IES-0823

6 GE + 2 SFP Unmanaged Switch -20 to 60C, DIN-rail

User Manual

v1.00 - 1206

Preface

A member of the growing family of rugged switches, this switch addresses a need for a smaller switch. This switch provides an affordable solution for rugged and outdoor environment, transportation road-side cabinet, industrial floor shop, multitenant dwellings or Fiber To The Home (FTTH) applications. Capable of operating at temperature extremes of -20°C to +60°C, this is the switch of choice for harsh environments constrained by space.

Plug-and-Play Solution:
The switch is a plug-and-play Gigabit Ethernet Switch in compact size. It doesn't have any complicated software to set up.

This manual describes how to install and use the Industrial Gigabit Ethernet Switch. This switch integrates full wire speed switching technology. This switch brings the answer to complicated Industrial networking environments.

To get the most out of this manual, you should have an understanding of Ethernet networking concepts.

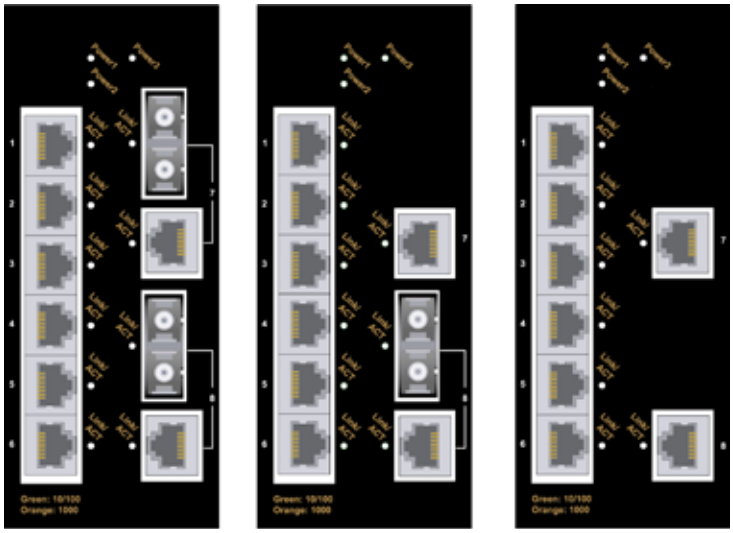
In this manual, you will find:

- Features on the switch
- Illustrative LED functions
- Installation instructions
- Specifications

Table of Contents

Product Overview

Industrial Gigabit Ethernet Switch



Package Contents

When you unpack the product package, you shall find the items listed below. Please inspect the contents, and report any apparent damage or missing items immediately to your authorized reseller.

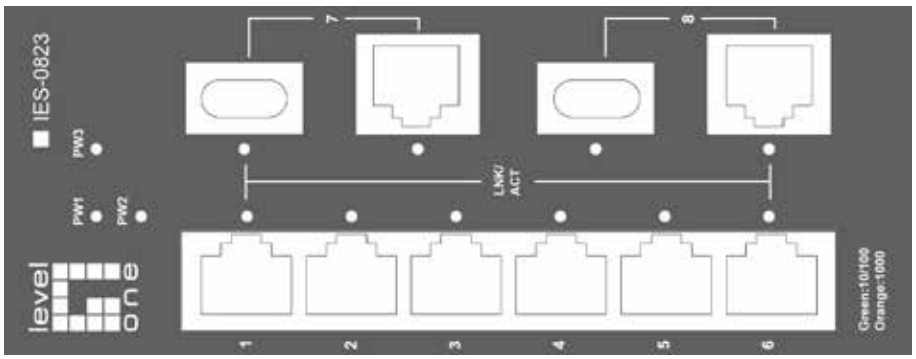
- IES-0823
  6 GE + 2 SFP Unmanaged Switch -20 to 60C, DIN-rail
- Quick Installation Guide
- CD User Manual

