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

Change History:

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

Author	Bryant Wu	Editor:	Bryant Wu
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, Bandwidth Control 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.

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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.

■ **ISW-504PS**	5 10/100Mbps UTP Port with 4-Port PoE Industrial Ethernet Switch (-10~60 Degree C)
■ **ISW-514PS**	4+1 100FX Port Multi-mode with 4-Port PoE Industrial Ethernet Switch (-10~60 Degree C) – SC / MM 2km
■ **ISW-514PS15**	4+1 100FX Port Single-mode with 4-Port PoE Industrial Ethernet Switch (-10~60 Degree C) – SC / SM 15km
■ **ISW-514PSF**	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
ISW-504PS	5 x 10/100Base-TX	NA	NA	NA	NA
ISW-514PS	4 x 10/100Base-TX	1 x 100Base-FX	Multi-Mode	SC	2km
ISW-514PS15			Single-Mode	SC	15km
ISW-514PSF			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

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

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Networking & Communication

3.2 Functional Specifications

Product	ISW-504PS	ISW-514PS	ISW-514PS15	ISW-514PSF
Hardware Specification				
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	**System:** • Power 1 (Green), • Power 2 (Green), • FAULT (Green) **5 10/100Mbps ports:** • LNK/ACT (Green) **4 x PoE port :** • PoE In Use (Orange)	**System:** • Power 1 (Green), • Power 2 (Green), • FAULT (Green) **4 x 10/100Mbps ports:** • LNK/ACT (Green) **1 x 100FX port:** • LNK/ACT(Green) **4 x PoE port :** • PoE In Use (Orange)		
Protection	ESD (Ethernet): 6KV DC Surge (Power): 6KV DC			
Switch Specification				
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			
Power over Ethernet				
PoE Standard	IEEE 802.3af PSE (Power Sourcing Equipment)			

