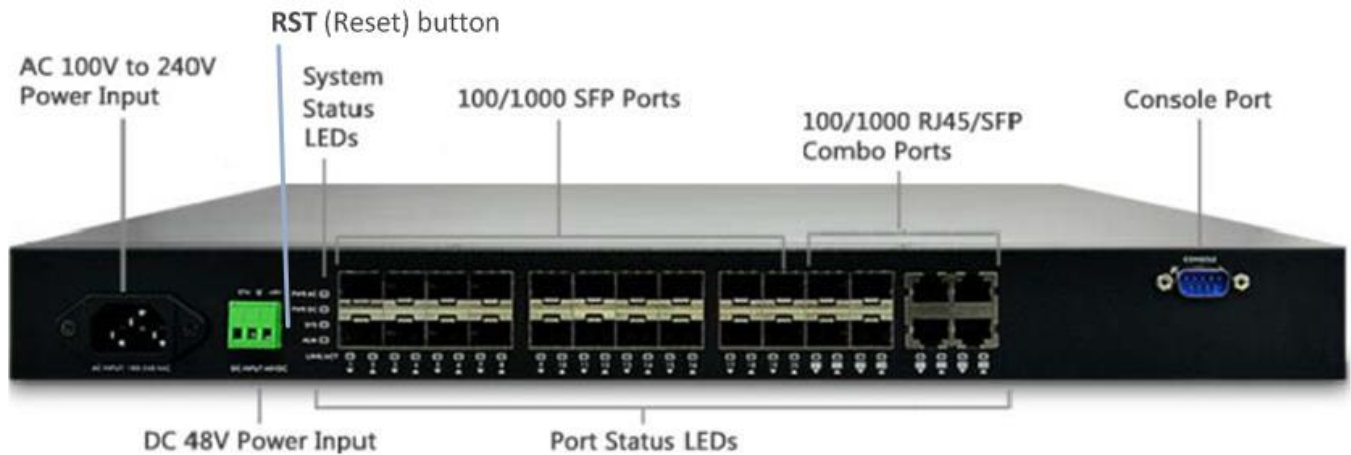




# SM24DPB

## Managed Layer 2 Gigabit Ethernet Switch

(20) 100/1000Base-X SFP Slots + (4) 100/1000Base-X SFP/RJ-45 Combo Ports



# Install Guide

33681 Rev. D

## Safety Warnings and Cautions

These products are not intended for use in life support products where failure of a product could reasonably be expected to result in death or personal injury. Anyone using this product in such an application without express written consent of an officer of Transition Networks does so at their own risk and agrees to fully indemnify Transition Networks for any damages that may result from such use or sale.



**Attention:** this product, like all electronic products, uses semiconductors that can be damaged by ESD (electrostatic discharge). Always observe appropriate precautions when handling.



**NOTE:** Emphasizes important information or calls your attention to related features or instructions.



**WARNING:** Alerts you to a potential hazard that could cause personal injury.



**CAUTION:** Alerts you to a potential hazard that could cause loss of data or damage the system or equipment.

### SM24DPB Managed Fiber Switch Install Guide - PN 33681 Rev. D

#### Record of Revisions

Rev	Date	Description of Changes
A	6/3/16	Initial release for software v6.46.
B	8/14/18	Update for FW v6.54.2925; update EMC and contact information.
C	9/17/19	Add UL and Power Connection/Disconnection info. Update power supply information. Update DC power input spec.
<b>D</b>	<b>4/9/20</b>	<b>Add MTBF and power consumption specs.</b>

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## Compliance and Safety Statements

**FCC CLASS A** : This equipment has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart J of part 15 of FCC Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency 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. You are cautioned that changes or modifications not expressly approved by the party responsible for compliance could void your authority to operate the equipment.

**CE MARK / DECLARATION OF CONFORMANCE FOR EMI AND SAFETY (EEC)** : This equipment has been tested and found to comply with the protection requirements of European Emission Standard EN55022/EN61000-3 and the Generic European Immunity Standard EN55024. SM24DPB tested and found to be in conformity with IEC 60950-1(ed.2), IEC 60950-1(ed.2);am1, IEC 60950-1(ed.2);am2. Additionally evaluated to EN 60950-1:2006/A11:2009/A1:2010/A12:2011/A2:2013; National Differences specified in the CB Test Report.

**EMC**

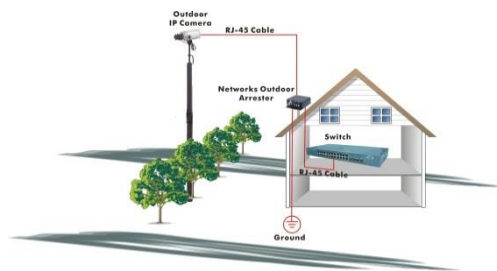
European Standard EN 300 386 V1.6.1:2012, EN55032:2012  
 EN 61000-3-2:2006/A1:2009 and /A2:2009, EN 61000-3-3:2008  
 EN 55024:2010 (IEC 61000-4-2 Edition 2.0 2008-12,  
 IEC 61000-4-3 Edition 3.2 2010-04, IEC 6100-4-4 Edition 3.0 2012-04,  
 IEC 61000-4-5 Edition 2.0 2005-11, IEC 6100-4-6 Edition 3.0 2008-10,  
 IEC 61000-4-8 Edition 2.0 2009-09, IEC 61000-4-11 Edition 2.0 2004-03 and  
 Australian Standard AS/NZ CISPR 22:2009/A1:2010 Class A



**CAUTION:** Circuit devices are sensitive to static electricity, which can damage their delicate electronics. Dry weather conditions or walking across a carpeted floor may cause you to acquire a static electrical charge.

To protect your device, always:

- Touch the metal chassis of your computer to ground the static electrical charge before you pick up the circuit device.
- Pick up the device by holding it on the left and right edges only.
- If you need using outdoor device connect to this device with cable then you need to addition an arrester on the cable between outdoor device and this device.



**Addition of an arrester between outdoor device and this switch**



**NOTE:** The switch is indoor device; if it will be used in outdoor environment or connects with some outdoor device, then it must use a lightning arrester to protect the switch.

**WARNING:**

- Self-demolition on Product is strictly prohibited. Damage caused by self-demolition will be charged for repairing fees.
- Before installation, make sure input power supply and product specifications are compatible to each other.
- To reduce the risk of electric shock. Disconnect all AC or DC power cord and RPS cables to completely remove power from the unit.
- Before importing / exporting configuration please make sure the firmware version is always the same.

After firmware upgrade, the switch will move the configuration automatically to the latest firmware version.

