LGH1004A

Hardened Ethernet Switch, (4) 10/100/1000 Mbps, (1) GE SFP

Quick Installation Guide

- LGH1000 Series Switches operate in harsh environments.
- Two power inputs connect simultaneously to live DC power sources.
- Alarm alerts you when power fails or a port disconnects.

Customer Support Information

Order toll-free in the U.S.: Call 877-877-BBOX (outside U.S. call 724-746-5500)
FREE technical support 24 hours a day, 7 days a week: Call 724-746-5500 or fax 724-746-0746
Mailing address: Black Box Corporation, 1000 Park Drive, Lawrence, PA 15055-1018
Web site: www.blackbox.com • E-mail: info@blackbox.com

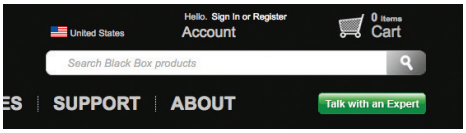
What's Included

Your package includes one Hardened Ethernet Switch. It has (4) 10-/100-/1000-Mbps twisted-pair ports and (1) 1000-Mbps Gigabit SFP slot.

This user manual/installation guide can be downloaded from the Black Box Web site, or the FTP site.

To download from the Web site:

1. Go to www.blackbox.com
2. Enter the LGH1004A in the search box:



3. Click on the "Resources" tab on the product page, and select the document you wish to download.

To download from the FTP site:

1. Go to ftp.blackbox.com
2. Open the "Manuals" folder (if using IE, open the "Anonymous" folder first).
3. Open the "L" folder, then search for LGH1004A.

Installation

DIN Rail Mounting

The DIN-Rail clip already attached on the rear side of the switch supports an EN 50022 standard DIN Rail as shown in Figure 3-1.

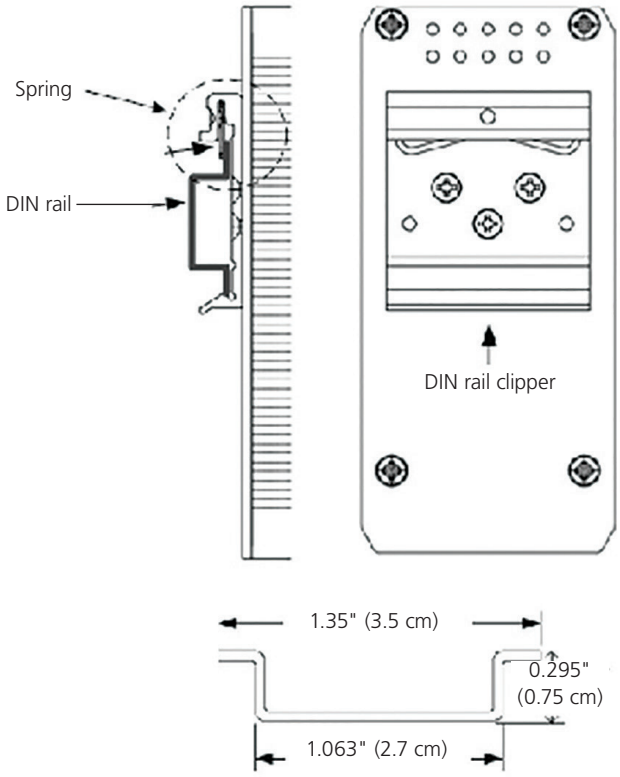


Figure 1. DIN rail mounting.

Follow the steps below to mount the switch on the 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 1–3 above.

Hardware Installation

Wiring the DC Power Inputs

Before installing the power input, make sure the DC power supply complies with standard power supply certifications.

NOTE: Suitable wire gauge is from 12 to 24 AWG.

Follow these steps to wire the DC power cable to the connector:

1. Insert the positive and negative wires into the V+ and V- contacts on the terminal block connector.
2. Tighten the wire clamp screws to prevent the DC wires from loosening.

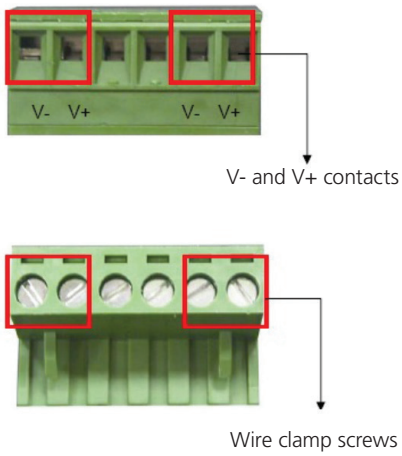


Figure 2. Terminal block connector.

Wiring the Alarm Relay

The switch provides one dry relay output for a power or port link event. The alarm relay default is "open" and forms a closed circuit when the event occurs. The relay conductor has a maximum of 24 Watts. When it connects with a 24-VDC power source, the maximum current is 1 Amp. The following diagram shows how to create an alarm circuit.

WARNING: Do not connect to AC line.

