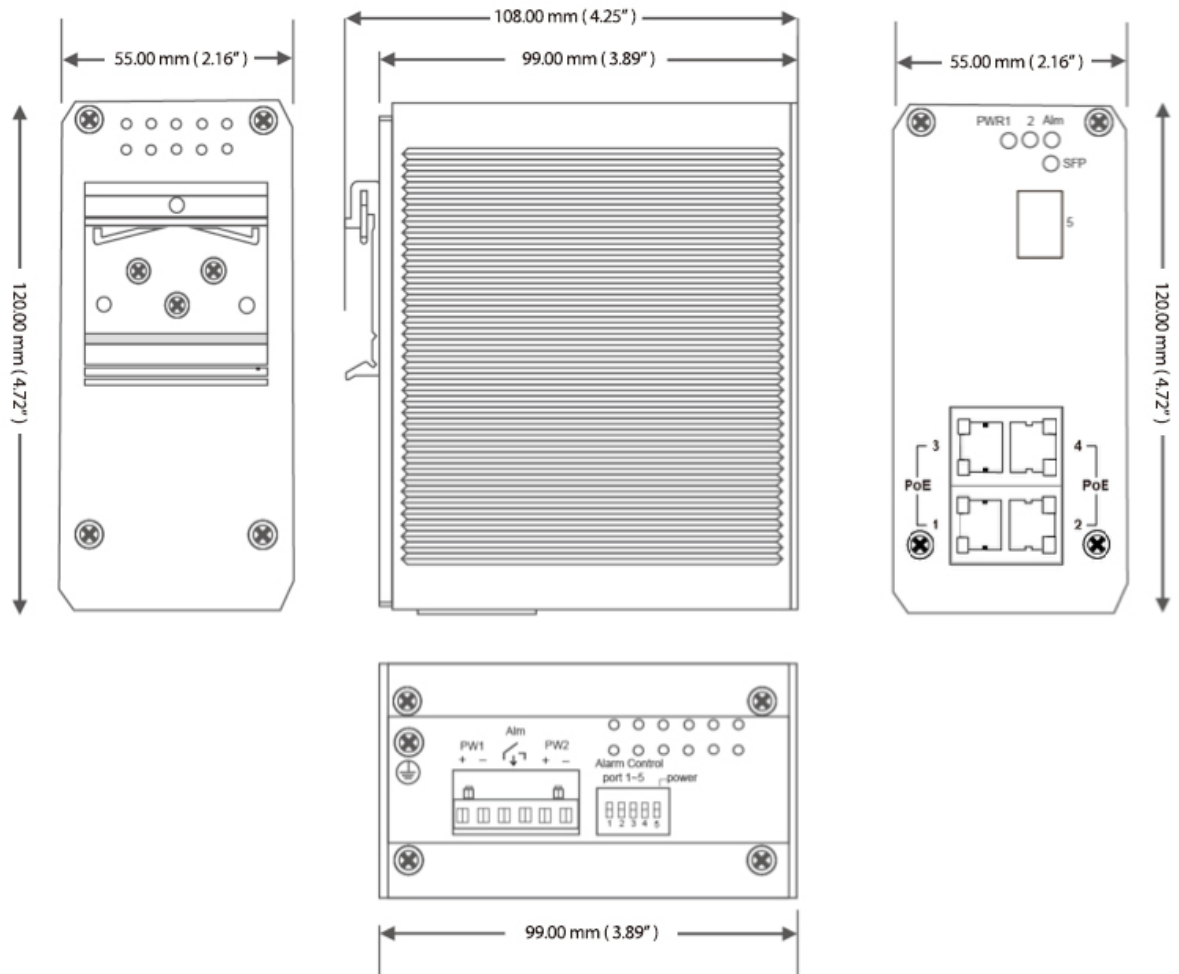The dimensions of this switch are 120 x 55 x 108 mm (4.72" x 2.16" x 4.25").
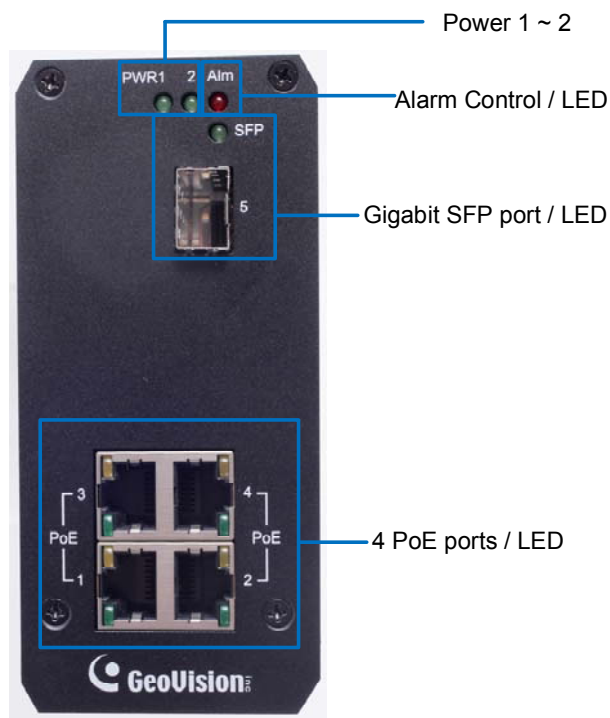