## Overview

The SM24DPB L2+ Managed Switch is a next-generation Fiber Switch offering full suite of L2 features including advanced L3 features such as Static Route that delivers the better cost performance and lower *total cost of ownership* in Enterprise networks or backbone via fiber or copper connections. The SM24DPB delivers 20 GbE SFP ports, 4 Combo GbE RJ45/SFP ports and DB9 Console port with built-in AC and DC dual power supplies. SM24DPB provides front access to all data and management ports, and a compact form factor that facilitates desktop, wall-mount, or rack-mount installations. The SM24DPB **is an ideal switch for fiber connectivity applications.**

## About This Guide

This manual gives specific information on how to operate and use the management functions of the switch. This manual guide is intended for use by network administrators who are responsible for operating and maintaining network equipment. It assumes a basic working knowledge of general switch functions, Internet Protocol (IP), and Simple Network Management Protocol (SNMP).

## Key Features

- L2+ Managed features provide easier manageability, robust security and QoS.
- DMS (Device Management System)
- AC/DC Dual Power Supply
- DHCP Server, Snooping, and Relay
- Supports IPv4/IPv6 dual protocol stack
- IPv4/IPv6 L3 static route
- IEEE 802.3az EEE Energy Efficient Ethernet standard for green Ethernet
- EEE power saving option
- Supports Jumbo Frames up to 9K byte
- LLDP (Link Layer Discovery Protocol)

## Benefits

- **Feature-rich Ethernet Switch for Enterprise-class:** The switch delivers advanced functionality in an L2+ managed switch including Layer 3 static route, DHCP server, IPv6 support, LLDP, etc. It also has comprehensive security features such as IP source guard, Access Control List to guard your network from unauthorized access. It helps build on the market-leading price/performance with L2+ Managed GbE fiber switch, and provides secure, reliable and easy to use functions for enterprise and SMB deployments.
- **Lower Total Cost of Ownership (TCO) with Energy-efficient Design:** It is designed to help you reduce power consumption and lower the TCO features like Energy Efficient Ethernet (IEEE 802.3az). It can be used for customers to build a green Ethernet networking environment.
- **AC/DC Dual Power Supply:** Power failover when power supplies are connected to different circuits for reduced network operating risk.

## Specifications

### Port Configuration

Total Ports	SFPs (100M/1G)	Uplinks (100M/1G)	Console
24	20	4 RJ45/SFP Combo	DB9

### Hardware Performance

Forwarding Capacity	Switching Capacity	Mac Table	Jumbo Frames
35.712 Mpps	48 Gbps	32 K	10056 Bytes

### Environmental Range

Operating Temperature	Storage Temperature	Altitude
-4° F to +140° F -20° C to +60° C	-40 to 185° F -40 to 85° C	< 10000 Feet < 3000 Meters

### Dimension, Weights, Humidity

Dimensions (WxHxD)	Weight	Operating Humidity
442 x 44 x 211 Millimeters 17.4 x 1.73 x 8.31 Inches	3.1 Kilograms 6.8 Pounds	5% to 90% non-condensing

### Voltage and Frequency

Input Voltage and Frequency	
AC Voltage	100-240 VAC
AC Frequency	50-60 Hz
DC Voltage	+24 to +72 VDC or -24 to -72 VDC

### Compliance

Safety	EMI
IEC60950, UL Listed;	FCC Class A, CE Mark

### MTBF and Power Consumption

MTBF	Max. Power Consumption
250996 hours (25°C)	24 w

## Software Features

<b>Layer 2 Switching</b>	
Spanning Tree Protocol (STP)	<ul style="list-style-type: none"> <li>Standard Spanning Tree 802.1d</li> <li>Rapid Spanning Tree (RSTP) 802.1w</li> <li>Multiple Spanning Tree (MSTP) 802.1s</li> </ul>
Trunking	Link Aggregation Control Protocol (LACP) IEEE 802.3ad <ul style="list-style-type: none"> <li>Up to 26 groups</li> <li>Up to 4 ports per group</li> </ul>
VLAN	Supports up to 4K VLANs simultaneously (out of 4096 VLAN IDs) <ul style="list-style-type: none"> <li>Port-based VLAN</li> <li>802.1Q tag-based VLAN</li> <li>MAC-based VLAN</li> <li>Management VLAN</li> <li>Private VLAN Edge (PVE)</li> <li>Q-in-Q (double tag) VLAN</li> <li>Voice VLAN</li> <li>GARP VLAN Registration Protocol (GVRP)</li> </ul>
DHCP Relay	<ul style="list-style-type: none"> <li>Relay of DHCP traffic to DHCP server in different VLAN.</li> <li>Works with DHCP Option 82</li> </ul>
IGMP v1/v2/v3 Snooping	IGMP limits bandwidth-intensive multicast traffic to only the requesters. Supports 1024 multicast groups
IGMP Querier	IGMP querier is used to support a Layer 2 multicast domain of snooping switches in the absence of a multicast router
IGMP Proxy	IGMP snooping with proxy reporting or report suppression actively filters IGMP packets in order to reduce load on the multicast router
MLD v1/v2 Snooping	Delivers IPv6 multicast packets only to the required receivers
<b>Layer 2 Switching</b>	
IPv4 Static Routing	IPv4 Unicast: Static routing
IPv6 Static Routing	IPv6 Unicast: Static routing
<b>Security</b>	
Secure Shell (SSH)	SSH secures Telnet traffic in or out of the switch, SSH v1 and v2 are supported
Secure Sockets Layer (SSL)	SSL encrypts the http traffic, allowing advanced secure access to the browser-based management GUI in the switch
IEEE 802.1X	<ul style="list-style-type: none"> <li>IEEE802.1X: RADIUS authentication, authorization and accounting, MD5 hash, guest VLAN, single/multiple host mode and single/multiple sessions</li> <li>Supports IGMP-RADIUS based 802.1X</li> <li>Dynamic VLAN assignment</li> </ul>
Layer 2 Isolation Private VLAN Edge	PVE (also known as protected ports) provides L2 isolation between clients in the same VLAN. Supports multiple uplinks
Port Security	Locks MAC addresses to ports, and limits the number of learned MAC address
IP Source Guard	Prevents illegal IP address from accessing to specific port in the switch
RADIUS/ TACACS+	Supports RADIUS and TACACS+ authentication. Switch as a client
Storm Control	Prevents traffic on a LAN from being disrupted by a broadcast, multicast, or unicast storm on a port
DHCP Snooping	Feature acts as a firewall between untrusted hosts and trusted DHCP servers
ACLs	Supports up to 512 entries. Drop or rate limitation based on: <ul style="list-style-type: none"> <li>Source and destination MAC, VLAN ID or IP address, protocol, port,</li> <li>Differentiated services code point (DSCP) / IP precedence</li> </ul>