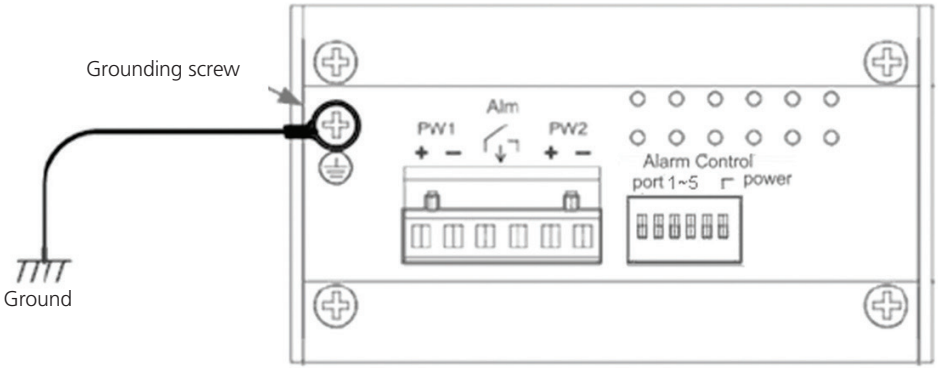


Figure 3. Alarm relay wiring.

Wiring Grounding

AC motors, electric welding machines, and power devices generate electromagnetic and disturb communications. To prevent noise, be sure to ground the switch. The following diagram shows how to create a connection.

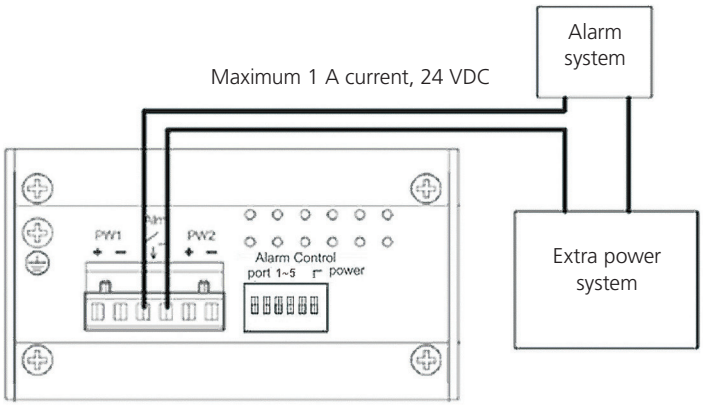


Figure 4. Grounding the switch.

Enable the Event Alarm Function

The switch has one dry relay output for port link fails or power fails. Just change the DIP switch to the desired setting and the new configuration will be activated. You don't need to reset the system.

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

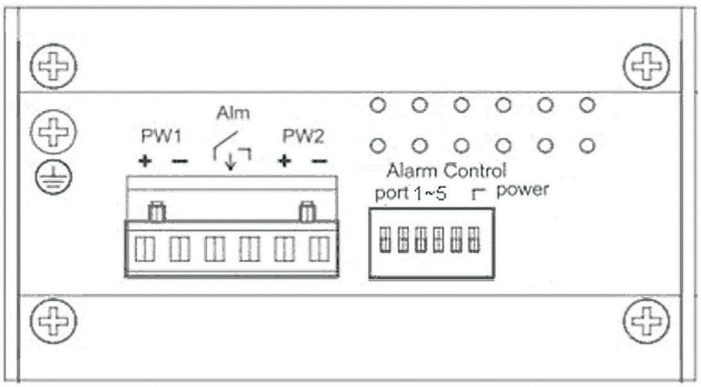


Figure 5. Setting the DIP switch.

Table 1. DIP switch settings for port link or power failure alarm.

Pin Number	Status	Description
P1 to P (Pin 1–5)	ON	Enables port link down alarm at this port.
	OFF	Disables port link down alarm at this port.
P6	ON	Enables power failure alarm.
	OFF	Disables power failure alarm.

Cabling

Ethernet Cabling:

Ports 1–4 use copper UTP/STP cable.

Table 2. Cable types for data transmision.

Description
10BASE-T: 2-pair UTP/STP CAT3, 4, 5 cable, EIA/TIA-568, 100-ohm, Max. 328 feet (100 m)
100BASE-TX: 2-pair UTP/STP CAT5 cable, EIA/TIA-568, 100-ohm, Max. 328 feet (100 m)
1000BASE-T: 4-pair UTP/STP CAT5 cable, EIA/TIA-568, 100-ohm, Max. 328 feet (100 m)

NOTE: For optimum data transmission and power delivery in any speed, use CAT5 cable or above.

Fiber port

Port 5 houses a fiber transceiver (SFP). See the table below for compatible SFPs.

Table 3. Compatible SFPs.

Part Number	Description
LFP411	SFP, 1.25-Gbps Fiber with Extended Diagnostics, 850-nm Multimode, LC, 300 m
LFP412	SFP, 1.25-Gbps Fiber with Extended Diagnostics, 1310-nm Multimode, LC, 2 km
LFP413	SFP, 1.25-Gbps Fiber with Extended Diagnostics, 1310-nm Single-Mode, LC, 10 km
LFP414	SFP, 1.25-Gbps Fiber with Extended Diagnostics, 1310-nm Single-Mode, LC, 30 km
LFP416	SFP with SGMII Interface, 1.25 Gbps, Copper, 10/100/1000BASE-T, Extended Diagnostics

SFP Installation

Before installing the SFP transceiver, make sure the SFP type at both ends of the link is the same and the transmission distance, wavelength, fiber cable are correct for your application.

At both ends of the connection, simply plug the SFP transceiver into the switch, then connect the fiber cable.

Black Box Tech Support: FREE! Live. 24/7.

Great tech support is just 60 seconds away at 724-746-5500 or blackbox.com.

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