level one

∞Infinity

IES-1881
16 x 802.3af + 2 GE TX/1000LX Combo Managed Switch -40 to 75C

Overview
LevelOne IES-1881 Industry Ethernet Switch provides 16 PoE ports of 10/100Base-TX plus 2 Combo ports of 1000Base-T Gigabit Ethernet and 1000Base-LX SM SC fiber to enable high speed network at mission-critical environment. With the 1U height rack-mountable size, this switch can be easily installed in the cabinet, plus the clearly visible status LEDs provide simple monitoring of port link activity.

High Reliability
All components are built to withstand harsh environment applications without compromise where humidity, temperature variation and even shock vibration are concerns, including Electric & Utility, Critical Infrastructure, Transportation and Surveillance Security. This device operates under -40 to 75 Celsius (-40 to 167 Fahrenheit) temperature.

Resilient Ring Network
Supports Ring topology network providing simple installation and ultra fast network recovery performance, less than 15ms. Unlike much complex resilient topology, such as a redundant star, the Ring simplifies the network design and requires less cabling installation. In addition, fast network recovery time helps minimize system downtime.

Management
Supports a variety of management features including: CLI via Console or Telnet; Graphic User Interface via Web Browser or Simple Network Management Protocol via SNMP tools. It provides better visibility and management of those critical assets.

Power over Ethernet
This switch is Power Sourcing Equipment (PSE), and it is fully complied with IEEE 802.3af PoE standard at maximum 15.4W power budget per port. It helps to save infrastructure wiring costs dramatically by eliminating electric wiring and less UPS needed.
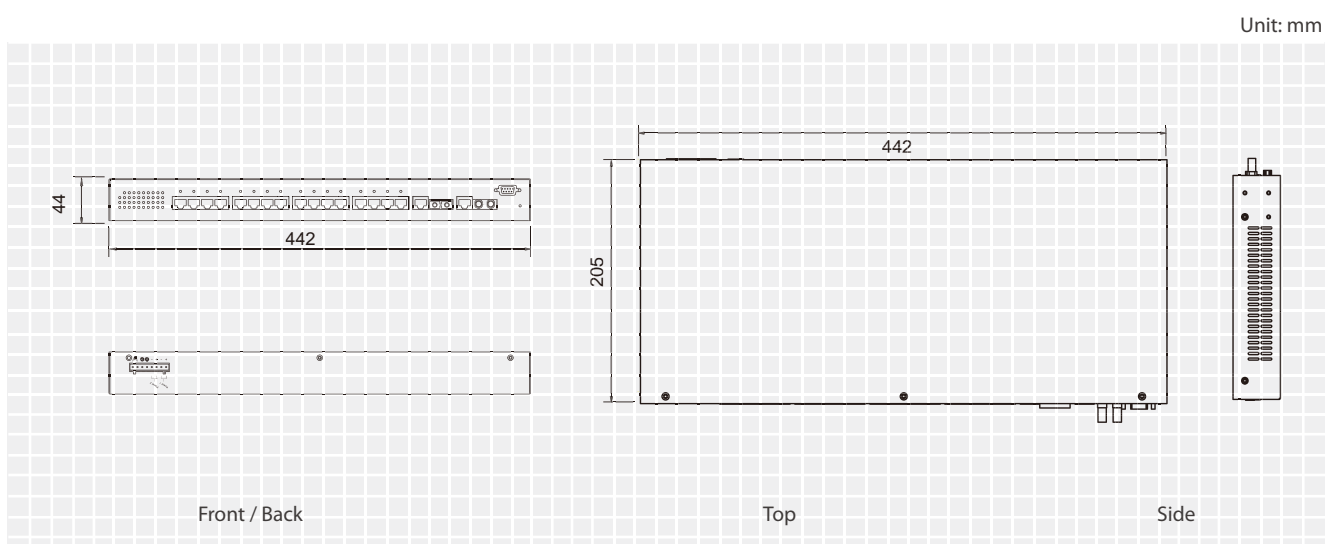
Redundancy
This redundant power system is designed to meet the challenge of power failure to ensure reliability and constant availability. Single power design works fine in non-critical network applications, but it falls short drastically for network applications in transportation, automate production or banking.

