



## IES-1020

### 8 x 802.3at + 2GE SFP Combo Unmanaged Switch -40 to 75C

#### Overview

LevelOne IES-1020 Industry Ethernet Switch provides 8 PoE ports 10/100Base plus 2 port Gigabit Combo SFP 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. Moreover, the SFP slots support pluggable modules that enabling you to choose from a variety of transceivers.

#### 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.

#### Power over Ethernet

This switch is Power Sourcing Equipment (PSE), and it is fully complied with IEEE 802.3at PoE standard at maximum 30W power budget per port. It helps to save infrastructure wiring costs dramatically by eliminating electric wiring and less UPS needed. Also, it is compatible with IEEE802.3af standard PD devices.

#### Features

- Provides 8 10/100Base-TX PoE ports and 2 Gigabit/SFP ports
- 4096 MAC addresses
- 2.25M bits buffer memory
- PoE ports can support the IEEE 802.3at standard and power up 30W devices
- -40°C to 75°C (-40°F to 167°F) operating temperature range
- 1000 Mbps-Full-duplex, 10/100Mbps-Full/Half-duplex, Auto-Negotiation, Auto-MDI/MDIX

#### Safety

This device has been tested under UL508 standard for Industrial Control Equipment to endurance under test turn on and off 6,000 times while loaded, with no single failure; also with NEMA (National Manufacturers Association) TS2 Environmental certified for the Traffic Control Equipment that withstand extreme temperatures, operating voltage and humidity fluctuation, vibration and shock commonly experienced in severe outdoor environments.

#### Redundancy

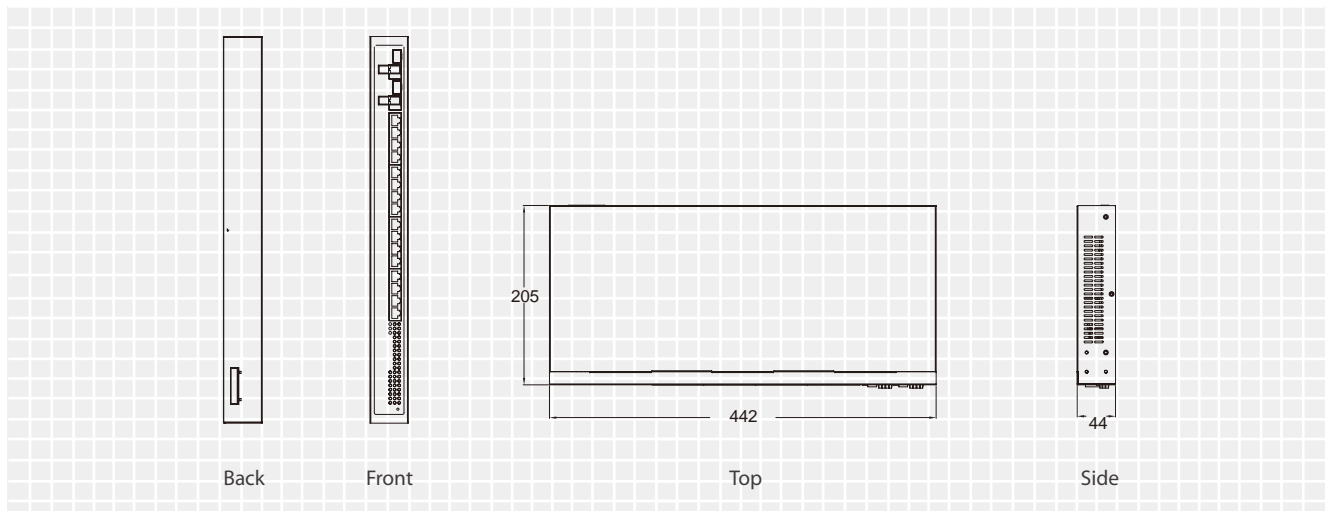
This redundant power system is designed to meet the challenge of power failure to ensure reliability and constant availability. Single power design works fine in non-critical network applications, but it falls short drastically for network applications in transportation, automate production or banking.

#### Plug & Play

This unmanaged Industrial Ethernet Switch is designed for the demanding industrial environments at businesses in need of instant connectivity with no setup or configure required, truly plug and play.

#### Diagrams

Unit: mm



## Specifications

Technology	
Standards	<ul style="list-style-type: none"> <li>IEEE802.3 10Base-T, IEEE802.3u 100Base-TX/FX/SFP, IEEE802.3x, IEEE802.3ab 1000BASE-T, IEEE802.3af, IEEE 802.3at, IEEE802.2z 1000BASE-SX/LX</li> </ul>
Forward and Filtering Rate	<ul style="list-style-type: none"> <li>14,880pps for 10Mbps</li> <li>148,810pps for 100Mbps</li> <li>1,488,100pps for 1000Mbps</li> </ul>
Packet Buffer Memory	<ul style="list-style-type: none"> <li>2.25M bits</li> </ul>
Processing Type	<ul style="list-style-type: none"> <li>Store-and-Forward</li> <li>Half-duplex back-pressure and IEEE802.3x full-duplex flow control</li> </ul>
Address Table Size	<ul style="list-style-type: none"> <li>4096 MAC addresses</li> </ul>

Power	
Power Input	<ul style="list-style-type: none"> <li>47 - 57VDC</li> </ul>
Power Consumption	<ul style="list-style-type: none"> <li>Device: Max. 15W (without PoE)</li> <li>PoE power budget (depends on power input):240W Max.</li> </ul>
PoE Power Output	<ul style="list-style-type: none"> <li>IEEE 802.3at: up to 30W/port, 50 - 57VDC, 600mA Max.</li> </ul>
<ul style="list-style-type: none"> <li>Supports reverse polarity protection</li> </ul>	

