

## Product Specification

Industrial IP67 Rated 8-Port 10/100Mbps M12 Ethernet Switch with 4-Port PoE

### ISW-804PT-M12

Version 1.0

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Change History:

Revision	Date	Author	Change List
Version 1.0	2011/7/29	Marc Liao	Initial release

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<b>Reviewed by:</b>	Kent Kang	<b>Approved by:</b>	Tom Shih

## 1. PRODUCT DESCRIPTION



The ISW-804PT-M12 equipped with IP67 industrial case protection, provides a high level of immunity against electromagnetic interference and heavy electrical surges which are usually found on plant floors or in curb side traffic control cabinets. The compact, IP67 standard metal case of ISW-804PT-M12 allows either DIN rail or wall mounting for efficient use of cabinet space.

### Reliable Data and Power over Ethernet

The ISW-804PT-M12 equipped with eight 10/100Base-TX auto-negotiation ports M12 connector with 4-Port IEEE 802.3af PoE Ports (Port 5 to port 8); per PoE port provide 15.4 Watts PoE output. The M12 connector provides tightly and strong connection and guarantee stable Ethernet operation performance under high vibration and shock environment.

### Environmentally Hardened Design

The ISW-804PT-M12 provides a high level of immunity against electromagnetic interference and heavy electrical surges which are usually found on plant floors or in curb side traffic control cabinets. Being able to operate under the temperature range from -40 to 75 Degree C, the ISW-804PT-M12 can be placed in almost any difficult environment. The ISW-804PT-M12 also possesses an integrated power supply source with wide range of voltages (48V DC) for worldwide high availability applications requiring dual or backup power inputs.

### High Performance

The ISW-804PT-M12 has 2K MAC Address table and offers wire-speed packets transfer performance without risk of packet loss, the high data throughput of the device makes it ideal for most Gigabit environments. With a 1.6Gbps internal switching fabric and featuring auto negotiation support in each Fast Ethernet port, the ISW-804PT-M12 can handle large amounts of data in a secure topology linking to a backbone or high capacity servers.

### Easy Installation

The flow control function enables the ISW-804PT-M12 to provide fast and reliable data transfer, all of the M12 RJ-45 copper interfaces in the ISW-804PT-M12 support 10/100Mbps Auto-Negotiation for optimal speed detection through RJ-45 Category 3, 4, 5, 5e, 6 cables. The standard Auto-MDI/MDI-X support can detect the type of connection to any Ethernet device without requiring special straight or crossover cables.

## 2. PRODUCT FEATURES

### Physical Port

- 8-Port 10/100Mbps M12 Connector with IP67 protection
- 4-Port IEEE 802.3af PoE Ports (**Port 5 to port 8**)

### Layer 2 Features

- Supports Auto-negotiation and 10/100Mbps half / full duplex mode
- High performance Store and Forward architecture, 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): 1.6Gbps
- Integrated address look-up engine, support 2K absolute MAC addresses
- Automatic address learning and address aging
- CSMA/CD Protocol

### Industrial Case / Installation

- IP67 Aluminum metal case / Protection
- DIN Rail and Wall Mount Design
- Waterproof / dustproof design
- 48V DC, redundant power with polarity reverse protect function and connective removable terminal block for master and slave power
- Supports EFT protection 6000 VDC for power line
- Supports 6000 VDC Ethernet ESD protection
- -40 to 75 Degree C operating temperature

## 3. PRODUCT SPECIFICATION

### 3.1 MAIN COMPONENT

<b>Switch ASIC:</b>	IC Plus IP178D	X1
<b>POE Chipset</b>	Microsemi PowerDesign PD64004	X1