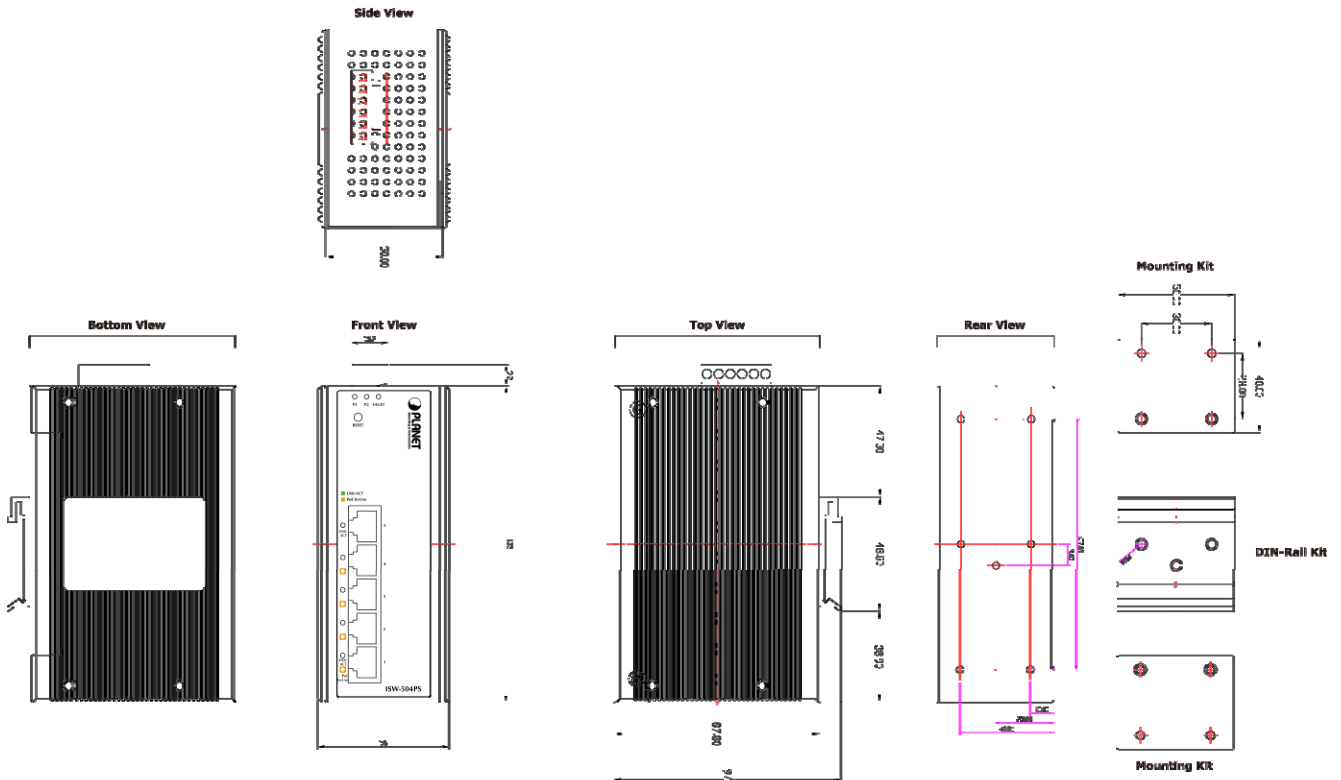| Units can be Powered	4
PoE Power Output	48V DC, Max. 15.4 Watts, 350mA
Power Pin Assignment	1/2(+), 3/6(-)
Layer 2 Function	
Management	Web management, SNMP Trap
VLAN	• Port-Based VLAN • IEEE 802.1Q Tag-Based VLAN, Up to 16 VLAN groups
QoS	2 priority queues for three type of Class of Service • Port-Based • IEEE 802.1p priority tag • TCP/IP header's DSCP classifier • Weighted Round Robin queue scheduling
Bandwidth Control	Inbound Rate Limit and Outbound Traffic shaping
Storm Control	Disable, 12.5%, 25%, 50%, 62.5% 4 levels
Standards Conformance	
Standards Compliance	IEEE 802.3 10Base-T IEEE 802.3u 100Base-TX / 100Base-FX IEEE 802.3x Flow Control and Back pressure
Stability testing	IEC60068-2-32(Free fall) IEC60068-2-27(Shock) IEC60068-2-6(Vibration)
Network cables	■ 10/100Base-TX: • 2-Pair UTP Cat. 3, 4, 5, 5e, 6 (100meters, max.) EIA/TIA-568 100-ohm STP (100meters, max.) ■ 100Base-FX: • **Multi-Mode** optic fiber 62.5/125µm or 50/125µm • **Single-Mode** optic fiber 9/125µm
Environment	
Temperature	Operating: -10~60 Degree C Storage: -40~70 Degree C
Humidity Operating	Operating: 5~90% Storage: 5~90% (Non-condensing)