Figure 3-1

Front Panel

Figure 3-2

LED	Status	Description
PWR1	Green on	Power on
	Off	Power off
PWR2	Green on	Power on
	Off	Power off
Alm	Red on	Port link down or power failure
	Off	No event
Port 1~4	Green On	A network device is detected and links up
	Yellow On	A powered device is detected and links up
Port 5 (SFP)	Green on	The gigabit SFP port links up

Note: If the power LEDs go off when the power cord is plugged in, a power failure might have occurred. Check the power output connection to see if there is any error at the power source. If you still cannot solve the problem, contact your local dealer for assistance.
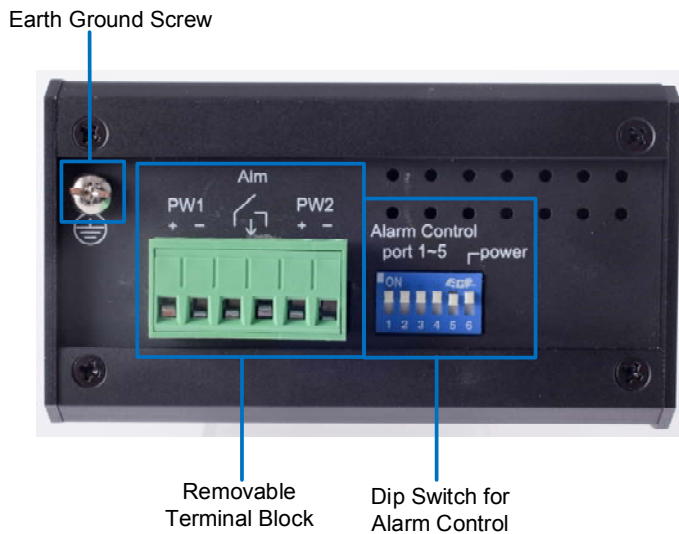
Bottom Panel

Figure 3-3

The GV-POE0410-E is featured with a redundant power supply for automatic power backup and supports alarms alerting for power and link failure.

Power Supply

With DC power cables wired to both **PW1** and **PW2** on the terminal block, one of the power supplies provides backup power immediately if the other fails.

Alarm Control

With an alarm device wired to **Alm** on the terminal block, when any of the power supplies fails or any of the port links fails, the alarm will be triggered. Use the dip switch to enable or disable the alarm function.

Terminal Block	Power 1	Connect to DC power input
	Power 2	Connect to DC power input
	Alarm control	Connect to an alarm output
Dip Switch	Switch 1 ~ 5	Switch up/down to turn on/off the alarm of corresponding port links on the front panel. Dip switch 1 ~ 4 corresponds to Port 1 ~ 4, and dip switch 5 corresponds to Port 5 (SFP) on the front panel.
	Switch 6	Switch up/down to enable/disable the alarm for power failure.