	<ul style="list-style-type: none"> <li>• TCP/ UDP source and destination ports</li> <li>• 802.1p priority</li> <li>• Ethernet type</li> <li>• Internet Control Message Protocol (ICMP) packets</li> <li>• TCP flag</li> </ul>
<b>Quality of Service</b>	
Hardware Queue	Supports 8 hardware queues
Scheduling	<ul style="list-style-type: none"> <li>• Strict priority and weighted round-robin (WRR)</li> <li>• Queue assignment based on DSCP and class of service</li> </ul>
Classification	<ul style="list-style-type: none"> <li>• Port based</li> <li>• 802.1p VLAN priority based</li> <li>• IPv4/IPv6 precedence / DSCP based</li> <li>• Differentiated Services (DiffServ)</li> <li>• Classification and re-marking ACLs</li> </ul>
Rate Limiting	<ul style="list-style-type: none"> <li>• Ingress policer</li> <li>• Egress shaping and rate control</li> <li>• Per port</li> </ul>
<b>Management</b>	
DHCP Server	Support DHCP server to assign IP to DHCP clients
Remote Monitoring (RMON)	Embedded RMON agent supports RMON groups 1,2,3,9 (history, statistics, alarms, and events) for enhanced traffic management, monitoring and analysis
Port Mirroring	Traffic on a port can be mirrored to another port for analysis with a network analyzer or RMON probe. Up to N-1 (N is Switch's Ports) ports can be mirrored to single destination port. A single session is supported.
UPnP	The Universal Plug and Play Forum, an industry group of companies working to enable device-to-device interoperability by promoting Universal Plug and Play.
sFlow	The industry standard for monitoring high speed switched networks. It gives complete visibility into the use of networks enabling performance optimization, accounting/billing for usage, and defense against security threats
IEEE 802.1ab (LLDP)	<ul style="list-style-type: none"> <li>• Used by network devices for advertising their identities, capabilities, and neighbors on an IEEE 802ab local area network</li> <li>• Support LLDP-MED extensions</li> </ul>
Web GUI Interface	Built-in switch configuration utility for browser-based device configuration
CLI (Command Line Interface)	For users to configure/manage switches in command line modes
Dual Image	Independent primary and secondary images for backup while upgrading
SNMP	SNMP version1, 2c and 3 with support for traps, and SNMP version 3 user-based security model (USM)
Firmware Upgrade	<ul style="list-style-type: none"> <li>• Web browser upgrade (HTTP/ HTTPS) and TFTP</li> <li>• Upgrade through console port as well</li> </ul>
NTP	Network Time Protocol (NTP) is a networking protocol for clock synchronization between computer systems over packet-switched networks
Other Management	<ul style="list-style-type: none"> <li>• HTTP/HTTPS; SSH</li> <li>• DHCP Client/ DHCPv6 Client</li> <li>• Cable Diagnostics</li> <li>• Ping / Traceroute</li> <li>• Syslog</li> <li>• Telnet Client</li> <li>• IPv6 Management</li> </ul>



<b>DMS (Device Management System)</b>	
Graphical Monitoring	Topology view, Floor view, Map view
Traffic Monitoring	Displays a chart of network traffic of all the devices
Troubleshooting	Network diagnostic, protection mechanism, performance and link management

### Switch Architecture

The switch performs a wire-speed, non-blocking switching fabric. This allows wire-speed transport of multiple packets at low latency on all ports simultaneously. The switch also features full-duplex capability on all ports, which effectively doubles the bandwidth of each connection.

This switch uses store-and-forward technology to ensure maximum data integrity. With this technology, the entire packet must be received into a buffer and checked for validity before being forwarded. This prevents errors from being propagated throughout the network.

### Network Management Options

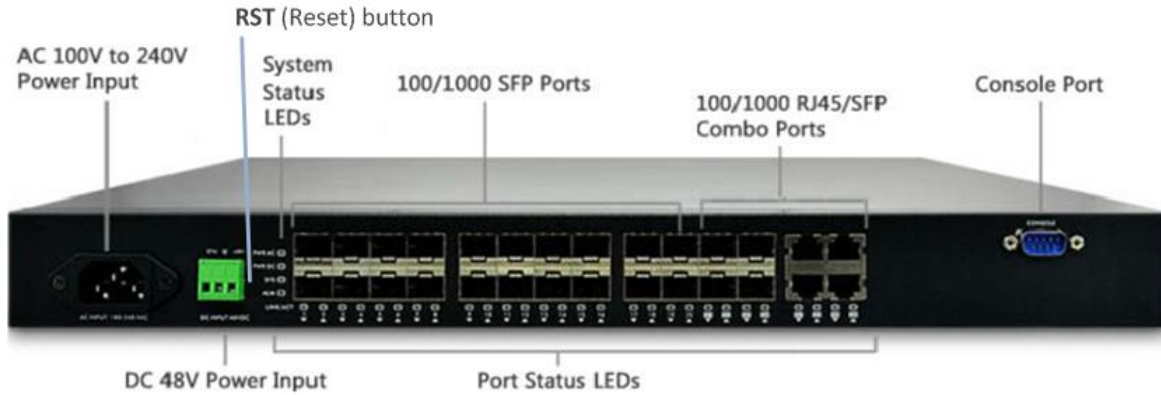
The switch can be managed over the network with a web browser or Telnet application. The switch includes a built-in network management agent that allows it to be managed in-band using SNMP or RMON (Groups 1, 2, 3, 9) protocols.

### Hardware Description

**1000BASE-T Ports:** The switch contains 10/100/1000BASE-T RJ-45 ports. All RJ-45 ports support automatic MDI/MDI-X operation, auto-negotiation and IEEE 802.3x auto-negotiation of flow control, so the optimum data rate and transmission can be selected automatically.

**SFP Transceiver Slots:** The switch supports the Small Form Factor Pluggable (SFP) transceiver slots port 1 to port 24, ports 21 to 24 are shared with RJ-45 (ports 21-24 are combo interface RJ45/SFP). In the default configuration, if an SFP transceiver (purchased separately) is installed in a slot and has a valid link on the port, the associated RJ-45 port is disabled.

## Front Panel



### Port and System Status LEDs

**LED:** P1-P24 SFP Link/Act/Speed

**Condition:** Green/ Amber

**Status:** Lights when Fiber connection with remote device is good. Blinks when any traffic is present. The light is green when linking up at 1000Mbps. The light is Amber when linking up at 100Mbps.

