Install Guide

TNDS-9000P 9-Port Gigabit PoE Switch Series

Conventions

This Install Guide is for TNDS-9000P.

Preface

Chapter 1 Introduction

Introduction to switch features and its physical description.

Chapter 2 Installation

Introduction to the installation methods and consideration.

Chapter 3 Hardware Connection

Introduction to the connection between the switch and other devices and considerations

Technical Support & Helpline

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Chapter 1 Introduction

1.1 Product Overview

This is a Gigabit Unmanaged Switch. It provides you with an ideal seamless solution of high performance, low cost, easy-to-use, and standard upgrade to boost your old network to 1000Mbps. The switch supports 10/100/1000M auto-sensing, and protects the existing network investment when you enjoy the Gigabit network. The switch is plug-and-play with no configuration required. Diagnostic LEDs which display link status and activity, allow you to quickly detect and correct problems on the network. It also applies Power over Ethernet (PoE) power supply, up to 30W output power per port, which can solve the problems resulting from wiring complexities, high cost and maintenance difficulties of Wireless LAN APs, IP Phones and IP Cameras.

1.2 Package Contents

Open the package and verify the following items carefully. If any of the listed items is damaged or missing, please contact your dealer.

- Switch*1
- Power Adapter*1
- Install Guide*1
- Cushion*4
- Magnet Fittings for Magnet Installation (including 4 magnets and 4 screws)
- Wall-mounted Fittings for Wall Installation (including 2 conduits and 2 screws)

1.3 Physical Description

Front Panel

The front panel mainly consists of RJ45 ports and LEDs, shown as Figure 1-1.

Figure 1-1 Front Panel

(1) RJ45 Ports

There are 9 10/100/1000M RJ45 ports, of which one is the Uplink port, others Downlink ports. Some of the Downlink ports are PoE-capable, details shown as Table 1-1.

TNDS-9000P PoE-capable Ports (1~8) ● IEEE 802.3af-compliant and IEEE 802.3at-compatible; ● Up to 8 IEEE 802.3af-compliant (15.4W) or 4 IEEE 802.3at-compatible (30W) PDs can be accessed simultaneously;

Table 1-1 PoE-capable RJ45 Ports

Tips: Ethernet cables (Pair 1 and 2, Pair 3 and 6) are employed for PoE power supply. You're recommended to use Cat.5 or higher UTP/STP cables. When you use Cat.5e and Cat.6 twisted cables, the PoE power supply distance is up to 150 meters.

(2) LEDs

You can check link status and activity of the switch via LEDs. Table 1-2 describes the LED status.

LED	Color	Status	Description
POWER	Green	Solid	The switch is powered on.
		Off	The switch is powered off or its power supply is improper.
PoE-MAX	Green	Solid	PoE power demands exceed the PoE power budget. PDs connected to the lower-priority PoE ports will be disconnected from power supply one by one, unless the PoE power consumption returns to normal (the PoE-MAX turns off). **Note:** Among PoE ports on the switch, power priority is determined by the port number, with lower-numbered ports having higher priority.
		Off	PoE consumption is proper.
Link/Act (RJ45 with LEDs)	Orange	Solid	Proper network connection on the corresponding RJ45 port.
		Blinking	Traffic is being transmitted on the corresponding RJ45 port.
		Off	No network connection is on the corresponding RJ45 port.
PoE (RJ45 with LEDs)	Green	Solid	PDs are connected to the corresponding ports, and powered on properly.
		Off	No PDs are connected to the corresponding ports or powered on.

Table 1-2 LED status

Note:

TNDS-9000P: Green LEDs of the RJ45 ports (1~8) are PoE LEDs.

Other green LEDs of the RJ45 ports keep OFF, with NO FUNCTION.

Back Panel

The back panel mainly consists of a grounding terminal for lightning protection and a power socket, shown as Figure 1-2,

Figure 1-2 Back Panel

(1) Kensington Security Slot

Use an anti-theft lock to attach the switch to a fixed object against theft.

(2) Grounding Terminal

Use a wire to connect the terminal to the ground for lightning protection. For details, please refer to 2.5 Connect to Protective Grounding Cable.