4. DIN-Rail Mounting

A DIN-Rail clip is built in the rear body of the switch supporting EN 50022 standard DIN Rail. The dimensions of EN 50022 DIN Rail are included in the following diagram. Follow the steps below to mount the switch on a DIN-Rail track.

1. Insert the upper end of the DIN-Rail clip into the back of the DIN-Rail track from its upper side
2. Lightly push the bottom of the DIN-Rail clip into the track.
3. Check if the DIN-Rail clip is tightly attached to the track.
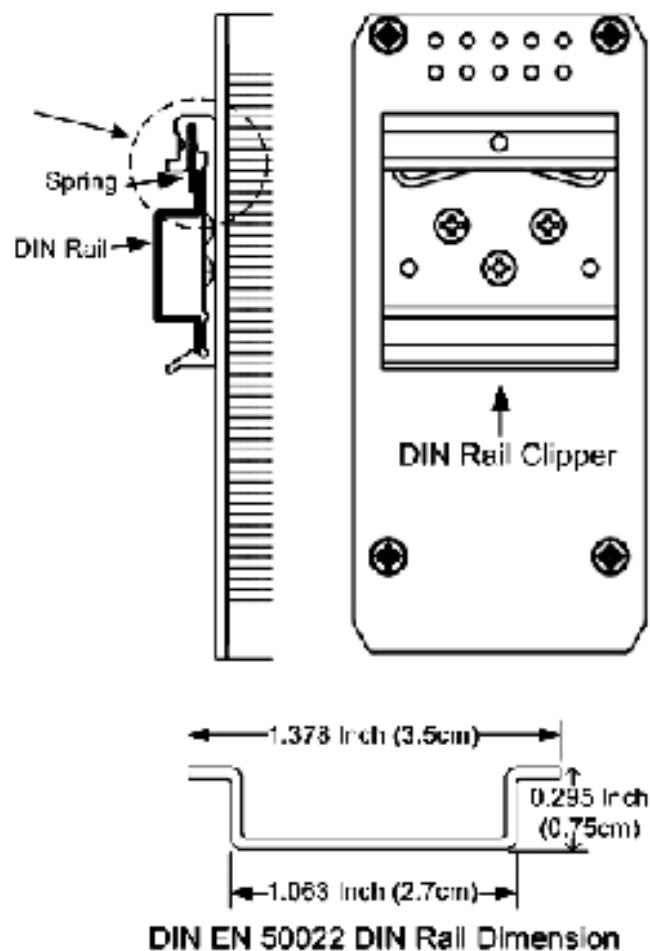4. To remove the switch from the track, reverse the steps above.

Figure 4-1

5. Hardware Installation

5.1. Wiring the DC Power Inputs

Before installing the power input, be sure the DC Power Supply is compliance with standard power supply certification. The suggested power output voltage you can choose for the IEEE 802.3af compliant PD is 45 ~ 57 V/DC, and 50 ~ 57 V/DC for the IEEE 802.3at compliant PD.

Wire DC power cable to the connector

1. Insert the positive and negative wires respectively into the V+ and V- terminal block connector
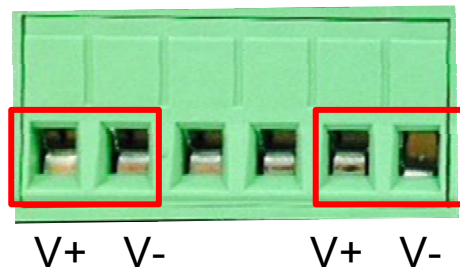

V+ V-   V+ V-

Figure 5-1

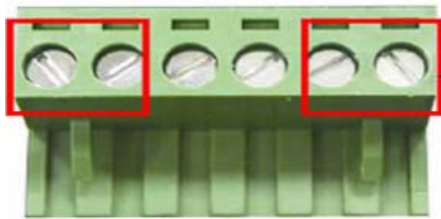2. Tighten the wire-clamp screws to prevent the DC wires from being loosened.

