

## Product Specification

5-Port 10/100Base-TX with 4-Port PoE

**ISW-504PS**

4-Port 10/100Base-TX PoE + 1-Port 100Base-FX

**ISW-514PS / ISW-514PS15 / ISW-514PSF**

Web Smart Industrial Fast Ethernet Switch

Version 1.0

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Change History:

Revision	Date	Author	Change List
Version 1.0	2010/8/19	Bryant Wu	Initial release

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Reviewed by:	Kent Kang	Approved by:	Tom Shih

## 1. PRODUCT DESCRIPTION



**ISW-504PS**

**ISW-514PS / ISW-514PS15**

**ISW-514PSF**

### Excellent Software of Web Smart Features

The **ISW-504PS / ISW-514PS / ISW-514PS15 / ISW-514PSF** Web Smart functions make it easy to survey and control the PoE power provision to the devices by the Web interface. Web Smart function includes VLAN, Trunk, QoS, PoE Configuration, Port Management, Alert Trap Configuration and etc. These are available for network management. With IP-30 aluminum metal that allows either DIN or panel mounting for efficient use of cabinet space. These Switches provide an integrated power supply with a wide range of voltages (24 or 48V DC) for worldwide operability or dual-redundant, reversible polarity, 24V DC and 48V DC power inputs for high availability applications requiring or backup power inputs.

### Robust Switch performance

The **ISW-504PS / ISW-514PS / ISW-514PS15 / ISW-514PSF** offers high performance switch architecture.

**ISW-504PS** equips with 5 x 10/100Mbps UTP ports.

**ISW-514PS** equips with 4 x 10/100Mbps UTP ports and 1 x 100FX (SC interface within 2km)

**ISW-514PS15** equips with 4 x 10/100Mbps UTP ports and 1 x 100FX (SC interface within 15km).

**ISW-514PSF** equips with 4 x 10/100Mbps UTP ports and 1 x 100FX (LC interface within optional of Single / Multi-Mode SFP module).

The ISW-5xxPS series model providing non-blocking switch fabric and wire-speed throughput as high as 1Gbps and the 1K MAC Address table, it also performs wire-speed packets transfer without risk of packet loss and the Flow Control function is Enabled by default and it provides fast and reliable data transfer.

All of the RJ-45 copper interfaces support 10/100Mbps Auto-Negotiation for optimal speed detection through RJ-45 Category 3, 4, 5, 5e or 6 cable. The standard Auto-MDI/MDI-X support can detect the type of connection to any Ethernet device without requiring special straight or crossover cables.

### Power over Ethernet

The PoE in-line power following the standard IEEE 802.3af makes the **ISW-504PS / ISW-514PS / ISW-514PS15 / ISW-514PSF** able to power on 4 PoE compliant devices at the distance up to 100 meters through the 4-pair Cat 5 / 5e / 6 UTP wires.

The PLANET **ISW-504PS / ISW-514PS / ISW-514PS15 / ISW-514PSF** include following models.

■ <b>ISW-504PS</b>	5 10/100Mbps UTP Port with 4-Port PoE Industrial Ethernet Switch (-10~60 Degree C)
■ <b>ISW-514PS</b>	4+1 100FX Port Multi-mode with 4-Port PoE Industrial Ethernet Switch (-10~60 Degree C) – SC / MM 2km
■ <b>ISW-514PS15</b>	4+1 100FX Port Single-mode with 4-Port PoE Industrial Ethernet Switch (-10~60 Degree C) – SC / SM 15km
■ <b>ISW-514PSF</b>	4+1 100FX Port with 4-Port PoE Industrial Ethernet Switch (-10~60 Degree C) – ( LC interface within optional of Single / Multi-Mode SFP module)

## 2. PRODUCT FEATURES

### ➤ **Physical Port**

Model Name	Ports		Fiber Optical Interface		
	Copper	Optical	Mode	Connector	Distance
<b>ISW-504PS</b>	5 x 10/100Base-TX	NA	NA	NA	NA
<b>ISW-514PS</b>	4 x 10/100Base-TX	1 x 100Base-FX	Multi-Mode	SC	2km
<b>ISW-514PS15</b>			Single-Mode	SC	15km
<b>ISW-514PSF</b>			Optional SFP Module	LC	Depend on SFP Module