(3) Power Input Jack

Please plug the power adapter to this input jack to supply power for the switch.

Note: Please use the provided power supply.

Power Input	100-240V AC, 50/60Hz.
Power Output	51V DC, 2.5A

Chapter 2 Installation

2.1 Safety Precautions

To avoid any device damage and bodily injury caused by improper use, please observe the following rules.

- Keep the power off during the installation;
- Wear an ESD-preventive wrist strap, and make sure that the wrist strap has a good skin contact;
- Use only the power supply provided with the switch;
- Make sure that the supply voltage matches the specifications identified on the power adapter of the switch;
- Ensure the vent hole is well ventilated and unblocked;
- Do not open or remove the housing of the switch.
- Before cleaning the switch, power off the power supply. Do not clean it by the waterish cloth, and never use any other liquid cleaning method.
- Keep the switch away from nearest source of high voltage, such as power lines, electric lamps, grids, etc.

⚠ **Note:** There is a TN unpacking seal on one of the screws. If you want the local reseller maintain your device, the seal should be kept unbroken. Before you open the device's housing, please contact the local reseller to get permission, or you have to be responsible for the result that the device cannot be maintained because of unpermitted operation.

2.2 Site Requirements

Operating Temperature and Humidity

Requirements of temperature and humidity to the switch are shown as Table 2-1.

Environment	Temperature	Humidity
Operating	-10ºC ~ 45ºC	10%~90% RH (Non-condensing)
Storage	-40ºC ~ 70ºC	5% ~ 90% RH (Non-condensing)

Table 2-1 Temperature and Humidity Requirement

Cleanness

To avoid the effect of static electricity on the operation of the switch, please attach much importance to the followings.

- Dust the switch regularly, and keep the indoor air clean;
- Keep the switch well-grounded and ensure static electricity has been transferred.

Lightning Protection

To avoid the damage of electronic devices made by the extremely high voltage current produced when lightning occurs, please take the following lightning protection measures.

- Ensure the rack and the switch's ground terminal are well earthed;
- Make sure the power outlet has a good contact with the ground;
- Keep a reasonable cabling system to avoid induced lightning;
- Use the signal SPD (Surge Protective Device) when wiring outdoor.

Installation Site

When installing the device on a rack or a flat workbench, please note the following items.

- Make sure that the rack or workbench is sturdy enough to support the switch and well-grounded;
- Make sure that the switch has a good ventilation system. The device should be left 10cm of equipment clearance for ventilation;
- Do not place heavy objects on the switch;
- If the switches need to be used in stacked, the vertical distance between neighboring ones cannot be less than 1.5 cm.

2.3 Installation Tools

- Phillips Screwdriver
- ESD-preventive Wrist Wrap
- Network Cables (Optional)

2.4 Product Installation

Desktop Installation

Step 1: Set the bottom of the switch up on a flat and stable desktop;
Step 2: Paste four cushions in the corresponding concave places at the bottom;
Step 3: Turn over the switch and place it face up on the workbench.

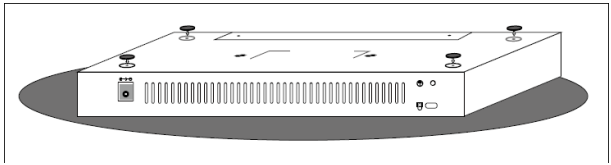

Figure 2-1 Desktop Installation

Magnet Installation

Step 1: Attract 4 magnets into the corresponding round grooves on the bottom at each corner of the switch's housing;
Step 2: Use screws to secure the magnets to the switch's housing, shown as Figure 2-2 (a);
Step 3: Press the switch (installed with magnets) in a proper way on a stable surface you select, shown as Figure 2-2 (b). When installing, be careful with your fingers.