Features
- Supports PoE Power Sourcing Equipment (PSE)
- PoE control and scheduling
- Supports α-ring and RSTP/MSTP/STP for Ethernet redundancy
- IP Multicast Filtering through IGMP Snooping V1, V2 & V3
- Supports port-based VLAN and IEEE802.1Q VLAN Tagging and GVRP
- IEEE802.1p QoS with four priority queues
- MAC-based trunking with automatic link fail-over
- RS-232 console, Telnet, SNMP V1, V2c & V3, RMON, Web Browser, and TFTP Management
- Supports Command Line Interface in RS-232 Console

- Supports IEEE802.1x Security
- Bandwidth Rate Control
- Per-port programmable MAC address locking
- Up to 24 Static Secure MAC addresses per port
- Port mirroring
- NTP synchronization
- 1000Mbps-Full-duplex, 10/100Mbps-Full/Half-duplex, Auto-Negotiation, Auto-MDI/MDIX
- Full wire-speed forwarding rate
- -40°C to 75°C (-40°F to 167°F) operating temperature range, tested for functional operation @ -40°C to 85°C (-40°F to 185°F)

Diagrams

Unit: mm

Front / Back   Top   Side

Specifications

Technology

Standards	▪ IEEE802.3 10BASE-T, IEEE802.3u 100BASE-TX/100BASE-FX, IEEE802.3ab 1000BASE-T, IEEE802.3z 1000BASE-SX/1000BASE-LX, IEEE802.3x, IEEE802.1p, IEEE802.1Q, IEEE802.1w, IEEE802.1x, IEEE802.3af
Forward and Filtering Rate	▪ 14,880pps for 10Mbps ▪ 148,810pps for 100Mbps ▪ 1,488,100pps for 1000Mbps
Packet Buffer Memory	▪ 2M bits
Processing Type	▪ Store-and-Forward ▪ Half-duplex back-pressure and IEEE802.3x full-duplex flow control
Address Table Size	▪ 8192 MAC addresses

Power

Input	▪ 15.4W 802.3af in 48VDC (47 - 55VDC) (Terminal Block)
Power Consumption	▪ Device: 12W Max. ▪ IEEE802.3af: Full load with 16 ports PoE (15.4W for each PoE port): 246.4W
Overload Current Protection	▪ Present
Reverse Polarity Protection	▪ Present

Mechanical

Casing	▪ Metal case ▪ IP30
Dimensions	▪ 442mm (W) x 205mm (D) x 44mm (H) (17.40" (W) x 8.07" (D) x 1.73" (H))
Weight	▪ 3.5Kg (7.7lbs.)
Installation	▪ Rack Mounting

Interface

Ethernet Port	▪ 10/100BASE-TX: 16-port ▪ Gigabit: 2-ports combo
Console Port	▪ Port: One DB9 RS-232 port
LED Indicators	▪ Per Unit: Power Status (Power 1, Power 2) ▪ Per Port: PoE (Amber) for 10/100TX, 10/100TX, 100FX: Link/Activity (Green), Speed (Green)

Environment

Operating Temperature	▪ -40°C to 75°C (-40°F to 167°F) Tested @ -40°C to 85°C (-40°F to 185°F)
Storage Temperature	▪ -40°C to 85°C (-40°F to 185°F)
Ambient Relative Humidity	▪ 5% to 95% (non-condensing)
MTBF	▪ 40.18 years

Regulatory Approvals

ISO	▪ Manufactured in an ISO9001 facility
Safety	▪ UL508

EMI	▪ FCC Part 15, Class A
	▪ EN61000-6-4
	  - EN55022
	  - EN61000-3-2
	  - EN61000-3-3

EMS	▪ EN61000-6-2
	  - EN61000-4-2 (ESD Standards)
	  Contact: + / - 6KV; Criteria B
	  Air: + / - 8KV; Criteria B
	  - EN61000-4-3 (Radiated RFI Standards)
	  10V/m, 80 to 1000MHz; 80% AM Criteria A
	  - EN61000-4-4 (Burst Standards)
	  Signal Ports: + / - 4KV; Criteria B
	  D.C. Power Ports: + / - 4KV; Criteria B
	  - EN61000-4-5 (Surge Standards)
	  Signal Ports: + / - 1KV; Line-to-Line; Criteria B
	  D.C. Power Ports: + / - 0.5KV; Line-to-Earth; Criteria B
	  - EN61000-4-6 (Induced RFI Standards)
	  Signal Ports: 10Vrms @ 0.15 - 80MHz; 80% AM Criteria A
	  D.C. Power Ports: 10Vrms @ 0.15 - 80MHz; 80% AM Criteria A
	  - EN61000-4-8 (Magnetic Field Standards)
	  30A/m @ 50, 60Hz; Criteria A

Environmental Test Compliance	▪ IEC60068-2-6 Fc (Vibration Resistance) 5g @ 10 - 150Hz, Amplitude 0.35mm (Operation/Storage/Transport) ▪ IEC60068-2-27 Ea (Shock) 25g @ 11ms (Half-Sine Shock Pulse; Operation) 50g @ 11ms (Half-Sine Shock Pulse; Storage/Transport) ▪ IEC60068-2-32 Ed (Free Fall) 1M (3.281ft.)

Order Information

IES-1881 – 16 x 802.3af + 2 GE TX/1000LX Combo Managed Switch -40 to 75C, Rackmount

Package Contents
IES-1881
CD Manual / Utility
Quick Installation Guide