

OPERATING MANUAL

PSL1008 and ES1008 Switch



Switch with Eight 10/100Base-TX Ports Plus One Fiber 100Base-FX Port

PSL1008-TX
PSL1008-MSC
PSL1008-MST
PSL1008-MTRJ
PSL1008-SSC-30
ES1008-TX
ES1008-MSC
ES1008-MST
ES1008-MTRJ
ES1008-SSC-30

CORPORATE HEADQUARTERS

5001 American Blvd. W., Suite 605
Bloomington, MN 55437
Phone: 800.441.5319
Phone: 952.831.5603
Fax: 952.831.5605

MANUFACTURING/CUSTOMER SERVICE

945 37th Avenue, NW
Rochester, MN 55901
Phone: 800.328.2275
Phone: 507.252.1951
Fax: 507.285.1952

Table of Contents

1.0	Specifications	3
2.0	Package Contents	5
3.0	Introduction	5
3.1	Hardware Features.....	6
3.2	Hardware Description	7
3.3	LED Indicators.....	7
3.4	Desktop Installation	8
3.41	Attaching Rubber Feet	8
3.42	Power On	9
4.0	Network Applications	9
4.1	DIP-Switch Setup	10
5.0	Troubleshooting	12
6.1	Before Calling for Assistance	12
5.2	Return Material Authorization (RMA) Procedure	13
5.3	Shipping and Packaging Information.....	14
6.0	Warranty	15

1.0 Specifications

OPERATIONAL CHARACTERISTICS:

MAC Address Table: 2k
Switching Mode: Store-and-forward
Memory Buffer Size: 768kb
Performance: Non-blocking wire speed
Dip switch for full and half duplex setting
Dip switch for VLAN setting on fiber models

NETWORK STANDARDS:

IEEE 802.3
IEEE 802.3u
IEEE 802.3x
IEEE 802.3 (N-way auto negotiation)

EMI/SAFETY COMPLIANCE:

FCC Class A, CE, UL cUL

NETWORK CABLE CONNECTORS

RJ45 shielded female ports
10/100Mbps: CAT5 UTP or better
Multimode: SC

POWER SUPPLY:

Input Voltage
110 to 240 VAC, 50 to 60Hz
Power Consumption
7.5 watts maximum

OPERATING ENVIRONMENT:

Ambient Temperature:
32° to 113°F (0° to 45°C)
Storage:
-40° to 158°F (-40° to 70°C)
Ambient relative humidity:
10% to 90% (non-condensing)

MECHANICAL:

Enclosure:

Rugged high-strength sheet metal suitable for stand-alone, wall or tabletop mounting

Cooling Method: Convection cooled

PHYSICAL CHARACTERISTICS:

PSL1008 Dimensions:

9.75 x 5.25 x 1.5 in (165 x 92 x 25mm)

Weight:

2 lb (.91kg)

ES1008 Dimensions:

16 x 11 x 1.75 in (406 x 279 x 37.5mm)

Weight:

3.7 lb (1.68kg)

2.0 Package Contents

Examine the shipping container for obvious damage prior to installing this product. Notify the carrier of any damage that you believe occurred during shipment. Ensure that the items listed below are included. If an item is missing, please contact your supplier.

The 1008 switch package contains the following:

- 1008 Switch
- Power Cord
- Four Rubber Feet
- User's Guide

3.0 Introduction

In our modern society, communication and sharing information is essential to our lives. Computer networks have proven to be one of the fastest methods of communication.

The 1008 series of switches are compact desktop switches that are the ideal solution for any network user. The 1008 series of switches provide high-performance switching functions with low-cost connectivity. The 1008 switches feature store-and-forward switching and will auto-learn and store source addresses with a 2K-entry MAC address table.



Figure 3-1. PSL-1008-MSC

The base model 1008 switch provides 8 10/100Base-TX RJ45 ports while the 9-port models offer an optional 100Base-FX fiber port with SC, ST or MRRJ connectors. An additional model is offered with a 30km singlemode fiber port. The switch will automatically detect the speed of connected devices to accommodate both 10 and 100Mbps. The 10Mbps bandwidth will accommodate 10Mbps workgroup switches

while simultaneously providing the 100Mbps bandwidth required for multimedia applications. All RJ45 ports support **Auto MDI/MDIX**.

Ethernet switching technology dramatically boosted the total bandwidth of a network, eliminated congestion problems inherent with the carrier sense multiple access with the collision detection (CSMA/CD) protocol and greatly reduced unnecessary transmissions.

