

# Quick Start Guide

## Elinx ESW500 Series

Managed Din Rail Ethernet Switch



## ESW500 Series

Documentation Number: ESW500series-1012qsg



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## Overview

B&B Electronics Elinx family of Managed Industrial Din Rail mount Ethernet switches have been designed to meet light Industrial and commercial communication requirements.

The ESW500 Managed Series offers a variety of Industrial models. The switch configurations range from 8 ports to 16 ports with all RJ45 copper to RJ45 copper with multi mode, single mode, and or SFP gigabit ports.

Two ports can be used for network redundancy by implementing our RingOn technology. RingOn has been developed to provide a rapid recovery system for Industrial networks. If any part of the ring disconnects the network communications will automatically be restored by RingOn technology.

All RJ45 copper ports support auto-negotiation, 10/100Mbps data rate, full/half duplex, flow control and auto MDI/MDIX. The Elinx switches provide advanced management functions such as: RingOn™, VLAN, Trunking, QoS (Quality of Service), IGMP Snooping, Port Rate Control, Port Mirroring, Static Mac Address Forwarding Table, SNMP (Simple Network Management Protocol), Diagnosis, Email/Relay fault warning and field Firmware Update.

The ESW500 Series will support IEEE 802.3 (10Base-T), IEEE 802.3u (100BaseTX) and (100BaseFX), 802.3ab 1000Base(X), IEEE 802.3z for 1000BaseSX/LX/LHX/ZX, 802.3x for flow control, full and half duplex, MDI/MDIX auto-sensing.

The operating temperature range for standard models are -10°C to 60°C with wide temperature models supporting -40°C to 75°C. The ambient relative humidity rating is 5 to 95% (Non-condensing).

## **Features**

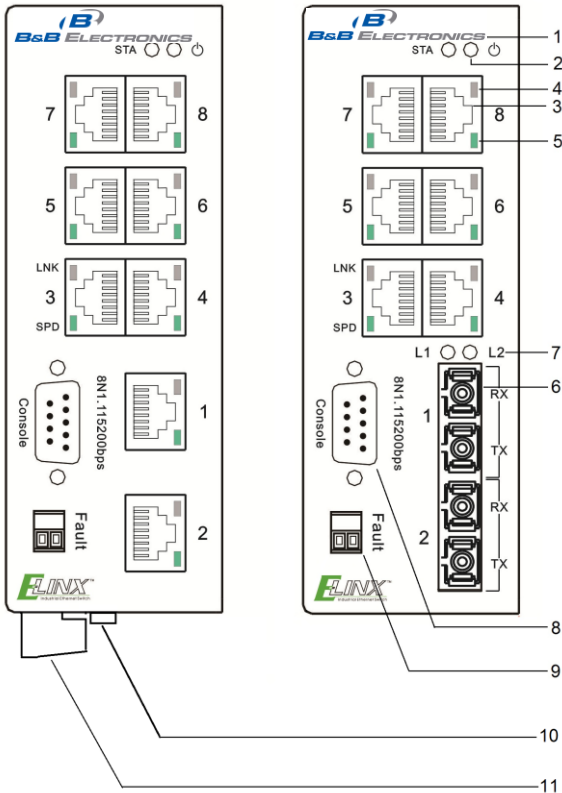
- ✓ Light Industrial and Commercial 61000-6-1 specifications
- ✓ -10 to 60°C or -40 to 75°C (-T models) temperature rating
- ✓ Supports IEEE 802.3 10Base-T, 802.3u 100Base-TX  
IEEE 802.3z for 1000BaseSX/LX/LHX/ZX
- ✓ RJ-45 port supports auto MDI/MDI-X function
- ✓ SC Single mode and Multi mode fiber connectors
- ✓ Gigabit options with copper and SFP combo ports
- ✓ Web Browser Management and Configuration
- ✓ RingOn redundant rapid recovery system
- ✓ Rapid Spanning Tree Protocol recover system
- ✓ IGMP with Query mode for multimedia application
- ✓ Port based VLAN / 802.1 Q Tag VLAN
- ✓ Relay alarm output for system events
- ✓ Port mirroring for diagnostics
- ✓ 256K bytes packet buffer
- ✓ 8k MAC address table
- ✓ 12 to 36 VDC power input (All Models)
- ✓ 10 to 24 VAC (ESW508, ESW516 Models)
- ✓ Din Rail and Panel Mount
- ✓ 100% burn in testing
- ✓ 5 year warranty

## **Package Check List**

- B&B Managed Switch
- Din rail and panel mounting
- Serial cable for console port
- Installation Guide
- CD-with User's Manual