### **IEEE 802.3af PoE**

- Complies with IEEE 802.3af Power over Ethernet End-Span PSE
- Up to 4 IEEE 802.3af devices powered
- Support PoE Power up to 15.4 Watts for each PoE ports
- Auto detect powered device (PD)
- Circuit protection prevent power interference between ports
- Remote power feeding up to 100m

### **PoE Management**

- Total PoE Power Budget Control
- Enable / Disable PoE Function on each port
- PoE port Power Feeding priority
- Power limit on PoE port
- PD Classification Detection

### **Web Management**

- Web interface for remote management
- Firmware upgrade through Web interface
- PLANET Smart Discovery utility automatically finds PLANTE devices on the network
- SNMP Trap for alarm notification of events

- VLAN and QoS configuration

### Switching

- Complies with IEEE 802.3 10Base-T, IEEE 802.3u 100Base-TX / 100Base-FX Ethernet standard
- Supports Auto-Negotiation and 10/100Mbps Half / Full Duplex and Auto MDI/MDI-X
- High performance Store and Forward architecture, Storm Control and runt/CRC filtering eliminates erroneous packets to optimize the network bandwidth
- Prevents packet loss with back pressure (Half-Duplex) and IEEE 802.3x PAUSE frame flow control (Full-Duplex)
- Backplane (Switching Fabric): 1Gbps
- Automatic address learning and address aging
- Integrated address look-up engine, support 1K absolute MAC addresses
- CSMA/CD Protocol

### Industrial Case / Installation

- IP-30 Aluminum Metal case / Protection
- DIN Rail and Wall Mount Design
- Redundant Power Design
- 24 or 48V DC, redundant power with polarity reverse protect function
- Supports EFT protection 6000 VDC for power line
- Supports 6000 VDC Ethernet ESD protection
- 10 to 60 Degree C operation temperature

## 3. PRODUCT SPECIFICATION

### 3.1 MAIN COMPONENT

<b>Switch MAC + PHY</b>	<b>ISW-504PS</b>	IC Plus IP178C x1
	<b>ISW-514PS / 514PS15 / 514PSF</b>	IC Plus IP178CH x1
<b>PoE Chipset</b>	Microsemi PowerDesign PD64004AH x 1	
<b>Fiber Transceiver</b>	<b>ISW-514PS</b>	AFBR-5803AZ Transceivers 3.3V x1
	<b>ISW-514PS15</b>	LS32-A3C-PI-N Transceivers 3.3V x1