### 3.2 FUNCTION SPECIFICATION

<b>Model</b>	<b>ISW-804PT-M12</b>
<b>Hardware Specification</b>	
<b>10/100Base-TX Ports</b>	8 x M12, 4-Pole D-coding female connector
<b>IEEE 802.3af PoE Ports</b>	4, port 5 to port 8
<b>Power Connector</b>	1 x M12, 5-Pole A-Coding male connector
<b>Enclosure</b>	IP67 Aluminum
<b>Installation</b>	DIN rail kit and wall mount ear
<b>ESD Protection</b>	6KV DC
<b>EFT Protection</b>	6KV DC
<b>Switch Specification</b>	
<b>Switch Processing Scheme</b>	Store-and-Forward
<b>Address Table</b>	2K entries
<b>Flow Control</b>	Back pressure for half duplex IEEE 802.3x Pause Frame for full duplex
<b>Switch Fabric</b>	1.6Gbps
<b>Throughput (packet per second)</b>	1.19Mpps
<b>Maximum Transmit Unit</b>	1536 bytes
<b>Network Cables</b>	10Base-T: 2-Pair UTP Cat.3,4,5 up to 100m (328ft) 100Base-TX: 2-Pair UTP Cat.5, 5e, 6 up to 100m (328ft) EIA/TIA-568 100-ohm STP (100m, max.)
<b>Power over Ethernet</b>	
<b>PoE Standard</b>	IEEE 802.3af Power over Ethernet / PSE
<b>PoE Power Supply Type</b>	End-Span
<b>PoE Power Output</b>	48V DC Per Port, 350mA . Max. 15.4 Watts
<b>Power Pin Assignment</b>	1/2(+), 3/6(-)
<b>PoE Budget</b>	60 Watts
<b>Standards Conformance</b>	
<b>Standards Compliance</b>	IEEE 802.3 10Base-T Ethernet IEEE 802.3u 100Base-TX Fast Ethernet IEEE 802.3x Full-Duplex Flow Control IEEE 802.3af Power over Ethernet
<b>Stability Testing</b>	IEC60068-2-32(Free fall) IEC60068-2-27(Shock) IEC60068-2-6(Vibration)

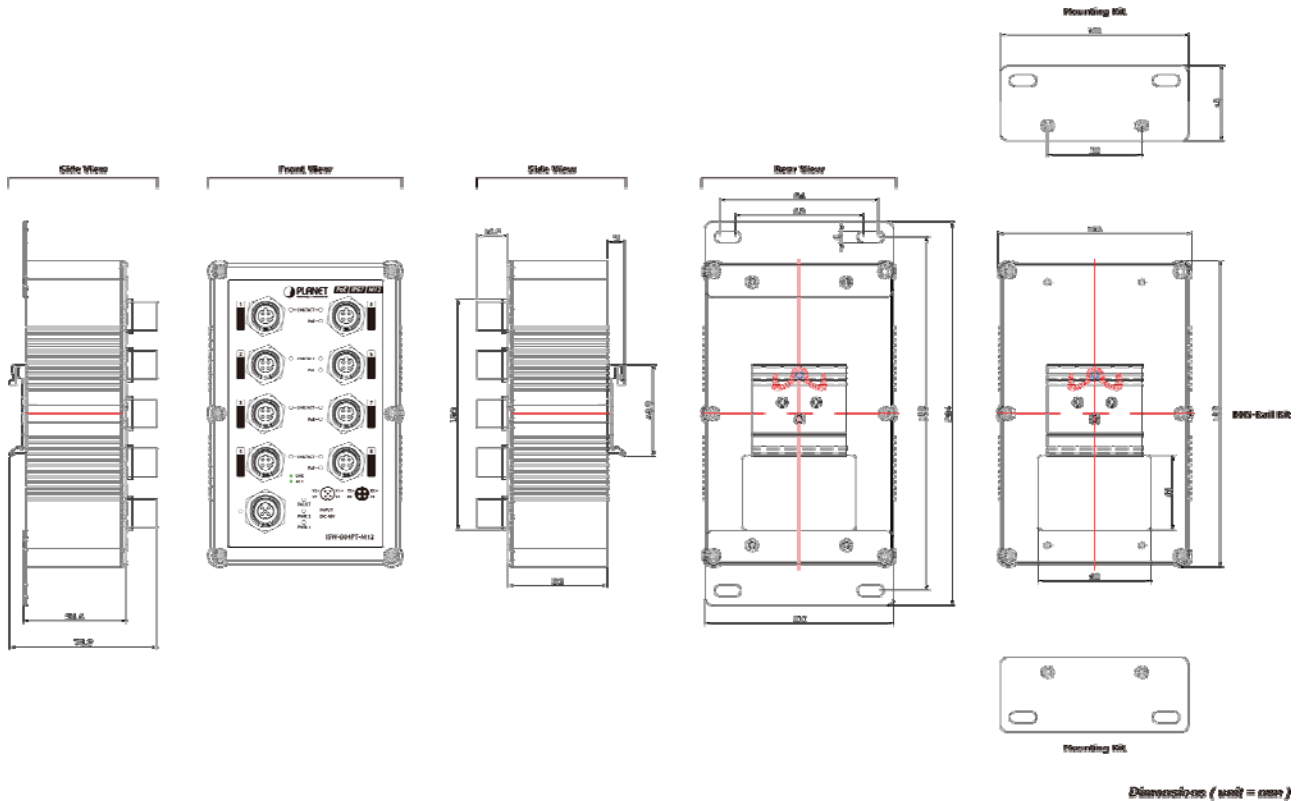
### 3.3 PHYSICAL SPECIFICATIONS:

**Dimensions:**

163 x 103 x 53mm (W x D x H)

**Weight:**

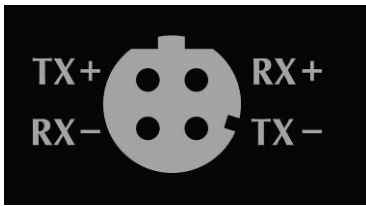
976g



**LED Definition**

LED	Color	Function
PWR 1	Green	<b>Lit:</b> indicate the power 1 has power.
PWR 2	Green	<b>Lit:</b> indicate the power 2 has power.
FAULT	Green	<b>Lit:</b> indicate the either power 1 or power 2 has no power.
LNK / ACT	Green	<b>Lit:</b> indicate the Switch is successfully connecting to the network at 10/100Mbps. <b>Blink:</b> indicate that the Switch is actively sending or receiving data over that port. <b>Off:</b> indicate the Switch is not connecting to the network at 10/100Mbps.
PoE In-Use Port 5 to port 8	Orange	<b>Lit:</b> indicate the Switch port is providing PoE power output. <b>Off:</b> indicate the Switch port is not providing PoE power output.

### M12 4-Pin D-coded Ethernet Connector PIN Assignment



PIN	Signal	PoE PIN	Color of UTP Cable
1	TX+	V+	White / Orange
2	TX-	V+	Orange
3	RX+	V-	White / Green
6	RX-	V-	Green

### 3.4 ENVIRONMENTAL SPECIFICATION

**Operating:**

**Temperature:** -40°C ~75 Degree C  
**Relative Humidity:** 5% ~ 95% (non-condensing)

**Storage:**

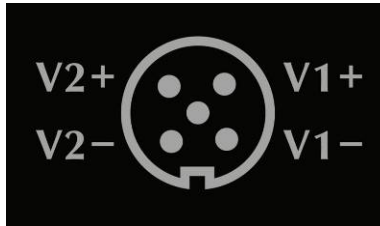
**Temperature:** -40°C ~75 Degree C  
**Relative Humidity:** 5% ~ 95% (non-condensing)

### 3.5 ELECTRICAL SPECIFICATION

**Power Requirement:** 48V DC, Redundant power with polarity reverse protection function

**Power Consumption:** 65 Watts / 221 BTU

**M12 5-Pin A-coded PIN Assignment:**



**3.6 REGULATORY COMPLIANCE**

FCC Part 15 Class A, CE

**3.7 REALIABILITY**

MTBF > 100,000Hrs

**3.8 BASIC PACKAGING**

- Industrial IP67 Rated M12 Ethernet Switch x1
- User's Manual x 1
- 1.2m M12-to-RJ45 UTP Cable x1
- 1.2m M12 Power Cable x1
- DIN Rail Kit x 1
- Wall Mount Kit x 1

**3.9 PACKING DIMENSION**

**Dimension:** 176mm (W) x 238mm (D) x 117mm (H)

**Weight:** 1.3kg (Gross weight)

10pcs in one carton