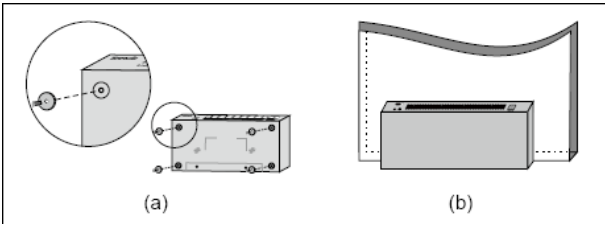

Figure 2-2 Magnet Installation

Note:

- Select the installation surface carefully. If the surface is not proper, the reliability of this installation will be influenced.
- Too high installation position or vibration might cause a fall leading to

switch damage or personal injury.

- When installation is finished, don't move the switch very often to avoid surface coating damage.
- To make it cable more easily, please place the switch bottom up when you mount it vertically and pay attention to the weight of the installed cables to avoid a fall.
- Keep magnets away from objects such as the floppy disk, magnetic card, computer or computer monitor, which are easy to be magnetized. Otherwise the device malfunctions will happen.

Wall Installation

Step 1: Punch 2 holes with a diameter of 5mm on the wall. The distance between the 2 holes is 110mm, and the line through them should keep horizontal, as illustrated in Figure 2-3;

Step 2: Install a conductor pipe inside the board hole; and flush the edge of the conductor pipe with the wall surface;

Step 3: Screw the bolts into the conductor pipe. Distance between the inside surface of the screw header and the edge of the conductor pipe should not be less than 2.5mm, to make sure that the device can be hung on the bolt tightly;

Step 4: Align two wall type holes at the bottom of the device with the screw, and hang the device on it.

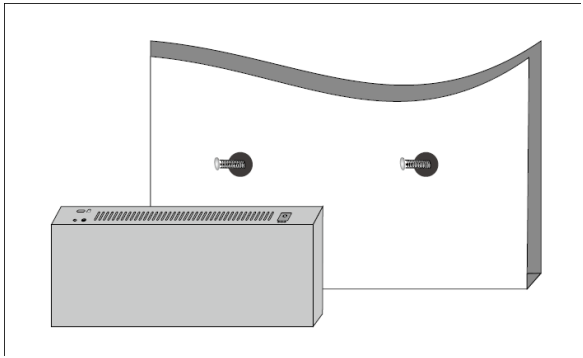

Figure 2-3 Wall Installation

2.5 Connect to Protective Grounding Cable

Proper connection of the protective grounding cable is not only for quickly releasing the overvoltage and overcurrent resulting from lightning, but also necessary for protecting your body security.

With Grounding Bar

Connect one end of the protective grounding cable to the binding post on the grounding bar and fix the screws.

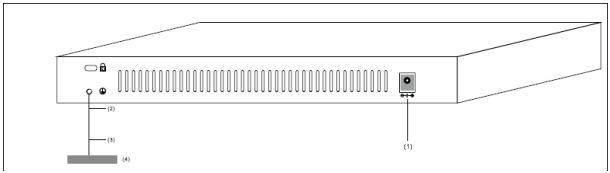

Figure 2-4 Install with grounding bar

(1) DC Power Input Jack	(2) Binding Post
(3) Protective Grounding Cable	(4) Grounding Bar

Note: The switch's grounding cable should be connected to the engineering land in the IT room. Water hoses and lightning rods are not proper for grounding.

Without Grounding Bar

1. With mud land nearby and allowed to bury grounding bar.

Bury an angle iron or steel pipe (≥0.5m) into the mud land. The protective grounding cable should be welded to the angle iron or steel pipe and the welding point should be embalmed.

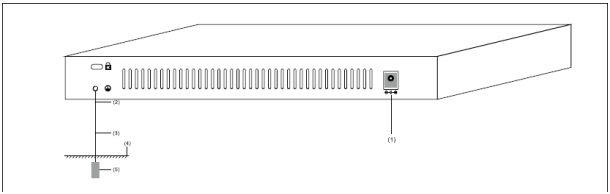

Figure 2-5 Install with a ground conductor buried

(1)DC Power Input Jack	(2) Binding Post	(3) Protective Grounding Cable
(4) Earth	(5) Angle Iron	

2. Not allowed to bury grounding bar.

If not allowed to bury the grounding bar, you can directly connect the switch to the grounding bar through the power cord. Ensure that the provided adapter you use has a 3-core and protective grounding cable, and the power cord in the switchgear room or beside the AC power supply transformer is well-grounded.