### 3.2 Functional Specifications

Product	ISW-504PS	ISW-514PS	ISW-514PS15	ISW-514PSF
<b>Hardware Specification</b>				
10/100Base-TX Ports	5	4		
100Base-FX SC Port	NA	1		
Auto-MDI/MDI-X	YES			
Fiber Port Type	NA	SC / Multi-mode	SC / Single-mode	LC Single/Multi mode
Cable Distance		2km	15km	Depend on SFP Module
Optical Frequency		1300nm	1310nm	
Launch Power (dBm)		Max:-14 Min: -20	Max: 0 Min: -20	
Receive Sensitivity (dBm)		-32	-32	
Maximum Input Power (dBm)		-14	0	
Enclosure	IP-30 Aluminum Metal Case			
Installation	DIN Rail kit and Wall Mount ear			
LED	<b>System:</b> <ul style="list-style-type: none"> <li>• Power 1 (Green),</li> <li>• Power 2 (Green),</li> <li>• FAULT (Green)</li> </ul> <b>5 10/100Mbps ports:</b> <ul style="list-style-type: none"> <li>• LNK/ACT (Green)</li> </ul> <b>4 x PoE port :</b> <ul style="list-style-type: none"> <li>• PoE In Use (Orange)</li> </ul>	<b>System:</b> <ul style="list-style-type: none"> <li>• Power 1 (Green),</li> <li>• Power 2 (Green),</li> <li>• FAULT (Green)</li> </ul> <b>4 x 10/100Mbps ports:</b> <ul style="list-style-type: none"> <li>• LNK/ACT (Green)</li> </ul> <b>1 x 100FX port:</b> <ul style="list-style-type: none"> <li>• LNK/ACT(Green)</li> </ul> <b>4 x PoE port :</b> <ul style="list-style-type: none"> <li>• PoE In Use (Orange)</li> </ul>		
Protection	ESD (Ethernet): 6KV DC Surge (Power): 6KV DC			
<b>Switch Specification</b>				
Switch Architecture	Store-and-Forward			
Switch Fabric	1Gbps / non-blocking			
Switch Throughput	0.74Mpps@64bytes			
Address Table	1K entries			
Maximum Frame Size	1536 Bytes			
Packet Buffer	488 Kbit			
Flow Control	Back Pressure for Half Duplex IEEE 802.3x Pause Frame for Full Duplex			
<b>Power over Ethernet</b>				
PoE Standard	IEEE 802.3af PSE (Power Sourcing Equipment)			

<b>Units can be Powered</b>	4
<b>PoE Power Output</b>	48V DC, Max. 15.4 Watts, 350mA
<b>Power Pin Assignment</b>	1/2(+), 3/6(-)
<b>Layer 2 Function</b>	
<b>Management</b>	Web management, SNMP Trap
<b>VLAN</b>	<ul style="list-style-type: none"> <li>• Port-Based VLAN</li> <li>• IEEE 802.1Q Tag-Based VLAN, Up to 16 VLAN groups</li> </ul>
<b>QoS</b>	2 priority queues for three type of Class of Service <ul style="list-style-type: none"> <li>• Port-Based</li> <li>• IEEE 802.1p priority tag</li> <li>• TCP/IP header's DSCP classifier</li> <li>• Weighted Round Robin queue scheduling</li> </ul>
<b>Bandwidth Control</b>	Inbound Rate Limit and Outbound Traffic shaping
<b>Storm Control</b>	Disable, 12.5%, 25%, 50%, 62.5% 4 levels
<b>Standards Conformance</b>	
<b>Standards Compliance</b>	IEEE 802.3 10Base-T IEEE 802.3u 100Base-TX / 100Base-FX IEEE 802.3x Flow Control and Back pressure
<b>Stability testing</b>	IEC60068-2-32(Free fall) IEC60068-2-27(Shock) IEC60068-2-6(Vibration)
<b>Network cables</b>	<ul style="list-style-type: none"> <li>■ 10/100Base-TX:               <ul style="list-style-type: none"> <li>• 2-Pair UTP Cat. 3, 4, 5, 5e, 6 (100meters, max.) EIA/TIA-568 100-ohm STP (100meters, max.)</li> </ul> </li> <li>■ 100Base-FX:               <ul style="list-style-type: none"> <li>• <b>Multi-Mode</b> optic fiber 62.5/125µm or 50/125µm</li> <li>• <b>Single-Mode</b> optic fiber 9/125µm</li> </ul> </li> </ul>
<b>Environment</b>	
<b>Temperature</b>	Operating: -10~60 Degree C Storage: -40~70 Degree C
<b>Humidity Operating</b>	Operating: 5~90% Storage: 5~90% (Non-condensing)