**LED:** P21-P24 TP Link/Act/Speed

**Condition:** Green/ Amber

**Status:** Blinks when any traffic is present. The light is green when linking up 10/1000Mbps. The light is Amber when linking up 100Mbps.

**System LED:** PWR AC

**Condition:** Green

**Status:** Lights when power on from AC source.

**System LED:** PWR DC

**Condition:** Green

**Status:** Lights when power on from DC source.

**System LED:** SYS

**Condition:** Green

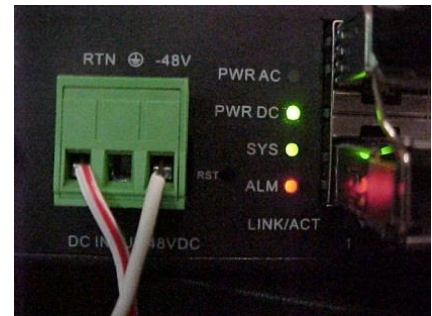
**Status:** Blinking when system is booting; lit when system is coming up.

**System LED:** ALM (Alarm)

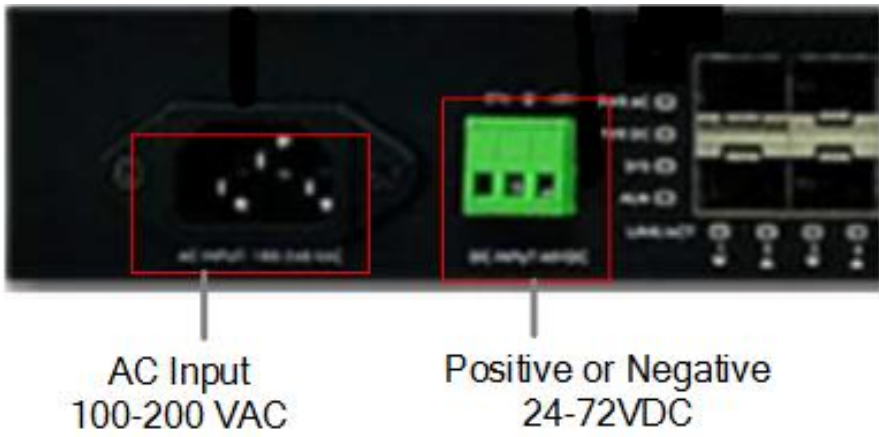
**Condition:** Red

**Status:** Always off; until any message about system error lights the **ALM** LED.

**RST (Reset) button:** push to reset the SM24DPB; requires a re-login.



**Power Supply Sockets:** There are dual power inputs on the front panel of the switch for power redundancy. The SM24DPB has a 100~240 VAC power socket for AC power Input and a positive or negative 24-72 VDC power input power input via a terminal block.



## Installation

### Selecting a Site

The Switch can be mounted in a standard 19-inch equipment rack (via Rack mount Kit). Be sure to follow the guidelines below when choosing a location. The site should:

- Be at the center of all the devices you want to link and near a power outlet.
- Be able to maintain its temperature within -20 to 60°C and its humidity within 5% to 95%, non-condensing.
- Be accessible for installing, cabling and maintaining the devices.
- Allow the status LEDs to be clearly visible.
- Allow the twisted-pair Ethernet cable to be routed away from power lines, radios, transmitters or any other electrical interference.
- Allow the SM24DPB switch to be connected to a separate grounded power outlet.

### Unpacking

Verify that you have received the packing items.

- One SM24DPB GbE Fiber Managed Switch
- Four adhesive rubber feet
- Mounting Accessory (for 19" Rack Shelf)
- One printed Quick Start Guide
- AC Power Cord\*
- RS232 DB9 to DB9 Cable

An optional DC Power Supply may be included. Contact your sales representative if any items are missing or damaged. Save the packaging for possible future use.

\* Power Cord included: To order a country-specific power cord, add an extension to the end of the SKU:  
-NA = North America, -LA = Latin America, -EU = Europe, -UK = United Kingdom, -SA = South Africa,  
-JP = Japan, -OZ = Australia, -BR = Brazil.



## Mounting

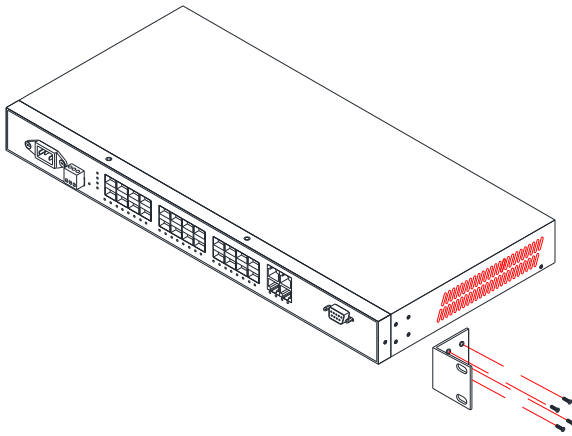
The switch can be mounted in a standard 19-inch equipment rack or on a desktop or shelf. Mounting instructions for each type is provided below.

### Rack Mounting (Optional):

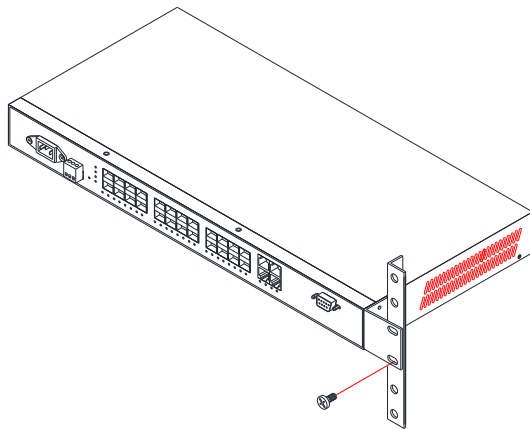
Before rack mounting the switch, please pay attention to the following factors:

- Temperature: Since the temperature within a rack assembly may be higher than the ambient room temperature, check that the rack-environment temperature is within the specified operating temperature range (-20 to 60 °C).
- Mechanical Loading: Do not place any equipment on top of a rack-mounted unit.
- Circuit Overloading: Be sure that the supply circuit to the rack assembly is not overloaded.
- Grounding: Rack-mounted equipment should be properly grounded.

**Step 1.** Attach the brackets to the device using the screws provided in the Mounting Accessory.



**Step 2.** Mount the device in the rack (via Rack-Mount kit), using four rack-mounting screws (not provided). Be sure to secure the lower rack-mounting screws first to prevent the brackets being bent by the weight of the switch.

