Product Specifications

Industrial 5-Port 10/100TX Compact Ethernet Switch

ISW-500T

Version 1.0

Change History:

Revision	Date	Author	Change List
1.0	2017/6/5	Calvin Chao	Initial release

Author	Calvin Chao	**Editor:**	Calvin Chao
Reviewed by:		**Approved by:**	Kent Kang

1. PRODUCT DESCRIPTION

Compact Size for More Practicability and Convenience

PLANET **ISW-500T Industrial 5-Port 10/100TX Compact Ethernet Switch**, suitable for industrial use, features 5 10/100Mbps auto-negotiation ports, IP30-rated rugged but compact case and a wide-ranging redundant power system (**12~48V DC** or **24V AC**). The ISW-500T is able to operate in any harsh environment with operating temperature ranging from **-40 to 75 degrees C**.

As the trend for an IIoT (Industrial Internet of Things) infrastructure is gradually on demand, the ISW-500T is especially designed to make the deployment of an industrial network easy as it comes with a Plug and Play feature. Besides, it is stable and reliable when it comes to fast data and power transmission.

Low Power Consumption for Green Networking

The ISW-500T, adopting the advanced green networking technology, provides the link-on cable length power saving and link-down power saving methods. These features make the ISW-500T consume very low power in full load operation mode, which helps conserve energy effectively but maintains high performance efficiently.

With the **Auto Power Saving** and **IEEE 802.3az Energy Efficient Ethernet (EEE)** Protocol, the ISW-500T can automatically detect cable link status and network traffic, and thus is able to adjust power consumption accordingly. It enables the switch to consume less power when it is less active.

Dual Power Input for High Availability Network System

The ISW-500T features a strong dual power input system with wide-ranging voltages (12V~48V DC or 24V AC) incorporated into customer's automation network to enhance system reliability and uptime. In the example below, when power supply 1 fails to work, the hardware failover function will be activated automatically to keep powering the ISW-500T via power supply 2 alternatively without any loss of operation.

Robust Protection

The ISW-500T provides contact discharge of ±6KV DC and air discharge of ±8KV DC for Ethernet ESD protection. It also supports ±4KV surge immunity to improve product stability and protects users' networks from devastating ESD attacks, making sure the flow of operation does not fluctuate.

High Switch Performance

The ISW-500T offers a high-performance switch architecture. With the 5 10/100Mbps Fast Ethernet ports providing non-blocking switch fabric and wire-speed throughput as high as 1Gbps and the 1K MAC address table, the ISW-500T can perform wire-speed packet transfer without the risk of packet loss. The flow control function enables the ISW-500T to provide fast and reliable data transfer.

Plug and Play

All of the RJ45 copper interfaces in the ISW-500T support 10/100Mbps auto negotiation for optimal speed detection through RJ45 Category 6, 5 or 5e cables. The standard auto-MDI/MDI-X support can detect the type of connection to any Ethernet device without requiring special straight-through or crossover cables.

2. PRODUCT FEATURES

Physical Port

- 5-port 10/100BASE-TX RJ45 with auto MDI/MDI-X function

Layer 2 Features

- Complies with IEEE 802.3 10BASE-T, IEEE 802.3u 100BASE-TX Ethernet standard
- Supports auto-negotiation and 10/100Mbps half/full duplex mode
- Prevents packet loss with back pressure (half-duplex) and IEEE 802.3x pause frame flow control (full-duplex)
- Complies with IEEE 802.3az Energy Efficient Ethernet (EEE)
- IEEE 802.1p CoS
- Supports 1K MAC address
- Automatic address learning and address aging

Industrial Case and Installation

- IP30 metal case
- DIN rail and wall-mount design
- 12 to 48V DC, redundant power with polarity reverse protect function
- 24V AC power input acceptable
- Supports 6000 VDC Ethernet ESD protection
- -40 to 75 degrees C operating temperature
- Free fall, shock-proof and vibration-proof for industries