### 3.3 Physical Specification

■ **Dimensions:**

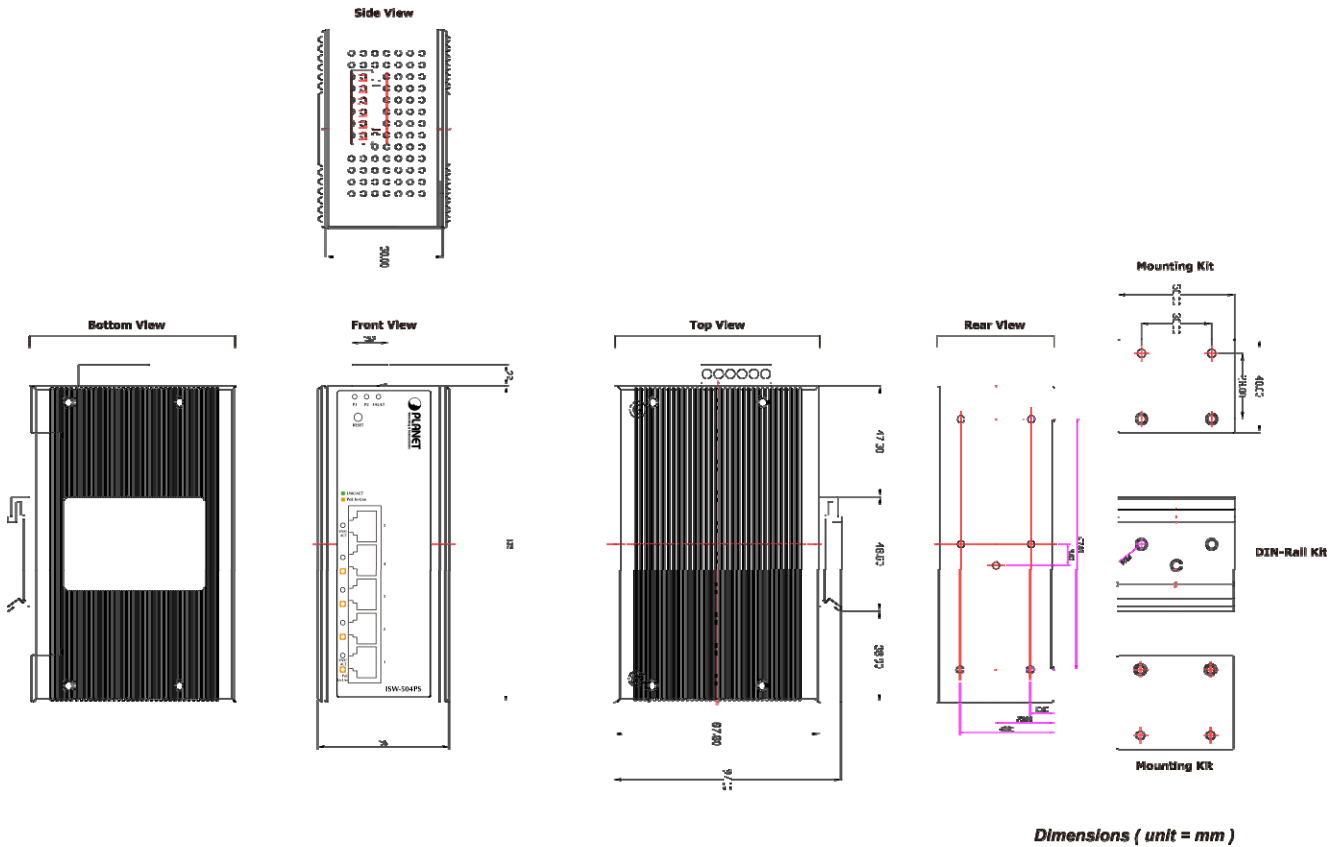
135mm x 87.8mm x 56mm (D x W x H)