This revolutionized networking. First, by allowing two-way, simultaneous transmissions over the same port (full-duplex), bandwidth was essentially doubled. Second, by reducing the collision domain to a single switch-port, the need for carrier sensing was eliminated. Third, by using the store-and-forward technology's approach of inspecting each packet to intercept corrupt or redundant data, switching eliminated unnecessary transmissions that slow down network traffic.

Auto-negotiation regulates the speed and duplex of each port, based on the capability of both devices. Flow-control allows transmission from a 100Mbps node to a 10Mbps node without loss of data. Auto-negotiation and flow-control may have to be disabled for some networking operations that involve legacy equipment. Disabling the auto-negotiation is accomplished by hard setting the speed or duplex mode of a port.

3.1 Hardware Features

- Conforms to IEEE 802.3, 802.3u, and 802.3x Ethernet Standards
- Auto-sensing 10/100Base-TX RJ45 port ports
- Automatic MDI/MDIX crossover for each 10/100Base-TX port
- Nine-port model includes one fixed 100Base-FX port (SC, ST or MTRJ connector)
- Dip switch for full and half duplex mode
- Dip switch for VLAN setting
- Store-and-forward switching architecture
- Automatic address learning, address migration
- 2K-entry MAC address table
- 768kb memory buffer sharing
- Performs non-blocking full wire speed

3.2 Hardware Description

Front Panel

The Front Panel of the fiber 1008 switch consists of 8 auto-sensing 10/100Mbps RJ45 ports and one 100-BaseFX fiber. The LED indicators are also located on the front panel of the switch.



Figure 3-2 PSX-1008-MSC Switch

The front panel is displayed as below.

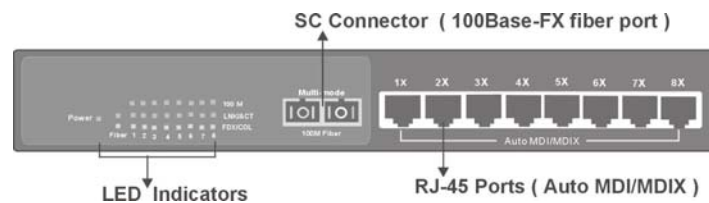


Figure 3-3. Front Panel of the PSX-1008-MSC Switch

Rear Panel

A three-pronged AC power plug is located on the rear panel of the switch. The 1008 switches work in the range 100-240V AC, 50-60Hz.

Hardware Ports

- Eight 10/100 auto MDI/MDIX 10/100Base-TX connections. MDI allows you to connect to another hub or switch and MDIX allows you to connect to a workstation or PC. Therefore, **Auto MDI/MDIX** means that you can connect to another switch or workstation without a crossover cable.
- Fiber model provides one 100Base-FX port (SC, ST or MTRJ connector)

3.3 LED Indicators

There are two LED-Indicators (LNK/ACT and FDX/COL) for each of the eight 10/100Base-TX copper ports. The following table provides the status and description of the LEDs. The LEDs provide a real-time indication of systematic operation status.

The following table describes the function of the LED indicators:

Ethernet Port			
LED	Status	Color	Description
Power	On	Green	Power On
LNK/ ACT	On	Green	The port is connecting with the device
	Blinks	Green	The port is receiving or transmitting data.
	Off	.	No device attached
FDX/ COL	On	Orange	The port is operating in full-duplex mode.
	Blinks	Orange	Collision of packets occurs in the port.
	Off		No device attached or in half-duplex mode.

Table 3-1. LED Description

3.4 Desktop Installation

Choose a surface for your switch that is clean, smooth, level, sturdy and with a power outlet nearby. Make sure there is enough clearance around the switch to allow attachment of cables, power cord and air circulation.

3.4.1 Attaching Rubber Feet

1. Make sure mounting surface on the bottom of the switch is free of grease and dust.
2. Remove adhesive backing from the rubber feet.
3. Apply the rubber feet to each corner on the bottom of the switch.



Figure 3-5. Attaching Rubber Feet to each corner on the bottom of the Switch

3.42 Power On

Connect the power cord to the AC power socket on the rear panel of the switch. Check the power indicator on the front panel to see if power is properly supplied.

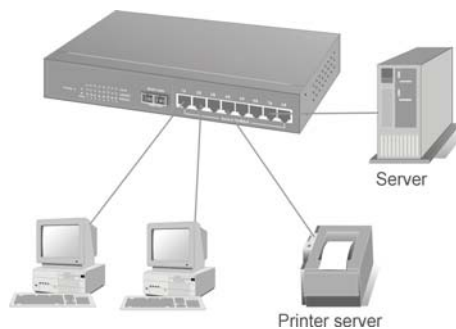
4.0 Network Applications

This section provides samples of network topology in which the 1008 switch can be used. The 1008 series of switches are generally used as a desktop, workgroup or edge segment switch.