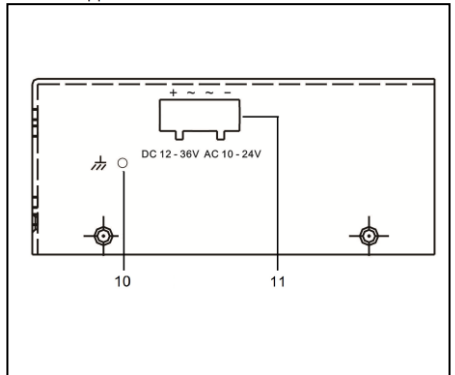


# Front Panel – ESW508 Series

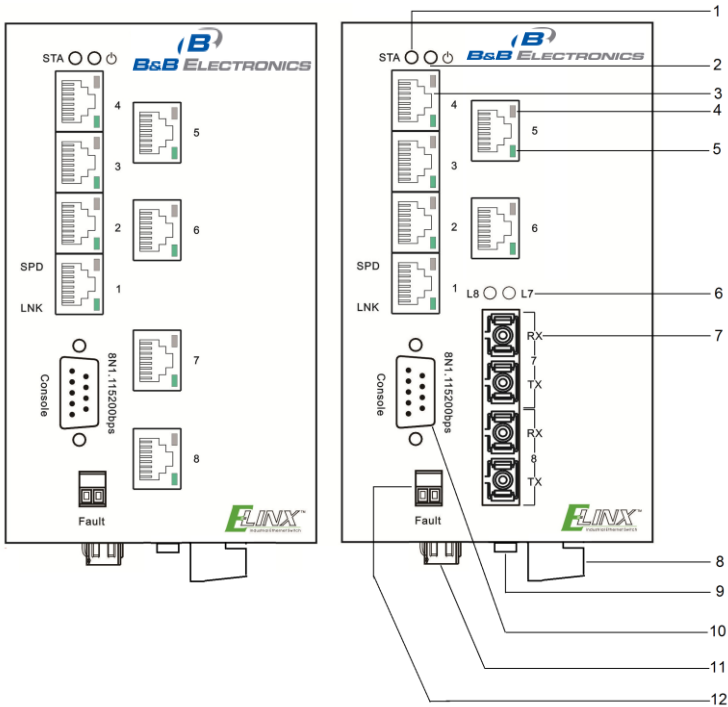


## Bottom View

1. System Ready
2. Redundant Power LED
3. 10/100BaseT(X) RJ45 Ports
4. Link LED
5. Speed LED
6. 100BaseFX, SC Fiber Port
7. Fiber Link, Activity LED
8. Console Port
9. Fault Relay
10. Ground Screw
11. Input Power Terminal Block

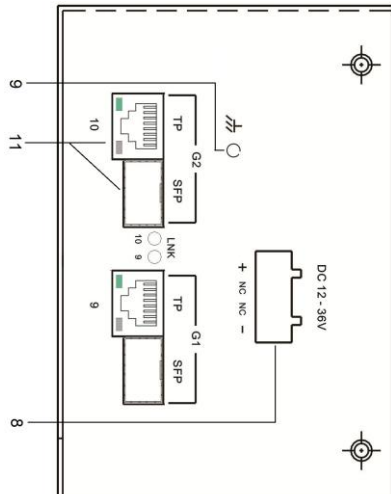


# Front Panel - ESWG510 Series

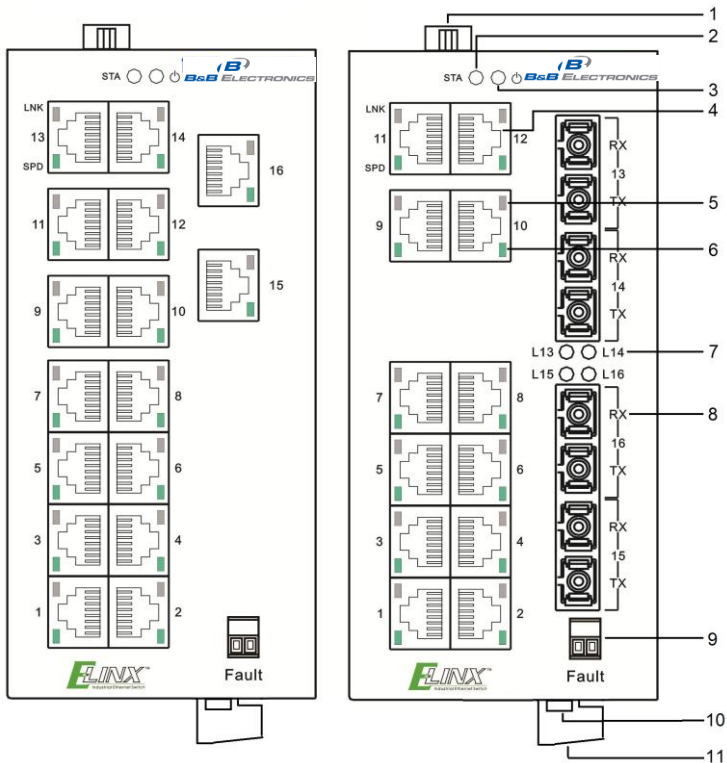


## Bottom View

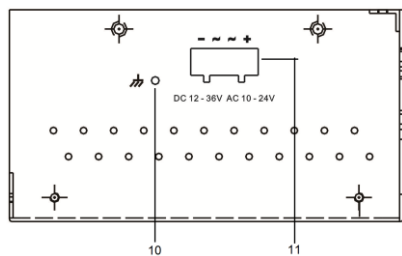
1. System Ready
2. Power LED
3. 10/100BaseT(X) RJ45 Ports
4. Speed LED
5. Link LED
6. Fiber Link, Activity LED
7. 100BaseFX, SC Fiber Port
8. Input Power Terminal Block
9. Ground Screw
10. Console Port
11. Combo RJ45 or SFP Port
12. Fault Relay