■ **Weight:**

871g

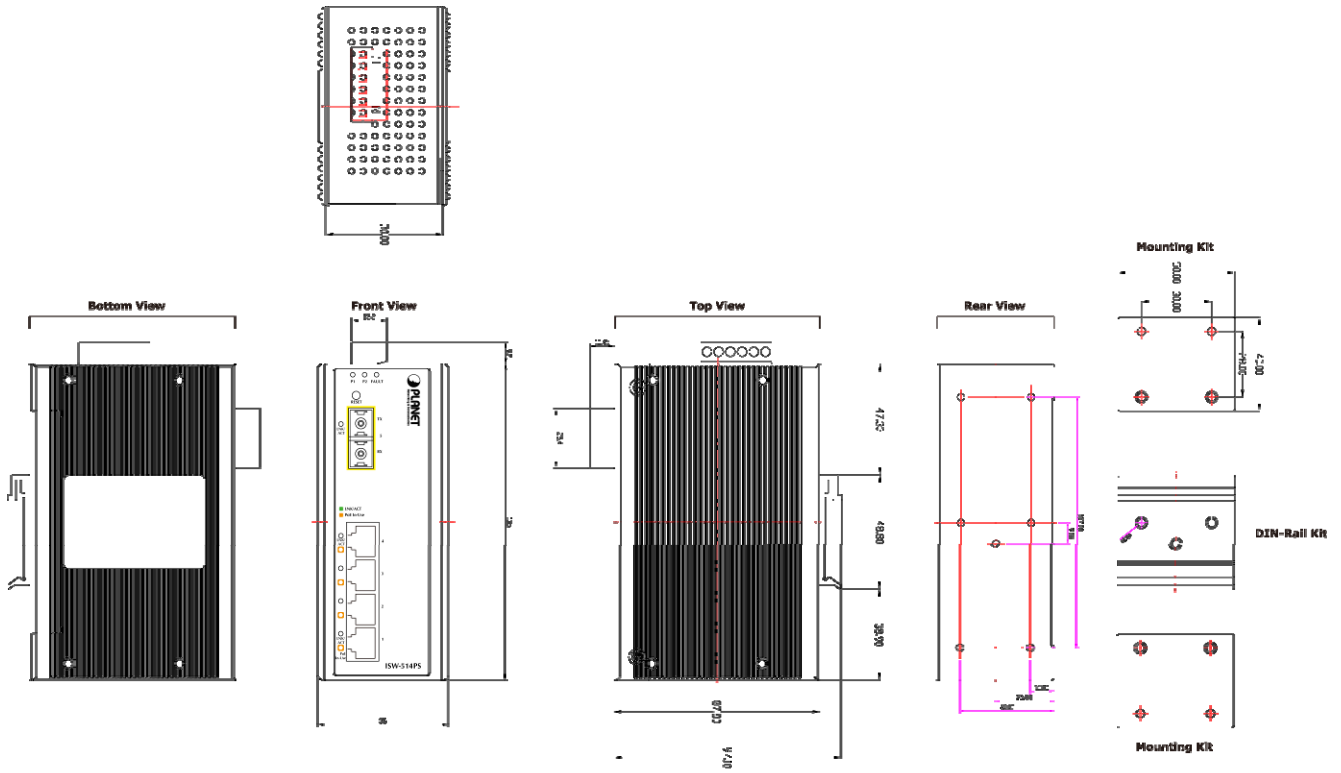
■ **Diagrams:**

**ISW-504PS:**



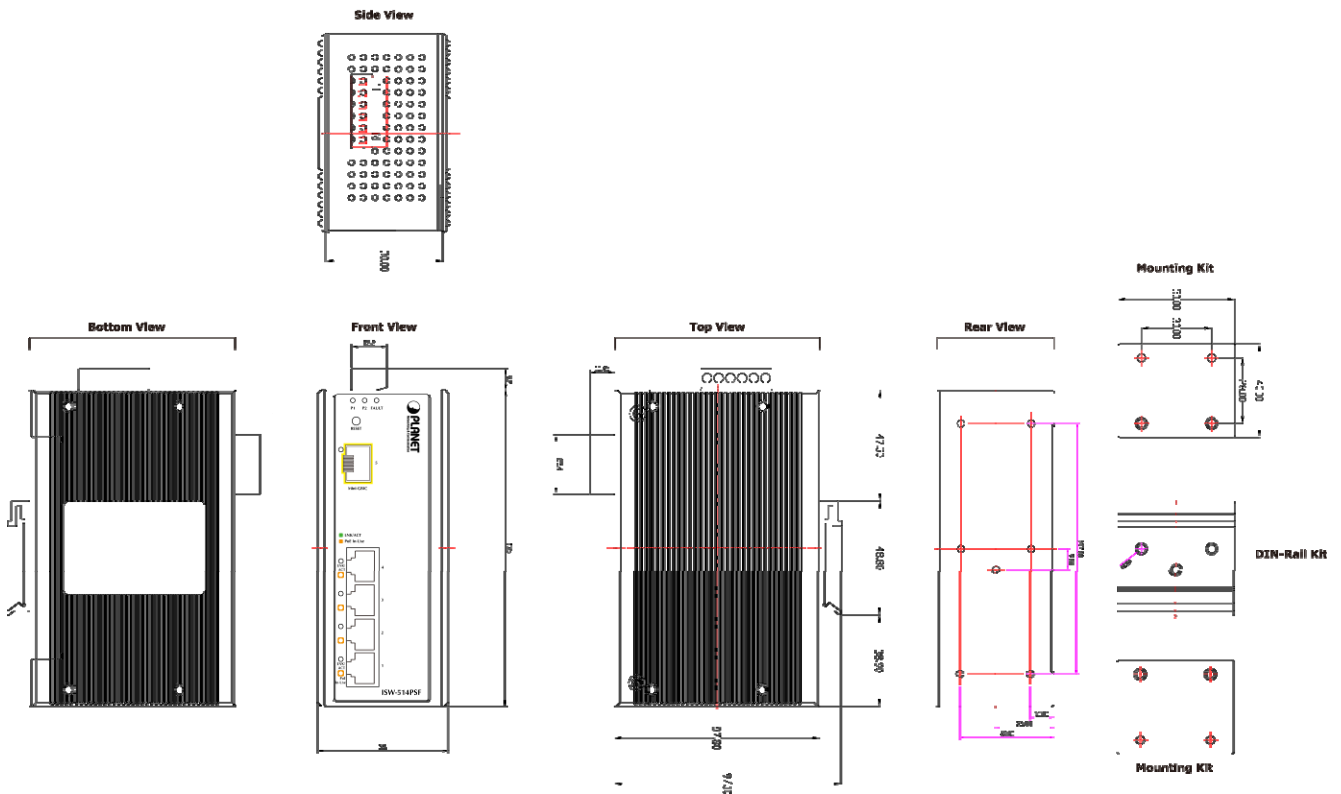
**Confidential**

**ISW-514PS / ISW-514PS15:**



*Dimensions ( unit = mm )*

**ISW-514PSF:**

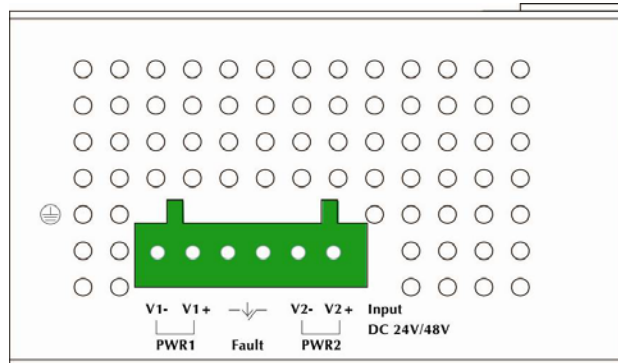


*Dimensions ( unit = mm )*

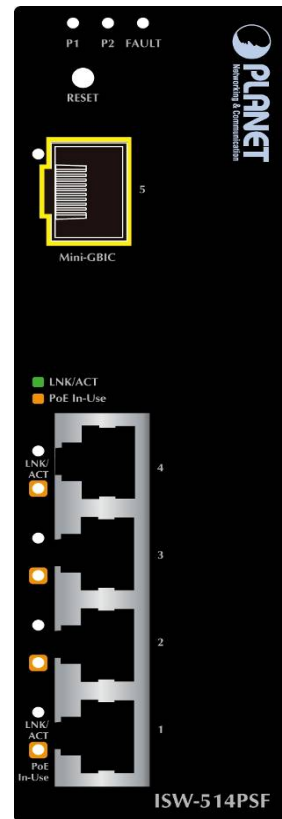
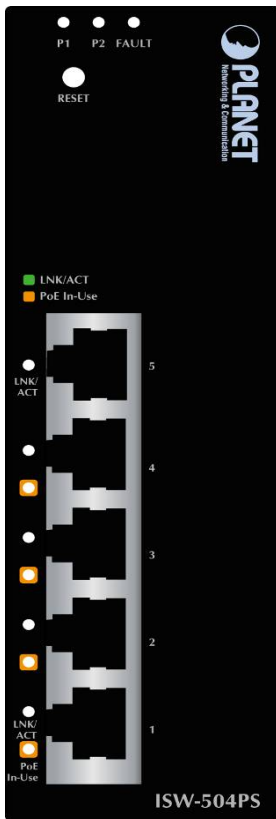


■ **Top View**

The top panel of the Industrial PoE Switch has one terminal block connector of two DC power inputs and one fault alarm.



■ **Front Panel**



**■ LED Definition**

## &gt; System

LED	Color	Function
P1	Green	<b>Light:</b> indicates the power 1 has power.
P2	Green	<b>Light:</b> indicates the power 2 has power.
FAULT	Green	<b>Light:</b> indicates the either power 1 or power 2 has no power.

## &gt; 10/100Base-TX PoE, RJ-45 Interface

LED	Color	Function
LNK/ACT	Green	<b>Light:</b> indicates the link through that port is successfully established at 10/100Mbps. <b>Blink:</b> indicates the Switch is actively sending or receiving data over that port.