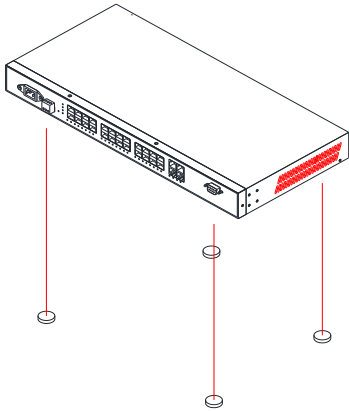


**Step 3.** If installing a single switch only, go to “[Connecting to Power](#)” on page 15.

**Step 4.** If installing multiple switches, mount them in the rack, one below the other, in any order.

## Desktop or Shelf Mounting

**Step 1.** Attach the four adhesive rubber feet to the bottom of the first switch.



**Step 2.** Set the device on a flat surface near an AC power source, making sure there are at least two inches of space on all sides for proper air flow.

**Step 3.** If installing a single switch only, go to “[Connecting to Power](#)” on page 15.

**Step 4.** If installing multiple switches, attach four adhesive feet to each one. Place each device squarely on top of the one below, in any order.

## Grounding

The SM24DP back panel provides a ground screw. After the switch is mounted and connected, the grounding screw can be used for grounding. Grounding and wire routing help limit the effects of noise due to EMI (electromagnetic interference). **Note:** Run the ground connection from the ground screw to the grounding surface before connecting devices.

Refer to [IEC 60417](#) for Graphical Symbols definitions. Refer to [IEC 50](#) [3] for terminology definitions.

See [ITU-T K.27](#) for Bonding configurations and earthing inside a telecommunications building.

See [GR-1089-CORE](#) for Electromagnetic compatibility and electrical safety—generic criteria for network telecommunications equipment.

**ATTENTION:** This case must be earth grounded. No DC input may be earth grounded. Use Isolated Power Supply.

### Installing an Optional SFP Transceiver

You can install or remove a mini-GBIC SFP from a mini-GBIC slot without having to power off the switch. Use only Manufacture mini-GBIC.

#### NOTE:

- The mini-GBIC slots are shared with the four 10/ 100/ 1000Base-T RJ-45 ports. If a mini-GBIC is installed in a slot, the associated RJ-45 port is disabled and cannot be used. SFP transceivers are not provided in the switch package.
- The mini-GBIC ports operate only at full duplex. Half duplex operation is not supported.
- Ensure the network cable is NOT connected when you install or remove a mini-GBIC.

### Fiber Optic SFP Devices

An optional Gigabit SFP transceiver can be used for a backbone connection between switches, or for connecting to a high-speed server. Each single-mode fiber port requires 9/125 micron single-mode fiber optic cable with an LC connector at both ends. Each multimode fiber optic port requires 50/125 or 62.5/125 micron multimode fiber optic cabling with an LC connector at both ends.

You may use unshielded twisted-pair (UTP) for RJ-45 connections - Category 3 or better for 10 Mbps connections, Category 5 or better for 100 Mbps connections, Category 5, 5e, or 6 for 1000 Mbps connections. For fiber optic connections, you may use 50/125 or 62.5/125 micron multimode fiber or 9/125 micron single-mode fiber.



**WARNING:** This switch uses lasers to transmit signals over fiber optic cable. The lasers are inherently eye safe in normal operation. However, user should never look directly at a transmit port when it is powered on.



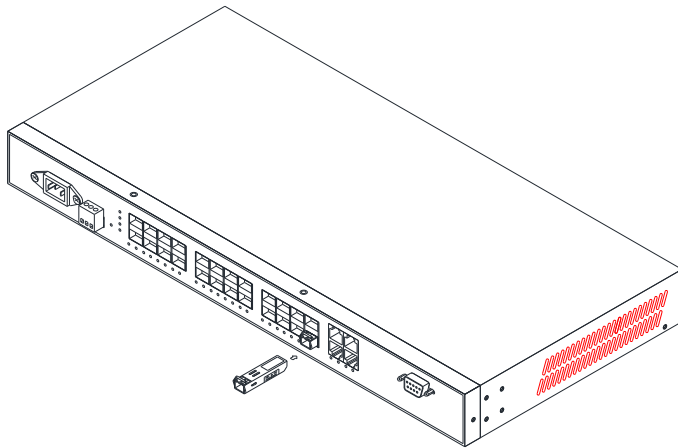
**WARNING:** When selecting a fiber SFP device, considering safety, please make sure that it can function at a temperature that is not less than the recommended maximum operational temperature of the product. You must also use an approved Laser SFP transceiver.

### Inserting an SFP Transceiver into a Slot

**Step 1.** Remove and keep the LC port's rubber plug. When not connected to a fiber cable, the rubber plug should be replaced to protect the optics.

**Step 2.** Check that the fiber terminators are clean. You can clean the cable plugs by wiping them gently with a clean tissue or cotton ball moistened with a little ethanol. Dirty fiber terminators on fiber optic cables will impair the quality of the light transmitted through the cable and lead to degraded performance on the port.

**Step 3.** Connect one end of the cable to the LC port on the switch and the other end to the LC port on the other device. Since LC connectors are keyed, the cable can be attached in only one orientation.



**Step 4.** As a connection is made, check the Link LED on the switch corresponding to the port to be sure that the connection is valid.

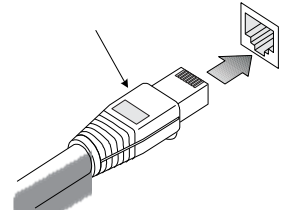
The fiber optic ports operate at 1 Gbps. The maximum length for fiber optic cable operating at Gigabit speed will depend on the fiber type.



**Ethernet Cabling**

To ensure proper operation when installing the switch into a network, make sure that the current cables are suitable for 100BASE-TX or 1000BASE-T operation. Check the following criteria against the current installation of your network:

- ◆ Cable type: Unshielded twisted pair (UTP) or shielded twisted pair (STP) cable with RJ-45 connectors; Category 5 or Category 5e with maximum length of 100 meters is recommend 100BASE-TX, and Category 5e or 6 with maximum length of 100 meters is recommend for 1000BASE-T.
- ◆ Protection from radio frequency interference emissions.
- ◆ Electrical surge suppression.
- ◆ Separation of electrical wires and data based network wiring.
- ◆ Safe connections with no damaged cables, connectors or shields.