3.3 Physical Specification

■ **Dimensions:**

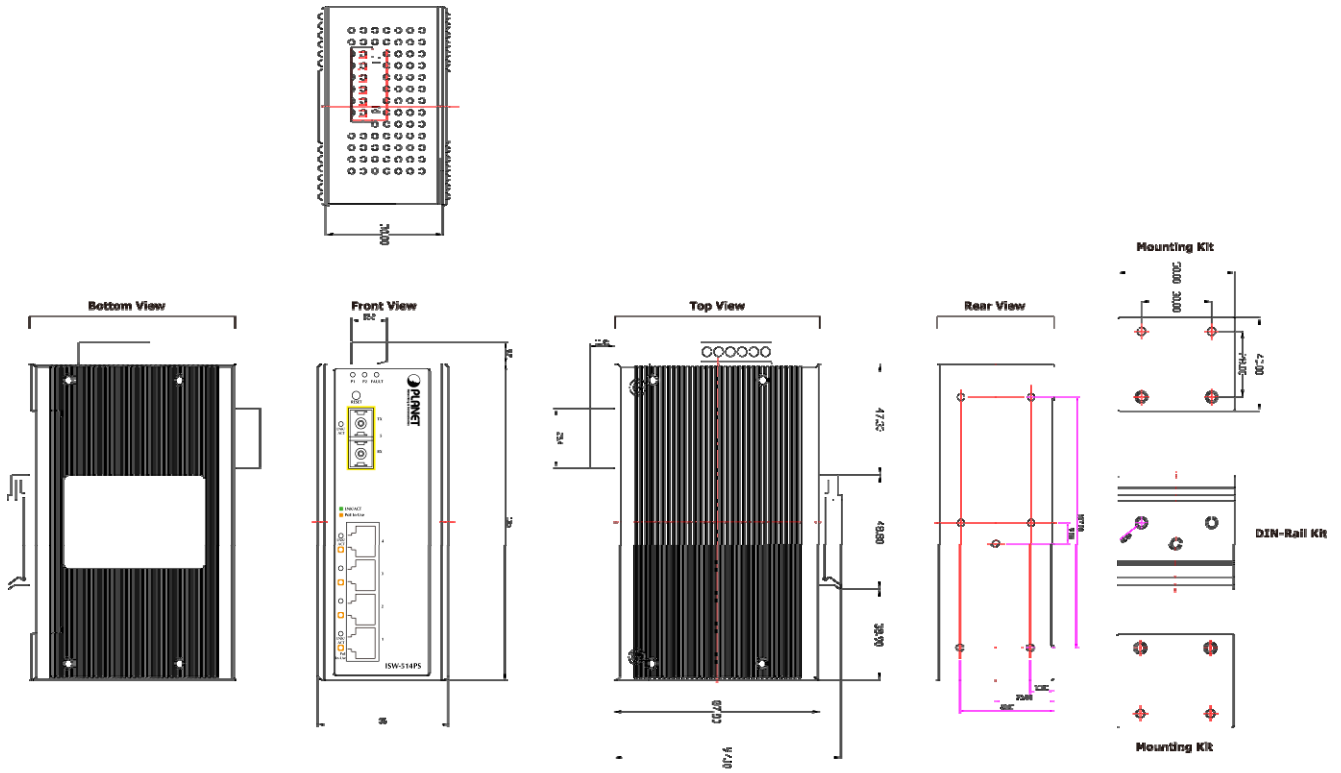135mm x 87.8mm x 56mm (D x W x H)