Figure 5-1-1

Note: The wire range of electric wire is 12 to 24 AWG.
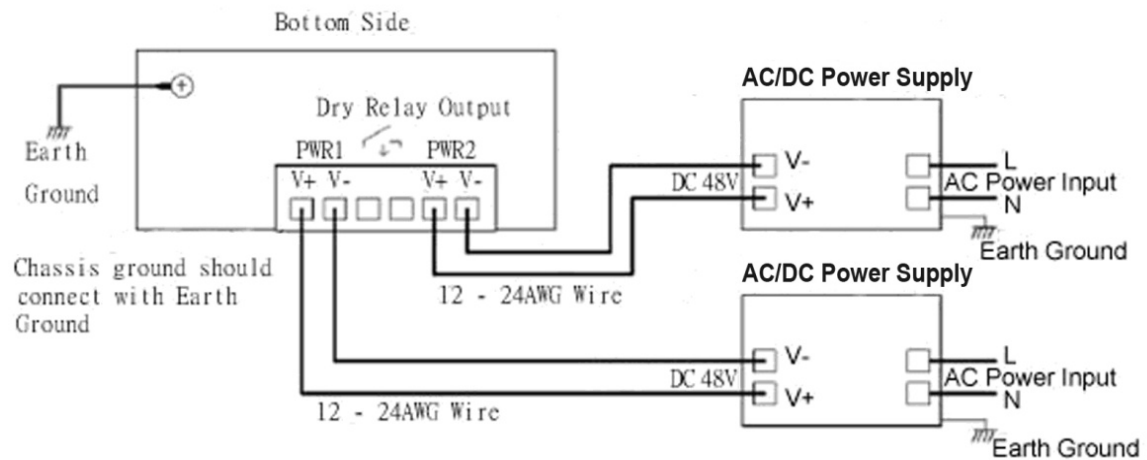
Diagram of power input wiring

Figure 5-2

5.2. Wiring the Alarm Relay

The switch provides one dry relay output for power or port link event. The alarm relay default is "open" and form a close circuit when the event is occurred. The relay conductor ability is 24W to the maximum. When it connects with a DC 24V power source, the maximum current is 1A. The following diagram shows how to create an alarm circuit.
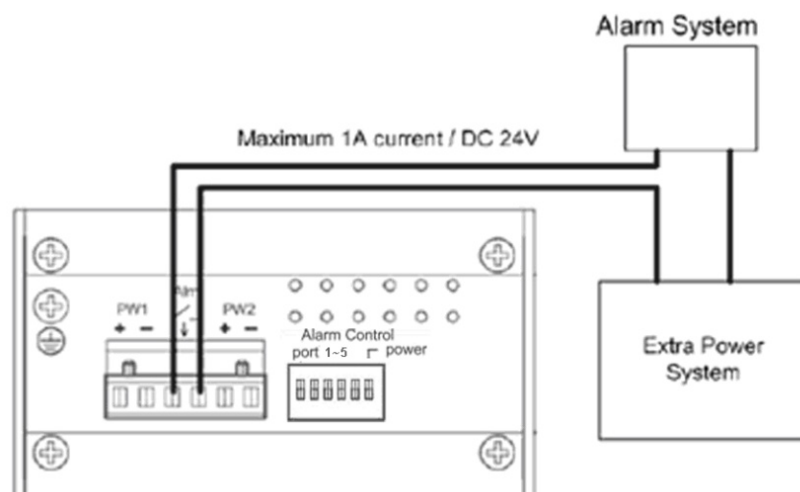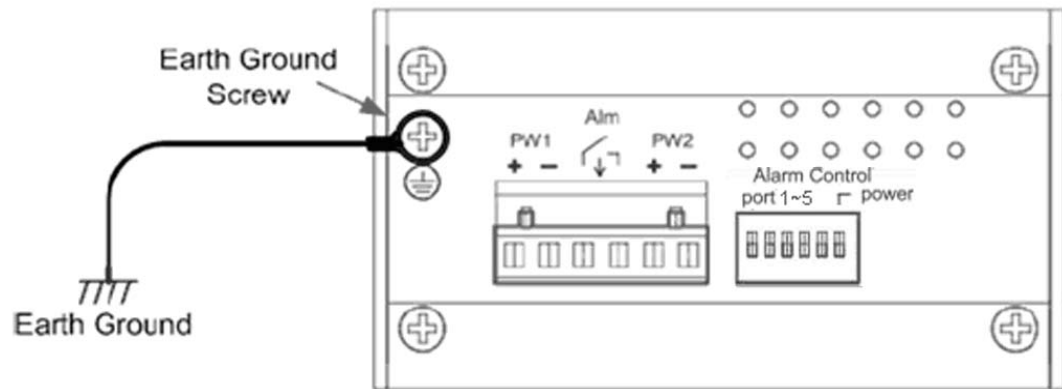

