level one®

∞Infinity

IES-1880
16 FE + 2 GE Managed Switch -40 to 75C, DIN-rail

Overview
LevelOne IES-1880 Industry Ethernet Switch provides 16 ports of 10/100Base-TX plus 2 ports of 1000Base Gigabit Ethernet to enable high speed network at mission-critical environment. This device is designed to be mounted on an industry standard DIN-rail, 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.

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.

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.

Oil & Gas Hazardous Application
Comply with Class 1, Division 2 certified, UL 1604 standard (UL ISA12.12.01) is a higher level certification to assure that products can be safely operated where specific potentially flammable or explosive materials may be present. Sparks can be highly dangerous in the presence of specific flammable gases, vapors or liquids; such as oil and gas refinery, as well as companies that deal with hazardous chemicals.

Features
- Certified by NEMA TS2 Environmental requirements for Traffic control equipment
- 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 and LACP
- 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
- DHCP Client/Server
- RS-232 console, Telnet, SNMP V1, V2c & V3, RMON, Web Browser, and TFTP Management
- 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   Side   Top   Buttom

145   65   125
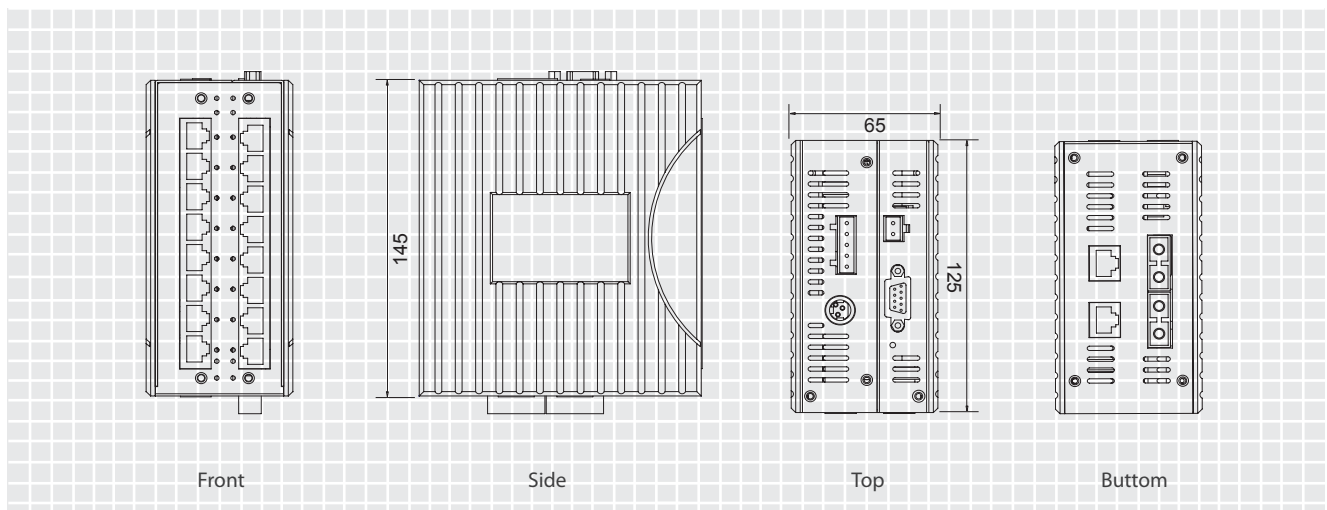
Specifications

Technology

Standards	▪ IEEE802.3 10BASE-T, IEEE802.3u 100BASE-TX, IEEE802.3ab1000BASE-T, IEEE802.3z 1000BASE-SX/1000BASE-LX, IEEE802.3x, IEEE802.1p, IEEE802.1Q, IEEE802.1w, IEEE802.1x
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	▪ Input Voltage: 12 to 48VDC (Terminal Block); 12VDC (DC Jack)
Power Consumption	▪ 15W Max. 1.25A @ 12VDC, 0.625A @ 24VDC
Overload Current Protection	▪ Present
Reverse Polarity Protection	▪ Present

Mechanical

Casing	▪ Aluminum case ▪ IP30
Dimensions	▪ 65mm (W) x 125mm (D) x145mm (H) (2.56" (W) x 4.92" (D) x 5.71" (H))
Weight	▪ 1Kg (2.2lbs.)
Installation	▪ DIN-Rail (Top hat type 35mm), Wall Mount

Interface

Ethernet Port	▪ 10/100BASE-TX: 16, 12 or 8 ports ▪ 100BASE-FX: 0, 1, 2 or 4 ports ▪ Gigabit: 0, 1 or 2 ports
Console Port	▪ Port: One DB9 RS-232 port
LED Indicators	▪ Per Unit: Power Status (Power 1, Power 2, Power 3) ▪ Per Port: 10/100BASE: Link/Activity 1000BASE: Link/Activity (Green: Copper, Amber: Fiber)
Alarm Contact	▪ One relay output with current 1A @ 24VDC

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	▪ -45°C to 85°C (-49°F to 185°F)
Ambient Relative Humidity	▪ 5% to 95% (non-condensing)
MTBF	▪ 39.3 years

Regulatory Approvals

ISO	▪ Manufactured in an ISO9001 facility
Safety	▪ UL508
Hazardous Locations	▪ UL1604 (ISA 12.1201)

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

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-1880 – 16 FE + 2 GE Managed Switch -40 to 75C, DIN-rail

Package Contents
IES-1880
CD Manual / Utility
Quick Installation Guide