Product Highlights

Basic Features

- Meets EN61000-6-2 & EN61000-6-3 EMC Generic Standard Immunity for industrial environment.
- Supports IEEE802.3/802.3u/802.3ab/802.3z/802.3x.
- 1000Mbps-Full-duplex, 10/100Mbps-Full/Half-duplex.
- Auto-Negotiation, Auto MDI/MDIX.
- 1000Base-SX/LX: Multi mode, Single mode SC type. 1000Base-BX: WDM Single mode SC type.
- IEEE802.1p Queue Supports 4 priority queues.
- 8192 MAC addresses.
- 1.125M bits buffer memory.
- Full wire-speed forwarding rate.
- Supports jumbo frame up to 9K Bytes.
- Alarms for power failure by relay output.
- Power Supplies: Redundant 9-32VDC Terminal Block power inputs and 12VDC DC JACK with 100-240VAC external power supply.
- Field Wiring Terminal: Use Copper Conductors Only, 60/75℃, 12-24 AWG torque value 7 lb-in.
- Operating voltage and Max. current consumption: 0.6A @ 12VDC, 0.3A @ 24VDC.
- Power consumption: 7.2W Max.
- -20℃ to 60℃ operating temperature.
- Industrial aluminum case.
- Supports DIN-Rail or Panel Mounting installation.

Front Panel Display



• **Power Status (PW1, PW2, PW3)**

These LEDs come on when the switch is properly connected to power and turned on.

, **Port Status LEDs**

The LEDs display status for each respective port.

LED	State	Indication
10/100Base-TX		
LNK/ACT (Green)	Steady	A valid network connection established.
	Flashing	Transmitting or receiving data. ACT stands for ACTIVITY.
1000Base-T/SX/LX/BX		
LNK/ACT (Orange)	Steady	A valid network connection established.
	Flashing	Transmitting or receiving data. ACT stands for ACTIVITY.

Physical Ports

This switch provides:

Eight 10/100/1000Base-TX ports
Seven 10/100/1000Base-TX ports + one combo port
Six 10/100/1000Base-TX ports + two combo ports

<Note> Combo port: Either 1000Base-SX/LX port or 10/100/1000Base-TX port.

Connectivity

RJ-45 connectors
SC connector on 1000Base-SX/LX/BX fiber port

Installation

This chapter gives step-by-step instructions about how to install the switch:

Selecting a Site for the Switch

As with any electric device, you should place the switch where it will not be subjected to extreme temperatures, humidity, or electromagnetic interference. Specifically, the site you select should meet the following requirements:

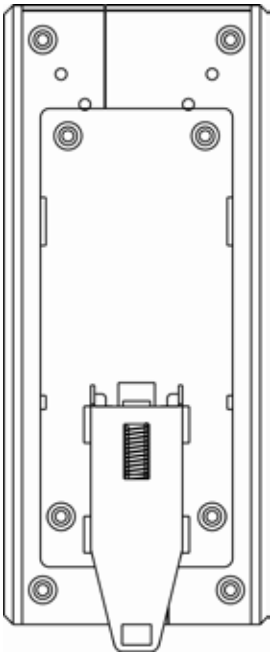
- The ambient temperature should be between -20 to 60 degrees Celsius.
- The relative humidity should be less than 95 percent, non-condensing.
- Surrounding electrical devices should not exceed the electromagnetic field (RFC) standards.
- Make sure that the switch receives adequate ventilation. Do not block the ventilation holes on the switch
- The power outlet should be within 1.8 meters of the switch.

DIN Rail Mounting

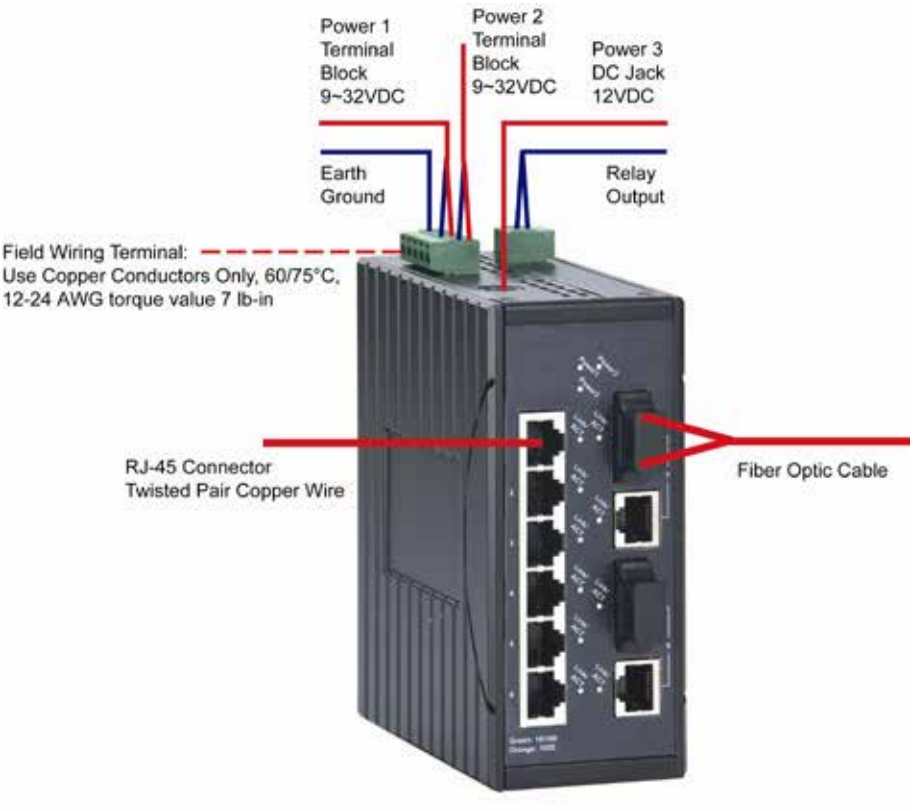
Fix the DIN rail attachment plate to the back panel of the switch.