Desktop Application

The 1008 series of switches provide the ideal solution for small workgroups. The switch can be used as a standalone switch to which personal computers, servers, and print servers are directly connected to form a small workgroup.

Figure 4.1 Desktop Application



4.1 DIP-Switch Setup

The DIP-switch is used to configure the modes for VLAN and duplex modes. DIP switch settings are described in the following table.

No.	Function	Description
1	VLAN	ON: Enable the VLAN function on each port
		OFF: Disable the VLAN function on each port
2	Fiber Port Full/Half Duplex	HDX: Half Duplex
		FDX: Full Duplex

Table 4-1

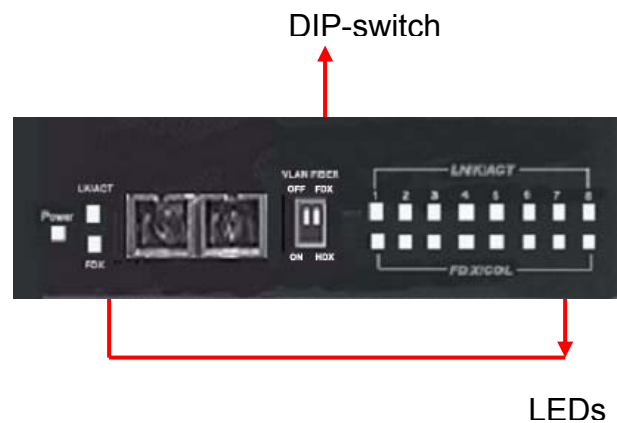
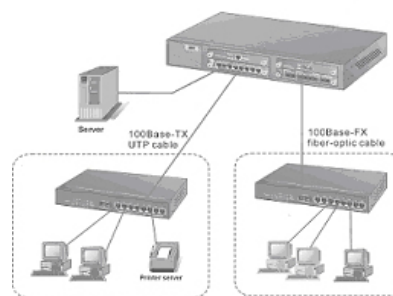


Figure 4-1 DIP Switch

Segment Application

For large networks with large data packets that are constantly processed, the 1008 switch is suitable for connection to the LAN backbone. The 1008 switch can be directly connected to PCs, workstations, and servers. The switch automatically learns node addresses, which are subsequently used to filter and forward all traffic based on the destination address. You can use any of the copper ports to connect with another switch to interconnect each of your small-switched workgroups to form a larger switched network.

Figure 4.2 Segment Applications



5.0 Troubleshooting

All Waters' switching products are designed to provide reliability and consistently high performance in all network environments. The installation of Waters' 1008 switch is a straightforward procedure (See Sections 3-4). Should problems develop during installation or operation, this section is intended to help locate, identify and correct these types of problems. Please follow the suggestions listed below prior to contacting your supplier. However, if you are unsure of the procedures described in this section or if the Waters' 1008 switch is not performing as expected, do not attempt to repair the unit; instead contact your supplier for assistance or contact Waters Network Systems' Customer Support Center at **800.328.2275** or email carolynl@watersnet.com.

6.1 Before Calling for Assistance

1. If difficulty is encountered when installing or operating the unit, refer back to the Installation Section of this manual. Also check to make sure that the various components of the network are operational and compatible.
2. Check the cables and connectors to ensure that they have been properly connected and the cables/wires have not been crimped or in some way impaired during installation. (About 90% of network downtime can be attributed to wiring and connector problems.)
3. Make sure that an AC power cord is properly attached to the 1008.
4. Be certain that each AC power cord is plugged into a functioning electrical outlet. Use the PWR LEDs to verify each unit is receiving power.
5. If the problem is isolated to a network device other than the Waters' 1008 switch, it is recommended that the problem device be replaced with a known good device. Verify whether or not the problem is corrected. If not, go to next step. If the problem is corrected, the Waters' 1008 switch and its associated cables are functioning properly.
6. If the problem continues, contact Waters Network Systems Customer Service at 800.328.2275 or email carolynl@watersnet.com for assistance.

When Calling for Assistance

Please be prepared to provide the following information.

1. A complete description of the problem, including the following:

- a. The nature and duration of the problem
 - b. Situations when the problem occurs
 - c. The components involved in the problem
 - d. Any particular application that, when used, appears to create the problem
2. An accurate list of Waters Network Systems product model(s) involved. Include the date(s) that you purchased the products from your supplier.
 3. It is useful to include other network equipment models and related hardware, including personal computers, workstations, terminals and printers; plus, the various network media types being used.
 4. A record of changes that have been made to your network configuration prior to the occurrence of the problem. Any changes to system administration procedures should all be noted in this record.