3. PRODUCT SPECIFICATIONS

3.1 MAIN COMPONENT

Switch ASIC	IP178GI	x 1

3.2 FUNCTION SPECIFICATIONS

Product	ISW-500T
Hardware Specifications	
Copper Ports	5 10/100BASE-TX RJ45 auto-MDI/MDI-X ports
Switch Architecture	Store-and-Forward
Switch Fabric	1Gbps (non-blocking)
Throughput (packet per second)	0.74Mpps@ 64 bytes
Address Table	1K entries, automatic source address learning and aging
Shared Data Buffer	448K bits
Flow Control	IEEE 802.3x pause frame for full-duplex Back pressure for half-duplex
ESD Protection	6KV DC
Enclosure	IP30 metal case
Installation	DIN rail kit and wall-mount kit
Connector	Removable 6-pin terminal block for power input Pin 1/2 for Power 1, Pin 3/4 for fault alarm, Pin 5/6 for Power 2
Alarm	One relay output for power failure. Alarm relay current carry ability: 1A @ 24V DC
LED Indicator	System: Power 1 (Green) Power 2 (Green) Fault Alarm (Red) Per 10/100TX RJ45 Ports: 10/100 LNK/ACT (Green)
Dimensions (W x D x H)	70 x 104 x 30 mm
Weight	255g
Power Requirements	Dual 12~48V DC, 24V AC
Power Consumption	Max. 1.1 watts/3.77BTU (Power on without any connection) Max. 2 watts/6.86BTU (Ethernet full loading)
Standards Conformance	
Regulatory Compliance	FCC Part 15 Class A, CE
Stability Testing	IEC60068-2-32 (free fall) IEC60068-2-27 (shock) IEC60068-2-6 (vibration)
Standards Compliance	IEEE 802.3 10BASE-T IEEE 802.3u 100BASE-TX/100BASE-FX IEEE 802.3x flow control and back pressure IEEE 802.1p Class of Service IEEE 802.1X Port Authentication Network Control IEEE 802.3az Energy Efficient Ethernet (EEE)

Environment	
Operating Temperature	-40 ~ 75 degrees C
Storage Temperature	-40 ~ 85 degrees C
Humidity	5 ~ 95% (non-condensing)

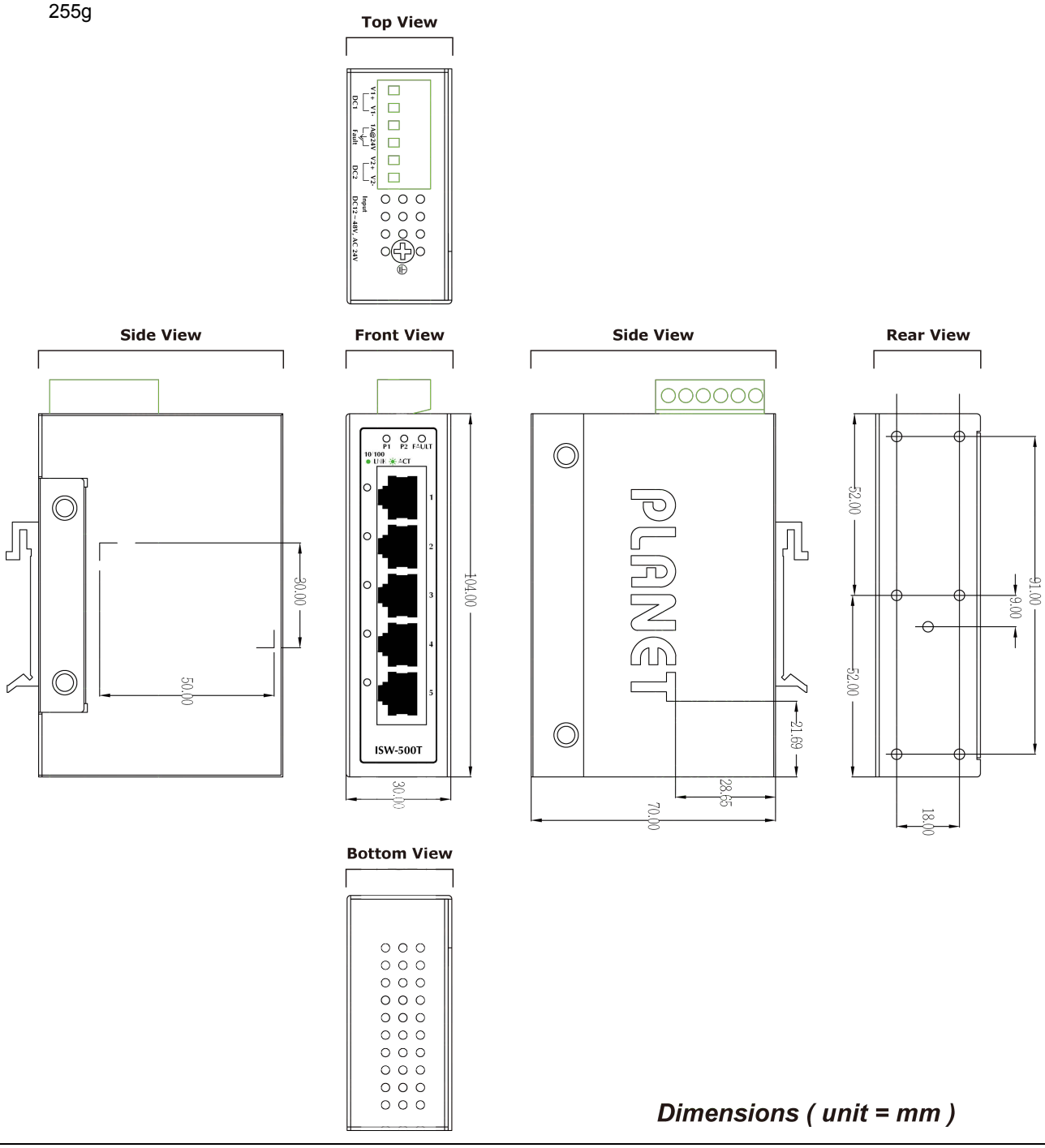
3.3 PHYSICAL SPECIFICATIONS:

Dimensions:

70 x 104 x 30 mm (W x D x H)

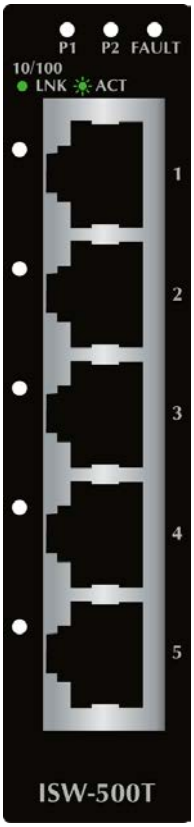
Weight:

255g

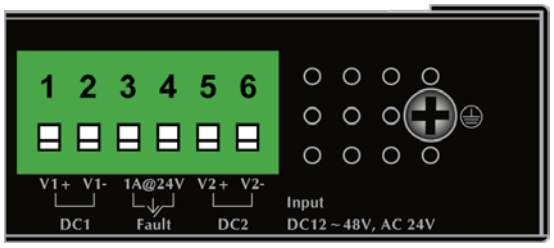


Dimensions (unit = mm)

Top View



Front View



LED Definition:

■ **System**

LED	Color	Function
DC1	**Green**	Lights to indicate DC power input 1 has power.
DC2	**Green**	Lights to indicate DC power input 2 has power.
Fault	**Red**	Lights to indicate that AC or DC power has failed.

■ **Per 10/100BASE-TX Port (Port 1 to Port 5)**

LED	Color	Function	
10/100 LNK/ACT	**Green**	**Lights**	Indicating the port is running at **10/100Mbps** speed and successfully established.
		Blinks	Indicating that the switch is actively sending or receiving data over that port.

3.4 ENVIRONMENTAL SPECIFICATIONS

Operating:

Temperature: -40 ~75 degrees C

Relative Humidity: 5% ~ 95% (non-condensing)

Storage:

Temperature: -40 ~85 degrees C

Relative Humidity: 5% ~ 95% (non-condensing)

3.5 ELECTRICAL SPECIFICATIONS

Power Requirements:

12~48V DC, redundant power with polarity reverse protection

Power Consumption:

LOADING / DC INPUT	System on without any devices attached	Ethernet Full Loading
12V	0.8W, 0.07A	1.6W, 0.134A
24V	0.9W, 0.039A	1.7W, 0.078A
36V	1W, 0.028A	1.8W, 0.052A
48V	1W, 0.023A	2W, 0.042A

3.6 REGULATORY COMPLIANCE

FCC Part 15 Class A, CE

Stability Testing:

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

3.7 RELIABILITY

MTBF > 100,000hrs @ 25 degrees C

3.8 BASIC PACKAGING

☑ The Industrial Switch	x 1
☑ User's Manual	x 1
☑ DIN-rail Kit	x 1
☑ Wall Mounting Kit	x 1
☑ RJ45 Dust Cap	x 5

3.9 PACKING DIMENSIONS

Dimensions:	205 x 144 x 46mm
Weight:	TBD
Quantity:	20pcs in one carton