Mechanical	
Casing	<ul style="list-style-type: none"> <li>Metal case</li> </ul>
Dimensions	<ul style="list-style-type: none"> <li>Single Power: 442mm (W) x 205mm (D) x 44.2mm (H) (17.40" (W) x 8.07" (D) x 1.73" (H))</li> </ul>
Weight	<ul style="list-style-type: none"> <li>3Kg (6.61lbs.)</li> </ul>
Installation	<ul style="list-style-type: none"> <li>Rack Mounting</li> </ul>

Interface	
Ethernet Port	<ul style="list-style-type: none"> <li>10/100 BASE: 8 ports</li> <li>Gigabit: 2 ports</li> </ul>
LED Indicators	<ul style="list-style-type: none"> <li>Per Unit: Power Status: Power 1, 2 (Green), Fault</li> <li>Per Port: 10/100TX, 100FX: Link/Activity (Green), Speed (Amber)</li> <li>Per Port: Gigabit: Link/Activity (Green) , Speed (Amber)</li> <li>Per PoE: 10/100TX (Amber)</li> </ul>

Environment	
Operating Temperature	<ul style="list-style-type: none"> <li>-40°C to 75°C (-40°F to 167°F)</li> </ul>
Storage Temperature	<ul style="list-style-type: none"> <li>-40°C to 85°C (-40°F to 185°F)</li> </ul>
Ambient Relative Humidity	<ul style="list-style-type: none"> <li>5% to 95% (non-condensing)</li> </ul>

Regulatory Approvals	
ISO	<ul style="list-style-type: none"> <li>Manufactured in an ISO9001 facility</li> </ul>
Safety	<ul style="list-style-type: none"> <li>UL508 (Pending)</li> </ul>
EMI	<ul style="list-style-type: none"> <li>FCC Part 15, Class A</li> <li>EN61000-6-4 <ul style="list-style-type: none"> <li>EN55022</li> <li>EN61000-3-2</li> <li>EN61000-3-3</li> </ul> </li> </ul>
EMS	<ul style="list-style-type: none"> <li>EN61000-6-2 <ul style="list-style-type: none"> <li>EN61000-4-2 (ESD Standards) Contact: + / - 6KV; Criteria B Air: + / - 8KV; Criteria B</li> <li>EN61000-4-3 (Radiated FRI Standards) 10V/m, 80 to 2.7G; 80% AM Criteria A</li> <li>EN61000-4-4 (Burst Standards) Signal Ports: + / - 4KV; Criteria B D.C. Power Ports: + / - 4KV; Criteria B</li> <li>EN61000-4-5 (Surge Standards) Signal Ports: + / - 1KV; Line-to-Line; Criteria B D.C. Power Ports: + / - 0.5KV; Line-to-Earth; Criteria B</li> <li>EN61000-4-6 (Induced RFI Standards) Signal Ports: 10V @ 0.15 - 80MHz; Criteria A D.C. Power Ports: 10V @ 0.15 - 80MHz; Criteria A Earth Ground Ports: 10V @ 0.15 - 80MHz; Criteria A</li> <li>EN61000-4-8 (Magnetic Field Standards) 30A/m @ 50, 60Hz; Criteria A</li> </ul> </li> </ul>
Environmental Test Compliance	<ul style="list-style-type: none"> <li>IEC60068-2-6 Fc (Vibration Resistance) 5G @ 150Hz; Criterion 3 (Operation/Storage/Transport)</li> <li>IEC60068-2-27 Ea (Shock) 25G @ 11ms (Half-Sine Shock Pulse; Operation) 50G @ 11ms (Half-Sine Shock Pulse; Storage/Transport)</li> <li>IEC60068-2-32 Ed (Free Fall) 1M (3.281ft.)</li> </ul> <p>NEMA TS1/2 Environmental requirements for traffic control equipment</p>

## Order Information

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## Package Contents

IES-1020

Quick Installation Guide

## Optional Accessories

SFP-4200 - 1.25G MMF SFP Transceiver (550m, 850nm, -20 to 85C)  
SFP-4210 - 1.25G SMF SFP Transceiver (10km, 1310nm, -40 to 85C)  
SFP-4240 - 1.25G SMF SFP Transceiver (40km, 1310nm, -40 to 85C)  
SFP-4270 - 1.25G SMF SFP Transceiver (70km, 1550nm, -40 to 85C)  
SFP-4310 - 1.25G BIDI SMF SFP Transceiver (10km, 1310nm, -40 to 85C)  
SFP-4320 - 1.25G BIDI SMF SFP Transceiver (10km, 1550nm, -40 to 85C)

SFP-4330 - 1.25G BIDI SMF SFP Transceiver (20km, 1310nm, -40 to 85C)  
SFP-4340 - 1.25G BIDI SMF SFP Transceiver (20km, 1550nm, -40 to 85C)  
SFP-4350 - 1.25G BIDI SMF SFP Transceiver (40km, 1310nm, -40 to 85C)  
SFP-4360 - 1.25G BIDI SMF SFP Transceiver (40km, 1550nm, -40 to 85C)  
SFP-4370 - 1.25G BIDI SMF SFP Transceiver (60km, 1310nm, -40 to 85C)  
SFP-4380 - 1.25G BIDI SMF SFP Transceiver (60km, 1550nm, -40 to 85C)