5.2 Return Material Authorization (RMA) Procedure

All returns for repair must be accompanied by a Return Material Authorization (RMA) number. To obtain an RMA number, call Waters Network Systems Customer Service at 800.328.2275 during business hours of 8:00 am to 5:00 pm (CT) or email carolynl@watersnet.com. When calling, please have the following information readily available:

- Name and phone number of your contact person
- Name of your company/institution
- Your shipping address
- Product name
- Failure symptoms, including a full description of the problem
- Waters Network Systems will carefully test and evaluate all returned products, will repair products that are under warranty at no charge, and will return the warranty-repaired units to the sender with shipping charges prepaid (see Warranty Information at the end of this manual for complete details). However, if Waters cannot duplicate the problem or condition causing the return, the unit will be returned as: **No Problem Found**.

Waters Network Systems reserves the right to charge for the testing of non-defective units under warranty. Testing and repair of product that is not under warranty will result in a customer (user) charge.

5.3 Shipping and Packaging Information

Should you need to ship the unit back to Waters Network Systems, please follow these instructions: Package the unit carefully. It is recommended that you use the original container if available. Units should be wrapped in a "bubble-wrap" plastic sheet or bag for shipping protection. (You may retain all connectors and this Installation Guide.) CAUTION: Do not pack the unit in Styrofoam "popcorn" type packing material. This material may cause electro-static shock damage to the unit. Clearly mark the Return Material Authorization (RMA) number on the outside of the shipping container. Waters Network Systems is not responsible for your return shipping charges.

Ship the package to:

Waters Network Systems
Attention: Customer Service
945 37th Avenue, NW
Rochester, MN 55901

6.0 Warranty

Waters Network Systems'

Warranty Statement

Waters Network Systems' products are warranted against defects in materials and workmanship. The warranty period for each product will be provided upon request at the time of purchase. Unless otherwise stated, the warranty period is for the useable life of the product.

In the event of a malfunction or other indication of product failure attributable directly to faulty materials and/or workmanship, Waters Network Systems will, at its option, repair or replace the defective products or components at no additional charge as set for herein. This limited warranty does not include service to repair damage resulting from accident, disaster, misuse, neglect, lightning, acts of God, tampering or product modification.

Service under the warranty may be obtained by contacting Waters Network Systems and receiving a Return Material Authorization (RMA) number from Waters Network Systems. Returned product accompanied with the issued RMA number and prepaid shipping will be repaired or replaced by Waters Network Systems. Repaired or replaced products will be returned at no cost to the original Buyer and shipped via the carrier and method of delivery chosen by Waters Network Systems.

Specific warranty by product family is as follows:

ProSwitch-Secure:	Limited Lifetime (see note)
ProSwitch-SecureAir+:	Limited Lifetime
ProSwitch-Lite:	3 Years from date of manufacture (see note)
ProSwitch-Xpress:	Limited Lifetime
ProSwitch-PSX	Limited Lifetime
ProSwitch-Xtreme:	Limited Lifetime (see note)
ProSwitch-FlexPort:	Limited Lifetime
ProSwitch-FixPort:	Limited Lifetime
ProSwitch-CS and CSX:	3 Years from date of manufacture (see note)
ProMedia Converters	3 Years from date of manufacture (see note)

Note: Warranty period for any and all external power supplies is one (1) year from date of purchase.

EXCEPT FOR THE EXPRESS WARRANTY SET FORTH ABOVE, *WATERS NETWORK SYSTEMS* GRANTS NO OTHER WARRANTIES, EXPRESSED OR IMPLIED, BY STATUTE OR OTHERWISE, REGARDING THE PRODUCTS, THEIR FITNESS FOR ANY PURPOSE, THEIR QUALITY, THEIR MERCHANTABILITY, OR OTHERWISE.

WATERS NETWORK SYSTEMS' LIABILITY UNDER THE WARRANTY SHALL BE LIMITED TO PRODUCT REPAIR, OR REPLACEMENT OF THE BUYER'S PURCHASE PRICE. IN NO EVENT SHALL *WATERS NETWORK SYSTEMS* BE LIABLE FOR THE COST OF PROCUREMENT OF SUBSTITUTE GOODS BY THE CUSTOMER OR FOR ANY CONSEQUENTIAL OR INCIDENTAL DAMAGES FOR BREACH OR WARRANTY.