Installation: Place the switch on the DIN rail from above using the slot. Push the front of the switch toward the mounting surface until it audibly snaps into place.

Removal: Pull out the lower edge and then remove the switch from the DIN rail.



Wiring Diagram



Connecting to Power

Redundant DC Terminal Block Power Inputs

There are two pairs of power inputs can be used to power up this device. You only need to have one power input connected to run the switch.

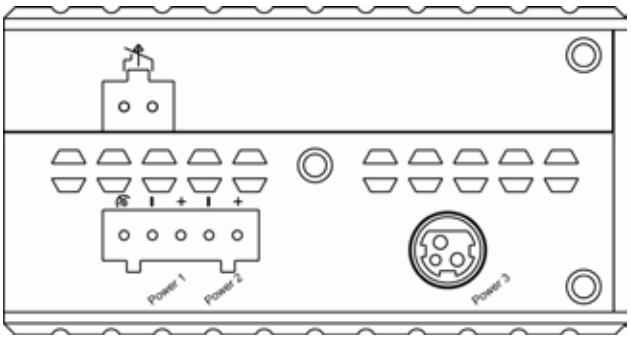
Step 1: Connect the DC power cord to the plug-able terminal block on the switch, and then plug it into a standard DC outlet.

Step 2: Disconnect the power cord if you want to shut down the switch.

12VDC DC Jack

Step 1: Connect the supplied AC to DC power adapter to the receptacle on the topside of the switch.

Step 2: Connect the power cord to the AC to DC power adapter and attach the plug into a standard AC outlet with the appropriate AC voltage.



Alarms for Power Failure

Step 1: There are two pins on the terminal block are used for power failure detection. It provides the normally closed output when the power source is active. Use this as a dry contact application to send a signal for power failure detection.

Power Input Assignment			
Power3		12VDC ,3A	DC Jack
Power2	+	1.5A@24VDC(9-32VDC)	Terminal Block
	—	Power Ground	
Power1	+	1.5A@24VDC(9-32VDC)	
	—	Power Ground	
⏚		Earth Ground	
Relay Output Rating			30 VDC, 1A
Relay Alarm Assignment			
FAULT	*Warning signal disable for following: The relay contact closes if Power1 and Power2 are both failed but Power3 on. The relay contact closes if Power3 is failed but Power1 and Power2 are both on.		

Special note:
The relay output is normal open position when there is no power to the switch. Please do not connect any power source to this terminal to prevent the shortage to your power supply.

Connecting to Your Network

Cable Type & Length

It is necessary to follow the cable specifications below when connecting the switch to your network. Use appropriate cables that meet your speed and cabling requirements.

Cable Specifications

Speed	Connector	Port Speed Half/Full Duplex	Cable	Max. Distance
10Base-T	RJ-45	10/20 Mbps	2-pair UTP/STP Cat. 3, 4, 5	100 m
100Base-TX	RJ-45	100/200 Mbps	2-pair UTP/STP Cat. 5	100 m
1000Base-T	RJ-45	2000 Mbps	4-pair UTP/STP Cat. 5, 5e	100 m
1000Base-SX	SC	2000 Mbps	MMF (50 or 62.5μm)	550 m
1000Base-LX	SC	2000 Mbps	SMF (9 or 10μm)	10, 20, or 50 km
1000Base-BX	SC	2000 Mbps	SMF (9 or 10μm)	20 km

Cabling

Step 1: First, ensure the power of the switch and end devices are turned off.