PoE In Use	Orange	<b>Light:</b> indicates the port is providing 48V DC in-line power. (1-4 ports).

## &gt; 100Base-FX SC Fiber Interface

LED	Color	Function
LNK/ACT	Green	<b>Light:</b> indicates the link through that port is successfully established at 100Mbps. <b>Blink:</b> indicates the Switch is actively sending or receiving data over that port.

**3.4 Environmental Specification**
**Operating**

Temperature: -10~60 Degree C  
Relative Humidity: 5~90% RH (non-condensing)

**Storage**

Temperature: -40~70 Degree C  
Relative Humidity: 5~90% RH (non-condensing)

**3.5 Electrical Specification**
**■ Input Voltage:**

	ISW-504PS / ISW-514PS / ISW-514PS15 / ISW-514PSF
External Power Input:	DC 24V or 48V
Redundant power:	DC 24V or 48V

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**■ Power consumption: (Watts)**

INPUT \ Model	Input Voltage	ISW-504PS	ISW-514PS / ISW-514PS15	ISW-514PSF
System on	24V	6.24	8.6	6.24
	48V	5.28	8.2	5.28
Ethernet Full Load	24V	6.96	9.24	6.72
	48V	6.24	9.16	6.24
PoE Full Load (4-Port 15.4Watts)	24V	77.76	83.6	76.8
	48V	70.56	80.2	70.48

### 3.6 Regulatory Compliance

**EMI:**

- FCC Class A,
- CE EN61000-4-2
- CE EN61000-4-3
- CE EN61000-4-4
- CE EN61000-4-5
- CE EN61000-4-6
- CE EN61000-4-8
- CE EN61000-4-11
- CE EN61000-4-12
- CE EN61000-6-2
- CE EN61000-6-4

**Stability Testing:**

- IEC60068-2-32 (Free Fall)
- IEC60068-2-27 (Shock)
- IEC60068-2-6 (Vibration)

### 3.7 Reliability

MTBF &gt; 100,000 hrs @ 25 Degree C

### 3.8 Basic Packaging

- The Industrial PoE Switch            X1
- CD User's Manual                        X1
- Quick Installation Guide                X1
- DIN Rail Kit                                X1
- Wall Mount Kit                             X1

### 3.9 PACKING DIMENSION

**Dimension:**            202mm x 140mm x 94mm

**Weight:**                1.08kg (Goss weight)  
                               8pcs in one carton