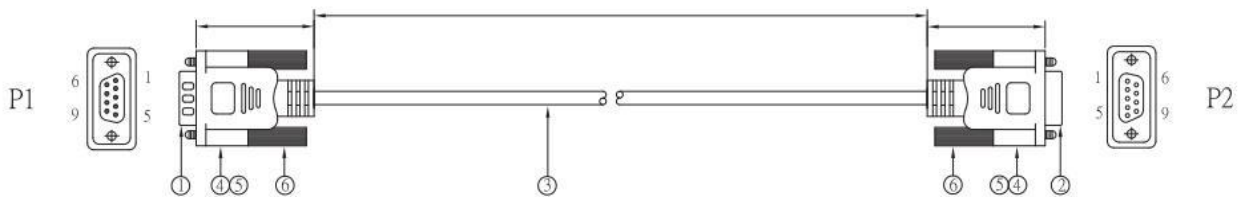


**WARNING:** SFPs and mini-GBICs are Class 1 laser devices. Avoid direct eye exposure to the beam coming from the transmit port.

**Connectivity Rules**

When adding hubs to your network, please note that because switches break up the path for connected devices into separate collision domains, you should not include the switch or connected cabling in your calculations for cascade length involving other devices.

**Serial Cable Wiring** (cross cable for console port not supported)



Switch's 8-Pin Serial Port

PC's 9-Pin DTE Port

CD	1	—————	4	DTR
DSR	6	——┐	1	CD
DTR	4	—————	6	DSR
RXD	2	—————	3	TXD
TXD	3	—————	2	RXD
GND	5	—————	5	GND
RTS	7	—————	8	CTS
CTS	8	—————	7	RTS
Reserve	9	—————	9	Reserve

## Connecting to Power

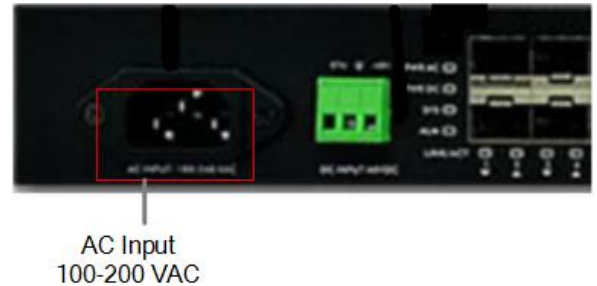
Make cable connections before connecting Power. **Power Connection Warning:** Connect the power supply to the switch first while powered off. Then connect the power supply to power, otherwise catastrophic product failure may occur. To properly connect power to the switch, follow these steps:

1. Verify that power is off to the Power source circuit that you are going to attach to the switch DC-input connector. This can be either of the two; power supplies (AC-input or DC-input) or site source DC.
1. As an added precaution, place an appropriate safety flag and lockout device at the source power circuit breaker, or place a piece of adhesive tape over the circuit breaker handle to prevent accidental power restoration while you are working on the circuit.
2. Make sure the Power LED is On.

### Connecting to AC Power Source

You can plug or remove an AC power cord into the AC socket from an AC power source.

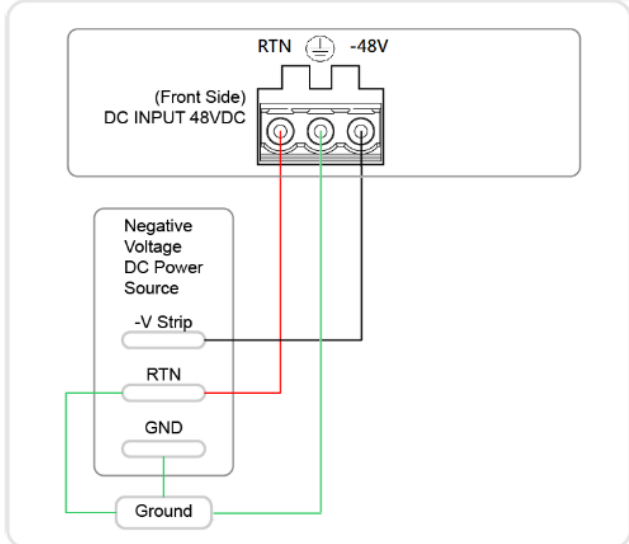
1. Insert the AC power cord directly into the AC socket on the front of the switch.
2. Plug the other end of the power cord into an AC power source.
3. Check the front-panel LEDs as the device is powered on to be sure the POWER LED is lit. If not, check that the power cable is correctly plugged in.



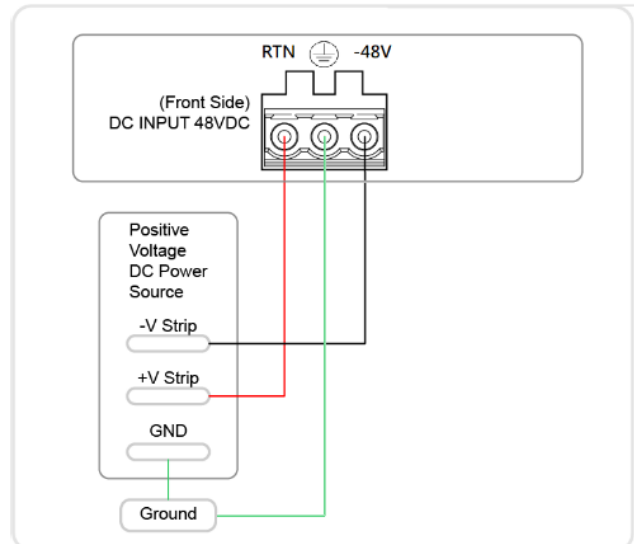
**Connecting to DC Power Source**

1. Insert the negative or positive voltage DC power source wires into the DC INPUT terminals respectively, as shown below.

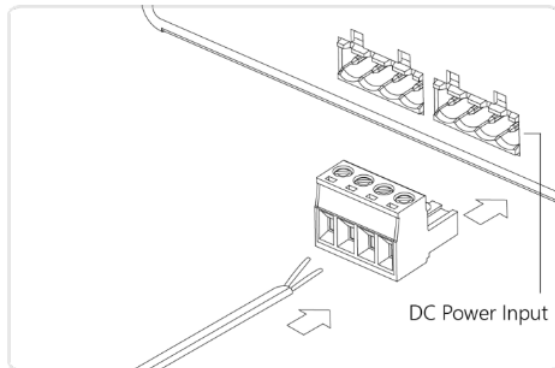
**Negative Voltage DC Power Source**



**Positive Voltage DC Power Source**



2. Use a small flat-blade screwdriver to tighten the wire-clamp screws on the front of the terminal block connector to keep the DC wires from pulling loose.
3. Insert the terminal block connector prongs into the terminal block receptor.
4. Check the SYS LED. If it is ON, the power connection is correct. See the Install guide for details.



For more DC power supply information see [Optional DC Power Supply](#) on page 21.

**Power Disconnection**

To disconnect power from the switch after a successful boot, follow these steps:

1. Turn off power to the power supply that is powering the switch.
2. Make sure the Power LED is off on both the switch and power source.
3. Disconnect the cables.