Figure 5-3

5.3. Wiring the Earth Grounding

In the real fields, there are a lot of automatic devices, such as AC motors, electric welding machine and power generator. Those devices will generate electromagnetic and disturb communications. To prevent those noises, the switch should be well earthed. The following diagram shows how to create a connection.

Figure 5-4

5.4. Enable the Event Alarm Function

The switch is equipped with one dry relay output for port link fails or power fails. This session introduces how to enable the event alarm DIP switch to alert field technician once the failure event is occurred. The new configuration is activated immediately without system reset when DIP SWITCH is changed.

On the bottom side of the switch, there is one 6-Pin DIP SWITCH for alarm control. By inserting the port and power wiring to set up the alarm, the DIP SWITCH of the intended Alarm is switched to "ON". The relay output will form a short circuit if the alarm occurred.
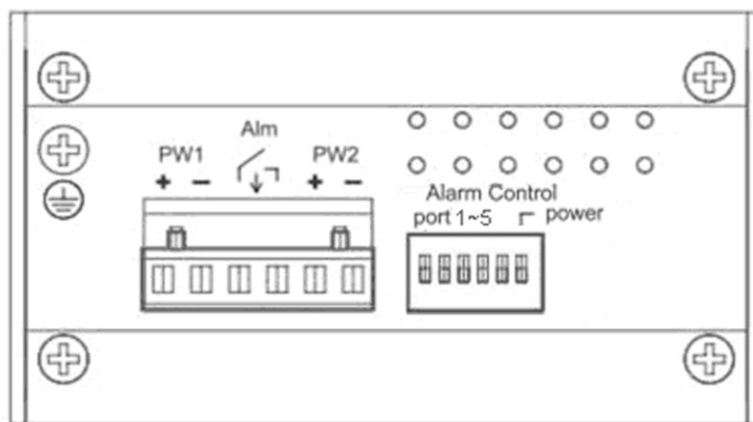

Figure 5-5

Terminal Block	Power 1	Connect to DC power input
	Power 2	Connect to DC power input
	Alarm control	Connect to an alarm output
Dip Switch	Switch 1 ~ 5	Switch up/down to turn on/off the alarm of corresponding port links on the front panel. Dip switch 1 ~ 4 corresponds to Port 1 ~ 4, and dip switch 5 corresponds to Port 5 (SFP) on the front panel.
	Switch 6	Switch up/down to enable/disable the alarm for power failure.

5.5. Cabling

UTP/STP cables are required for Port 1~4. Fiber transceiver is required for Port 5 (SFP).

Ethernet cable Request

The wiring cable types for data transmission are as below.

- 10/100BaseT(X) Cat. 5 UTP/STP
- 1000BaseT Cat. 5e, 6 UTP/STP

The wiring cable types for data transmission and power delivery in any speed are Cat. 5 or above.

SFP Installation

While install the SFP transceiver, make sure the SFP type of the 2 ends is the same and the transmission distance, wavelength, fiber cable can meet your request.
The way to connect the SFP transceiver is to Plug in SFP fiber transceiver fist. The SFP transceiver has 2 plug for fiber cable, one is TX (transmit), the other is RX (receive). Cross-connect the transmit channel at each end to the receive channel at the opposite end.

Note: Select Ethernet cables with specifications suitable for your applications to set up your systems. Ethernet cables are categorized into unshielded twisted-pair (UTP) and shielded twisted-pair (STP) cables. For systems with 100 Mbps transmission speed, Category 5, 6 Ethernet cables are the only suitable specifications for this environment. You also need to make sure that the distance between each node cannot be longer than 100 meters (328 feet).