<Note> Always ensure that the power is off before any installation.

Step 2: Prepare cable with corresponding connectors for each type of port in use.

<Note> To connect two regular RJ-45 ports between switches or hubs, you need a straight or cross-over cable.

Step 3: Consult the previous section for cabling requirements based on connectors and speed.

Step 4: Connect one end of the cable to the switch and the other end to a desired device.

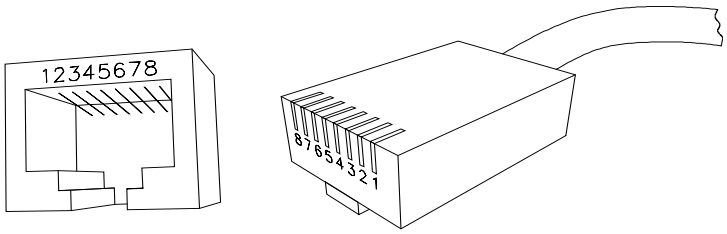
Step 5: Once the connections between two end devices are made successfully, turn on the power and the switch is operational.

Specifications

Industrial Gigabit Ethernet Switch	10/100/1000Base-TX auto-negotiating ports with RJ-45 connectors 1000Base-SX/LX/BX fiber ports
Applicable Standards	IEEE802.3 10Base-T IEEE802.3u 100Base-TX IEEE802.3ab 1000Base-T IEEE802.3z 1000Base-SX/LX
Switching Method	Store-and-Forward
Forwarding Rate 10Base-T: 100Base-TX: 1000Base-T: 1000Base-SX/LX/BX:	 10 / 20Mbps Half / Full-duplex 100 / 200Mbps Half / Full-duplex 2000Mbps Full-duplex 2000Mbps Full-duplex
Performance	148,80pps for 10Mbps 148,810pps for 100Mbps 1,488,100pps for 1000Mbps
Cable 10Base-T: 100Base-TX: 1000Base-T: 1000Base-SX/LX/BX:	 2-pair UTP/STP Cat. 3, 4, 5 2-pair UTP/STP Cat. 5 4-pair UTP/STP Cat. 5, 5e Up to 100m (328ft) MMF (50 or 62.5μm), SMF (9 or10μm)
LED Indicators	Per unit – Power status (Power1, Power2, Power3) Per port – 10/100Base-TX - Link/ACT (Green) 10/100/1000Base-TX or 1000Base-SX/LX/BX - Link/ACT (Orange)
Dimensions	58mm (W) × 110mm (D) × 135mm (H) (2.29" (W) × 4.33" (D) × 5.31" (H))
Net Weight	0.8Kg (1.76lbs.)
Power	Terminal Block: 9-32VDC DC Jack: 12VDC, External AC/DC required
Operating Voltage & Max. Current Consumption	0.6A @ 12VDC, 0.3A @ 24VDC
Power Consumption	7.2W Max.
Operating Temperature	-20℃ to 60℃ (-4℉ to 140℉)
Storage Temperature	-40℃ to 85℃ (-40℉ to 185℉)
Humidity	5%-95% non-condensing
Safety	UL508
EMI	FCC Part 15, Class A EN61000-6-3: EN55022, EN61000-3-2, EN61000-3-3
EMS	EN61000-6-2: EN61000-4-2 (ESD Standard) EN61000-4-3 (Radiated RFI Standards) EN61000-4-4 (Burst Standards) EN61000-4-5 (Surge Standards) EN61000-4-6 (Induced RFI Standards) EN61000-4-8 (Magnetic Field Standards)
Environmental Test Compliance	IEC60068-2-6 Fc (Vibration Resistance) IEC60068-2-27 Ea (Shock) IEC60068-2-32 Ed (Free Fall)

Appendix A – Connector Pinouts

Pin arrangement of RJ-45 connectors:



RJ-45 Connector and Cable Pins

The following table lists the pinout of 10/100/1000Base-TX ports.

Pin	Ports
1	TP0＋
2	TP0－
3	TP1＋
4	TP2＋
5	TP2－
6	TP1－
7	TP3＋
8	TP3－