## Related Manuals

The following manuals detail related switch aspects:

- SM24DPB Quick Start Guide, 33680
- SM24DPB Web User Guide, 33682
- SM24DPB CLI Reference, 33683
- SFP manuals (model specific)
- Release Notes (version specific)

As part of the switch software, there is also online web-based help that describes the management features.

## Troubleshooting

Most problems are caused by the following situations. Check for these items first when starting your troubleshooting:

1. Connecting to devices that have a fixed full- duplex configuration. Make sure all devices connected to the SM16TAT2DPA Switch devices are configured to auto negotiate, or are configured to connect at half duplex.
2. Faulty or loose cables. Look for loose or obviously faulty connections. If they appear to be OK, make sure the connections are snug. If that does not correct the problem, try a different cable.
3. Non-standard cables. Non-standard and miswired cables may cause network collisions and other network problems, and can seriously impair network performance. Use a new correctly-wired cable. A Category 5 cable tester is a recommended tool for every 100Base-TX and 1000Base-T network installation.
4. Improper Network Topologies. It is important to make sure you have a valid network topology. If you no longer experience the problems, the new topology is probably at fault. In addition, you should make sure that your network topology contains no data path loops.
5. Port configuration. A port on your Switch may not be operating as you expect because it has been put into a “blocking” state by Spanning Tree, GVRP (automatic VLANs), or LACP (automatic trunking). (Note that the normal operation of the Spanning Tree, GVRP, and LACP features may put the port in a blocking state.) Or, the port just may have been configured as disabled through software.
6. **SYS** LED is Off. Check connections between the switch, the power cord and the wall outlet. Contact Tech Support for assistance. See [Contact Us](#) below.
7. Link LED is Off. Verify that the switch and attached device are powered on. Be sure the cable is plugged into the switch and corresponding device. If the switch is installed in a rack, check the connections to the punch-down block and patch panel. Verify that the proper cable type is used and its length does not exceed specified limits. Check the adapter on the attached device and cable connections for possible defects. Replace the defective adapter or cable if necessary.
8. Contact Transition Networks Tech Support for assistance. See [Contact Us](#) below.

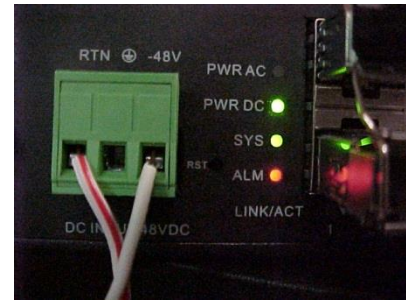
## Optional DC Power Supply

The SM24DPB provides dual power inputs on the front panel of the switch for power redundancy requirement. The SM24DPB switch has 100~240 VAC power socket for AC power Input and **positive or negative 24-72 VDC** power input via terminal block.

With the AC/DC Dual Power Supply, power failover occurs when power supplies are connected to different circuits for reduced network operating risk.



Positive or Negative  
24-72VDC



## Industrial Power Supply 25130 (Mean Well MDR-40-48)

The 25130 is an Industrial DIN rail mounted power supply for 48VDC, 39.8Watts. **Warning:** You must use an isolated power supply in order for Transition Networks to honor the warranty.

### Features

- Variable AC input range
- Protected against:
  - Overload
  - Over Voltage
- Convection air cooling
- DIN rail mountable
- UL 508 approved
- Full load burn in test
- RoHS Compliant
- MTBF 301.7Khrs

### Specifications

#### Output

Output Voltage: 48VDC

Current Rating: 0.83A

Power Rating: 39.8 Watts

Ripple & Noise Max: 200mVp-p

Voltage Range: 48~56VDC

Voltage Tolerance:  $\pm 1.0\%$

Line Regulation:  $\pm 1.0\%$

Load Regulation:  $\pm 1.0\%$

Setup, Rise Time: 500ms, 30ms

Hold Up Time: 20ms/115VAC



25130

**Input**

Voltage Range - Switch Selectable: 88~264VAC / 120~370VDC

Frequency Range: 47~63Hz

Efficiency: 88%

AC Current (Typical): 1.1A@115VAC, 0.7A@230VAC

Inrush Current (Cold): 30A@115VAC, 60A@230VAC

Leakage Current: <1mA@240VAC

**Protection**

Overload: 105~150%

Overvoltage: 57.6~64.8V

**Dimensions**

Width: 1.57" [40 mm] x Depth: 3.94" [100 mm] x Height: 3.54" [90 mm]

**Environment**

Operating Temp: -20°C to +70°C

Storage Temp: -40°C to +85°C

Humidity: 20% to 90% (non-condensing)

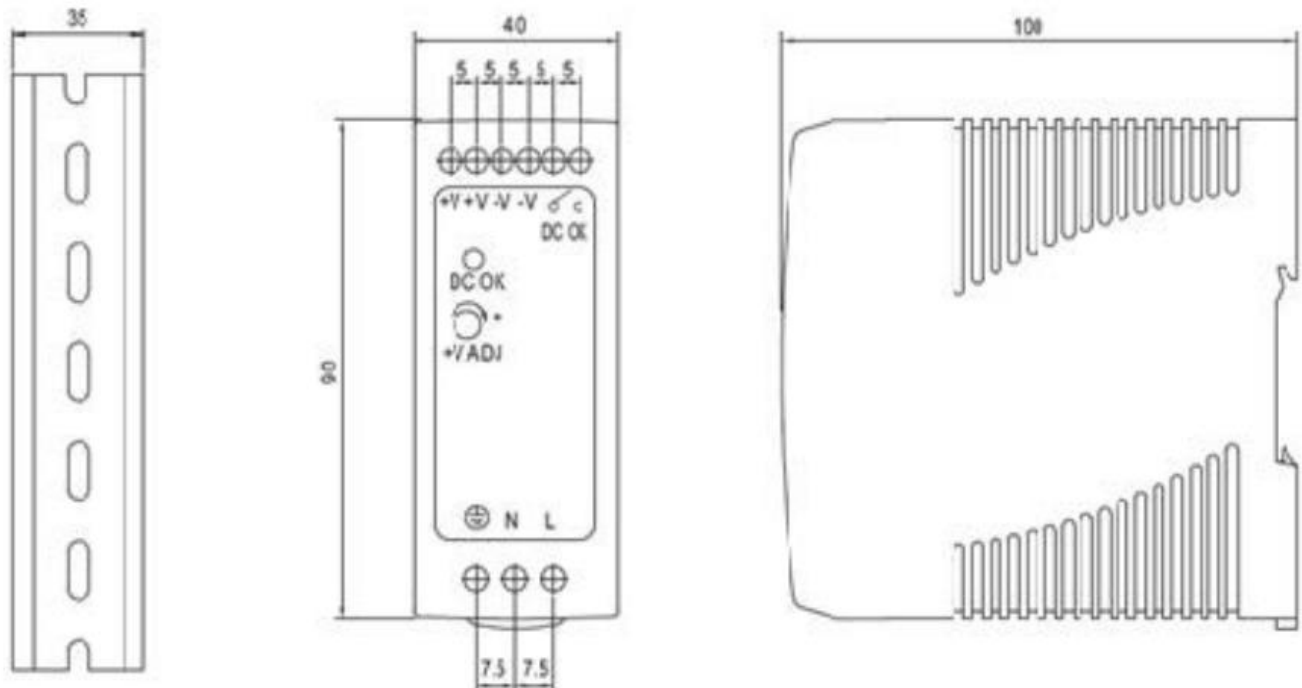
**Weight:** 0.66 lbs. [0.3 kg]

