LED Indicators on the LIE401A and LIG401A

LED Name	Status	Condition
PoE (LIE401A only)	ON, Green	PoE is working
	OFF	PoE is not working
P1	ON, Green	P1 power line has power
	OFF	P1 power line is disconnected or does not have power
P2	ON, Green	P2 power line has power
	OFF	P2 power line is disconnected or does not have power
Alarm	ON, Red	Power failure alarm occurs
	OFF	No power failure alarm
(4) Link/Act LEDs for RJ-45 ports	On, Green	Ethernet link is up but no traffic is detected
	OFF	Ethernet link is down
(4) Speed LEDs for RJ-45 ports	ON, Yellow	1000-Mbps connection is detected.
	OFF	No link, a 10-Mbps or 100-Mbps connection is detected
(1) Link/Act LED for SFP port	ON, Green	Ethernet link is up
	OFF	Ethernet link is down
(1) Speed LED for SFP port	ON, Yellow	SFP port speed 1000-Mbps connection is detected
	OFF	No link, or an SFP port speed 100-Mbps connection is detected

Customer Support Information

Order toll-free in the U.S.:
Call 877-877-BBOX
(outside U.S. call 1-724-746-5500)

FREE technical support
24 hours a day, 7 days a week:
Call 724-746-5500 or
fax 724-746-0746

Web site: www.blackbox.com

E-mail: info@blackbox.com

Specifications

Mechanical	
Connectors	LIG401A: (5) RJ-45, 10/100/1000 Mbps speed auto-negotiation, MDI-MDI-X auto-crossover (1) 100/1000BASE-SFP module slot; LIE401A: (5) RJ-45, IEEE 802.3at PoE PSE ports, 10/100/1000 Mbps speed auto-negotiation, MDI-MDI-X auto-crossover; (1) 100/1000BASE-SFP module slot
Ingress protection	IP30
Dimensions (without DIN rail clip)	LIG401A: 4.4"H x 1.1"W x 3.5"D (11.2 x 2.9 x 8.9 cm); LIE401A: 5.4"H x 1.1"W x 4.2"D (13.9 x 2.9 x 10.7 cm)
Weight	LIG401A: 0.70 lb. (0.32 kg); LIE401A: 1 lb. (0.46 kg)
Installation Options	DIN-rail mounting; Wallmounting
Power	
PoE	LIG401A: No; LIE401A: Yes
Input	Redundant input terminals, reverse power protection
Input Voltage	LIG401A: 12–58 VDC; LIE401A: 12–58 VDC, 54–58 V for PoE+, 48–58 V for PoE
Environmental	
Operating Temperature	-40 to +167° F (-40 to +75° C), cold startup at -40° C
Storage Temperature	-40 to +185° F (-40 to +85° C)
Humidity	5 to 95% RH (non-condensing)

lig401a_lie401a_qsg_rev1

BLACK BOX®

LIG401A
LIE401A

Industrial Gigabit Ethernet Switches

Quick Start Guide

LIG401A has (4) RJ-45 and (1) SFP ports.
LIE401A has (4) RJ-45 PoE+ and (1) SFP ports.

1. What's Included

Your package should contain the following items. If anything is missing or damaged, contact Black Box Technical Support at 724-746-5500 or info@blackbox.com.

- (1) Industrial Gigabit Ethernet Switch - (4) RJ-45, (1) SFP (LIG401A)

  OR

  (1) Industrial Gigabit Ethernet PoE+ Switch - (4) RJ-45, (1) SFP (LIE401A)
- (2) wallmount brackets
- (1) DIN-rail clip
- (4) M4 screws (for the wallmount brackets or DIN-rail clip)
- (1) DC power terminal block
- This Quick Start Guide

2. Overview

The Industrial Gigabit Ethernet Switches support standard industrial applications without complex setup to make the network truly plug-and-play.

WARNING! When a connector is removed during installation, testing, or servicing, or when an energized fiber is broken, your eyes might be exposed to to hazardous laser output power.

3. Installation

3.1 Mounting the Switch on a DIN Rail

1. Screw the DIN rail bracket onto the switch with the included bracket and screws.
2. Hook the switch-DIN-rail-bracket assembly over the DIN rail.
3. Push the bottom of the assembly towards the DIN rail until it snaps into place.

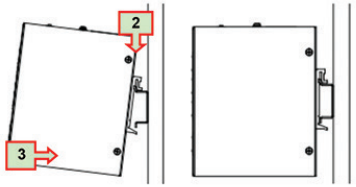


Figure 3-1. Din-rail mounting.

3.2 Mounting the Switch on a Wall

Screw the wall mount brackets on using the included M4 screws.