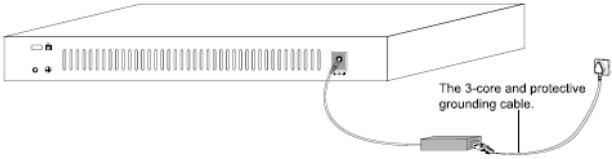

Figure 2-6 Install with the grounded power cord

Chapter 3 Hardware Connection

Connection Procedures & Check

Step 1: Use an Ethernet cable to connect one upstream network device (such as another switch or a router) to the Uplink port on the switch, shown as Figure 3-1.

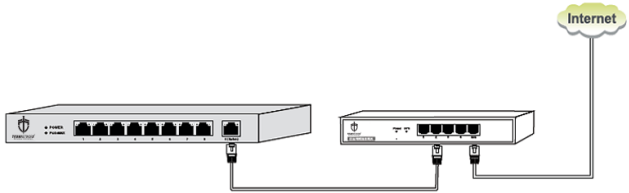

Figure 3-1 Connect an upstream network device

Step 2: Use other Ethernet cables to connect downstream network devices to the Downlink ports. PoE-capable ports can access PDs such as an AP, an IP phone,

an IP camera, shown as Figure 3-2.

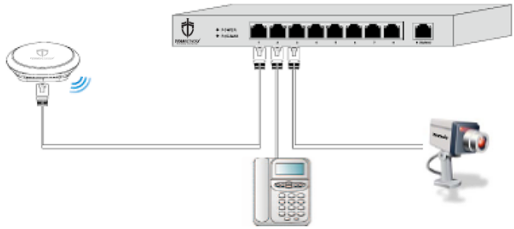

Figure 3-2 Connect standard PD devices

Note: If cables on ports are running outdoors, please connect the network signal lightning arrester.

Step 3: Use the power adapter provided in the product package to supply power for the switch, shown as Figure 3-3.

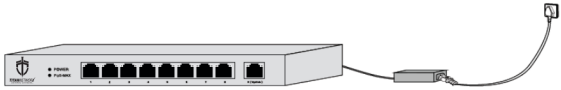

Figure 3-3 Connect to power supply

Step 4: After powered up, the switch begins auto-initialization. Check the LED indicators, and they will respond as follows:

- All the functional LEDs will flash momentarily for one second and then be off, which represents a resetting of the system.
- The POWER LED indicator is lit.

Appendix

A. Technical Specifications

Item	Specification
Protocol & Standard	IEEE 802.3i 10Base-T Ethernet IEEE 802.3u 100Base-Tx Fast Ethernet IEEE 802.3ab 1000Base-T Gigabit Ethernet IEEE 802.3x Flow Control IEEE 802.3af IEEE 802.3at
Power Supply Support	● Power of the switch: 127.5W maximum. ● Total power of the PoE power supply: 121.22W maximum (ports 1~8, output power per port: 30W maximum). ● 51VDC, 2.5A power output; plug is localized to country of sale.
LEDs	POWER LED, PoE LED, PoE-MAX LED, Link/Act LED
Network Medium	Cat.5 (≤100m) or Cat.5 higher UTP/STP cables (≤150m) (recommended)
Operating Temperature	-10°C ~ 45°C
Storage Temperature	-40°C ~ 70°C
Operating Humidity	10% ~ 90% RH non-condensing
Storage Humidity	5% ~ 90% RH non-condensing
Dimension	235mmx103mmx27mm

B. Safety and Emission Statement

CE Mark Warning

This is a Class A product. In a domestic environment, this product may cause radio interference, in which case the user may be required to take adequate measures.

NOTE: (1) The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications to this equipment. (2) To avoid unnecessary radiation interference, it is recommended to use a shielded RJ45 cable.

FCC Statement

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radiofrequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

NOTE: (1) The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications to this equipment. (2) To avoid unnecessary radiation interference, it is recommended to use a shielded RJ45 cable.