**Compliance**

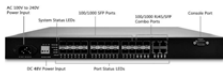
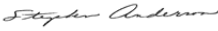
Safety: UL508, TUV EN60950-1, NEC Class 2, LPS Compliant, UL60950-1, EN55011, EN55022, CISPR22, EN61204-3 Class B, EN61000-3-2, EN61000-3-3, EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-8, EN61000-4-11, EN55024, EN61000-6-2, EN50082-2, EN61204-3 A, IEC60068-2-6 (Vibration)

**Warranty:** Lifetime

With both the AC and DC (25105) Power Supplies connected both the CLI and the web GUI show: **AC Power On 11.95V ; DC Power On 11.86V**. With just the DC supply connected the **ALM** (Alarm) LED lights in Red.



## Declaration of Conformity

<i><b>EU Declaration of Conformity</b></i>	
<b>SM24DPB</b> <small>Model/Part Number</small>	
<b><i>Transition Networks, Inc.</i></b> <b><i>10900 Red Circle Drive, Minnetonka, Minnesota 55343 U.S.A.</i></b> <small>Manufacturer's Name and Address</small>	
This declaration of conformity is issued under the sole responsibility of the manufacturer.	
	
<b>SM24DPB</b> is in conformity with the relevant Union harmonisation legislation:	
<i>Electromagnetic Compatibility (EMC) Directive 2014/30/EU: EN 55032:2012, EN 55024:2010</i>	
<i>Low-Voltage Directive (LVD) 2014/35/EU: EN 60950-1:2006</i>	
And hereby is declared compliant and carries the CE marking	
I, the undersigned, hereby declare that the equipment specified above conforms to the above Directive(s) and Standards(s).	
<i>Minnetonka, Minnesota</i> <small>Place</small>	<i>June 3, 2016</i> <small>Date</small>
 <small>Signature</small>	
<i>Stephen Anderson</i> <small>Full Name</small>	<i>Vice President of Engineering</i> <small>Position</small>

## Contact Us

**Technical Support:** Technical support is available 24-hours a day

US and Canada: 1-800-260-1312

International: 00-1-952-941-7600

**Main Office:** tel: +1.952.941.7600 | toll free: 1.800.526.9267 | fax: 952.941.2322

[sales@transition.com](mailto:sales@transition.com) | [techsupport@transition.com](mailto:techsupport@transition.com) | [customerservice@transition.com](mailto:customerservice@transition.com)

### Address

Transition Networks

10900 Red Circle Drive

Minnetonka, MN 55343, U.S.A.

**Web:** <https://www.transition.com>

## Warranty

### Limited Lifetime Warranty

Effective for Products Shipped May 1, 1999 and After. Every Transition Networks labeled product purchased after May 1, 1999, and not covered by a fixed-duration warranty will be free from defects in material and workmanship for its lifetime. This warranty covers the original user only and is not transferable.

This warranty does not cover damage from accident, acts of God, neglect, contamination, misuse or abnormal conditions of operation or handling, including over-voltage failures caused by use outside of the product's specified rating, or normal wear and tear of mechanical components.

Transition Networks will, at its option:

- Repair the defective product to functional specification at no charge
- Replace the product with an equivalent functional product
- Refund a portion of purchase price based on a depreciated value

To return a defective product for warranty coverage, contact Transition Networks' Customer Support for a return authorization number.

Send the defective product postage and insurance prepaid to the following address:

Transition Networks, Inc.  
10900 Red Circle Drive  
Minnetonka, MN 55343  
USA

Attn: RETURNS DEPT: CRA/RMA # \_\_\_\_\_

Failure to properly protect the product during shipping may void this warranty. The return authorization number must be written on the outside of the carton to ensure its acceptance. We cannot accept delivery of any equipment that is sent to us without a CRA or RMA number.

CRA's are valid for 60 days from the date of issuance. An invoice will be generated for payment on any unit(s) not returned within 60 days.

Upon completion of a demo/ evaluation test period, units must be returned or purchased within 30 days. An invoice will be generated for payment on any unit(s) not returned within 30 days after the demo/ evaluation period has expired.

The customer must pay for the non-compliant product(s) return transportation costs to Transition Networks for evaluation of said product(s) for repair or replacement. Transition Networks will pay for the shipping of the repaired or replaced in-warranty product(s) back to the customer (any and all customs charges, tariffs, or/and taxes are the customer's responsibility).

Before making any non-warranty repair, Transition Networks requires a \$200.00 charge plus actual shipping costs to and from the customer. If the repair is greater than \$200.00, an estimate is issued to the customer for authorization of repair. If no authorization is obtained, or the product is deemed not repairable, Transition Networks will retain the \$200.00 service charge and return the product to the customer not repaired. Non-warranted products that are repaired by Transition Networks for a fee will carry a 180-day limited warranty. All warranty claims are subject to the restrictions and conventions set forth by this document.

Transition Networks reserves the right to charge a \$50 fee for all testing and shipping incurred, if after testing, a return is classified as "No Problem Found."

THIS WARRANTY IS YOUR ONLY REMEDY. NO OTHER WARRANTIES, SUCH AS FITNESS FOR A PARTICULAR PURPOSE, ARE EXPRESSED OR IMPLIED. TRANSITION NETWORKS IS NOT LIABLE FOR ANY SPECIAL, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES OR LOSSES, INCLUDING LOSS OF DATA, ARISING FROM ANY CAUSE OR THEORY. AUTHORIZED RESELLERS ARE NOT AUTHORIZED TO EXTEND ANY DIFFERENT WARRANTY ON TRANSITION NETWORKS'S BEHALF.





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