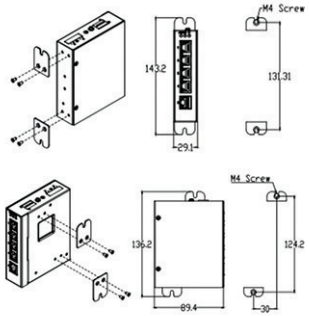
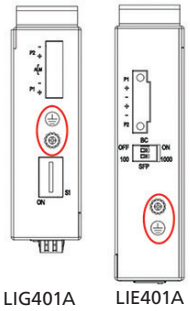


Figure 3-2. Wallmounting.

3.3 Connecting to Ground

The switch must be properly grounded for optimum system performance.



LIG401A LIE401A

FIgure 3-3. Grounding points on the LIG401A and LIE401A.

3.4 Connecting the Ethernet Interface

3.4.1 Connecting the RJ-45 Electrical Interface

To connect to a PC, use a straight-through or crossover Ethernet cable.

To connect the switch to an Ethernet device, use unshielded twisted-pair (UTP) or shielded twisted-pair (STP) Ethernet cables.

The RJ-45 connector's pinout is shown in Table 3-1.

Table 3-1. RJ-45 connector pinout.

Pin	Assignment	PoE Assignment (LIE401A only)
1, 2	TX/RX+, TX/RX-	Positive V_{port}
3, 6	TX/RX+, TX/RX-	Negative V_{port}
4, 5	TX/RX+, TX/RX-	Not used
7, 8	TX/RX+, TX/RX-	Not used

3.4.2 Connecting the Fiber SFP Interface

To connect to a fiber port, install a fiber SFP module into the SFP slot on the switch. Compatible SFP modules are listed in Table 4-2.

DANGER! Do not look directly into the optical beam emitted from the fiber connectors. Your eyes might be damaged!

Table 3-2. Compatible SFP modules.

Part Number	Description
LSP421	10GBASE-SR SFP+ Extended Diagnostics, LC multimode 850 nm, 300 m
LSP422	10GBASE-LR, SFP+ Extended Diagnostics, LC single-mode, 1310 nm, 10 km
LFP411	SFP/1250 Extended Diagnostics, LC multimode, 850 nm, 550 m
LFP412	SFP/1250 Extended Diagnostics, LC multimode, 1310 nm, 2 km
LFP413	SFP/1250 Extended Diagnostics, LC single-mode, 1310 nm, 10 km
LFP414	SFP/1250 Extended Diagnostics, LC single-mode, 1310 nm, 40 km
LFP401	SFP/155 Extended Diagnostics, LC multimode, 850 nm, 2 km
LFP403	SFP/155 Extended Diagnostics, LC single-mode, 1310 nm, 30 km
LFP404	SFP/155 Extended Diagnostics, LC single-mode, 1310 nm, 60 km
LFP402	SFP/155 Extended Diagnostics, LC multimode, 1310 nm, 2 km
LFP418	SFP/1250 Extended Diagnostics, LC single-mode, 1550 nm, 80 km
LFP420	Simplex SFP/1250, Extended Diagnostics, single-mode, 1550 nm TX, 1310 nm RX

Table 3-2 (continued). Compatible SFP modules.

Part Number	Description
LFP421	Simplex SFP/1250, Extended Diagnostics, single-mode, 1310 nm TX, 1550 nm RX

3.5 Connecting the Power

The switch is powered by redundant power supplies. To install, insert the positive and negative wires into V+ and V- contacts on the terminal block and tighten the wire-clamp screws to prevent the wires from loosening.

NOTE: Input power for the LIE401A ranges from 54–58 VDC for PoE+ and 48–58 VDC for PoE.

3.6 Connecting the Alarm Relay (LIG401A only)

The alarm relay output contacts are in the middle of the DC terminal block connector as shown in Figure 3-4.

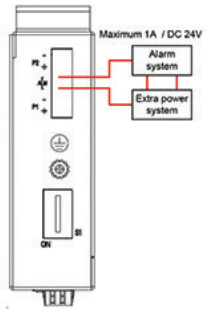


Figure 3-4. Alarm relay output contacts on the LIG401A.

Insert the wires and set the DIP switch of the respective port alarm to ON. The relay output will detect if a port fails, and form a short circuit. The alarm relay out is "Normal Open."

4. DIP Switch Settings

Table 4-1. DIP switch settings on the LIG401A.

DIP Switch	Status	Description
1	ON OFF	ON enables the power alarm; OFF disables the power alarm.
2	ON OFF	ON enables broadcast storm limit; OFF disables broadcast storm limit

Table 4-2. DIP switch settings on the LIE401A.

DIP Switch	Status	Description
1	ON OFF	ON enables broadcast storm limit OFF disables broadcast storm limit
2	NOT USED	NOT USED