■ **Weight:**

871g
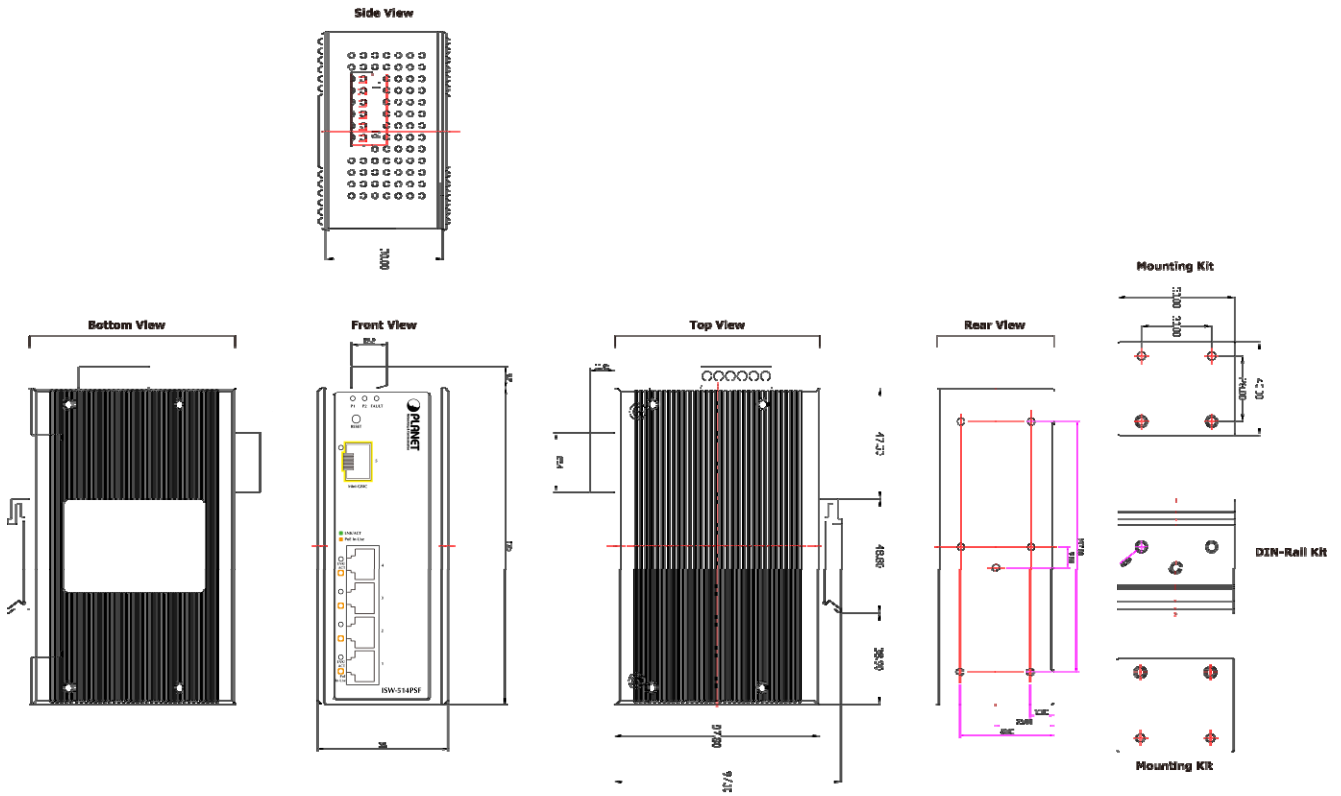
■ **Diagrams:**

ISW-504PS:

Dimensions (unit = mm)
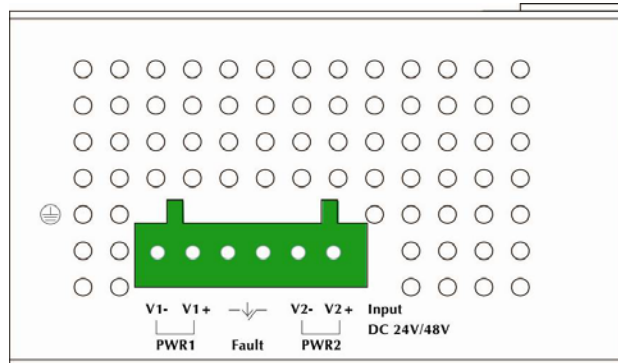
ISW-514PS / ISW-514PS15:

Dimensions (unit = mm)

ISW-514PSF:

Dimensions (unit = mm)

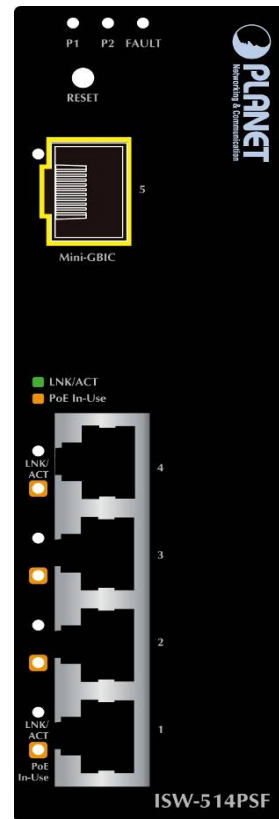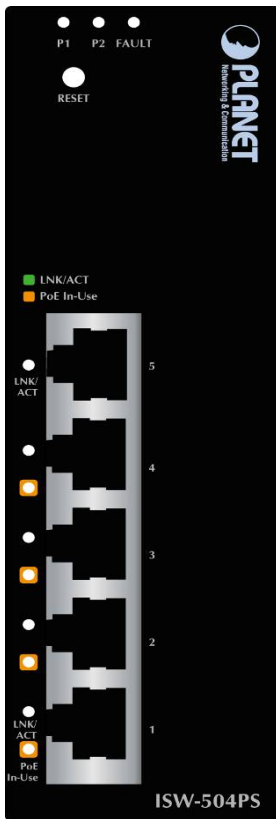**Confidential**

■ **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**

➢ **System**

LED	Color	Function
P1	Green	**Light:** indicates the power 1 has power.
P2	Green	**Light:** indicates the power 2 has power.
FAULT	Green	**Light:** indicates the either power 1 or power 2 has no power.

➢ **10/100Base-TX PoE, RJ-45 Interface**

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

➢ **100Base-FX SC Fiber Interface**

LED	Color	Function
LNK/ACT	Green	**Light:** indicates the link through that port is successfully established at 100Mbps. **Blink:** 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

■ **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 > 100,000 hrs @ 25 Decree 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