# Front Panel – ESW516 Series



Bottom View

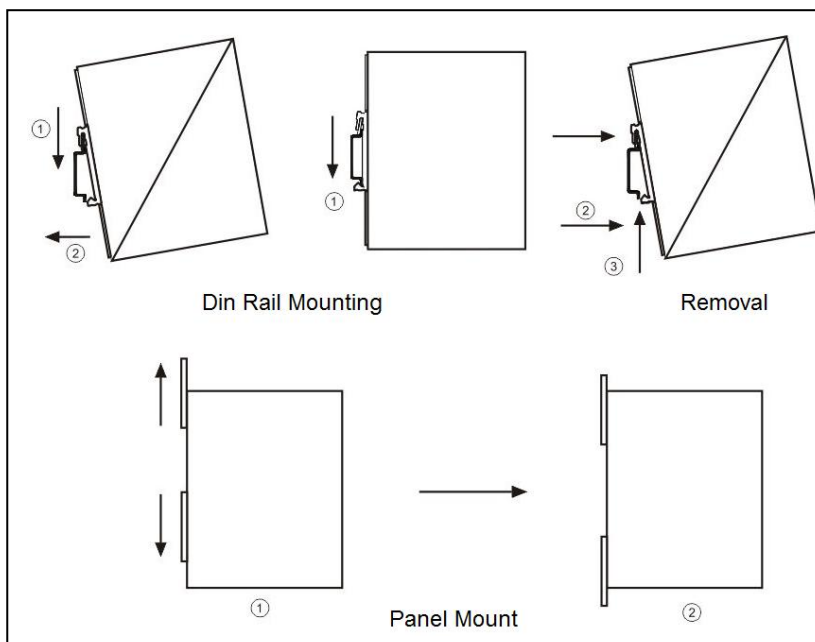


1. Console Port
2. System Ready
3. Power LED
4. 10/100BaseT(X) RJ45 Ports
5. Link LED
6. Speed LED
7. Fiber Link, Activity LED
8. 100BaseFX, SC Fiber Port
9. Fault Relay
10. Ground Screw
11. Input Power Terminal Block

## **LED Description**

<b>LED</b>	<b>Status</b>	<b>Description</b>
PWR	Green	Power Applied
	Off	No power
STA	Green	System Ready
	Off	System down
10/100 Copper SPD LED	Green	100Mbps
	Off	10Mbps
10/100 Copper LNK LED	Green	Link
	Blinking	Activity
	Off	Not connected to network
Fiber LED	Green	Link
	Blinking	Activity
	Off	Not connected to network
Combo Port 10/100/1000 Copper SPD LED	Green	1000Mbps
	Off	10/100Mbps
Combo Port 10/100/1000 Copper LNK LED	Green	Link
	Blinking	Activity
	Off	Not connected to network
SFP Port LED	Green	1000Mbps
	Blinking	Activity
	Off	Not connected to network

## Mounting Options



## Initial Setup

### Getting Started

The Managed Ethernet switch can be accessed, configured and managed via a Web server using a web browser. Before this operation can be implemented it may be necessary to configure the switch's IP address via HyperTerminal or to change the IP address of the connected PC.

### Changing the IP address of the Computer

This step is required when the IP address of the computer is not compatible with the 192.168.118.110 default IP address of the Managed switch.

- (1) Begin by selecting Start>Control Panel>Network Connection>Local Area Connection>Properties>Internet Protocol (TCP/IP). Next change the IP address of your computer to insure that it is in the same LAN as the Managed switch.

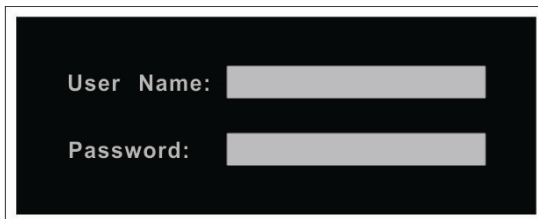
- (2) The default IP address of the Managed Ethernet switch is:  
192.168.118.100. Set your PC's IP address to 192.168.118.X (X is any value from 2 to 254 except 100), Subnet Mask: 255.255.255.0, and Gateway: 192.168.118.1
- (3) Open the web browser and enter the default IP address:  
192.168.118.100 in the address bar. (The default user name and password is “admin”)

## **Console Mode**

The IP address of managed switch can be configured to conform to the local network using Console mode. HyperTerminal terminal can be used to connect and change the settings using the supplied serial cable.

- (1) Connect the PC's RS232 serial Port to the Console port on the switch. If the computer does not have a serial port a USB to RS232 converter can be used. (B&B Electronics model 232USB9M)
- (2) To open HyperTerminal:  
Select Start>Program>Accessories>Communication, and HyperTerminal.
- (3) Create a new connection and proceed to COM Properties. Enter the parameters shown below.
  - Baud rate: 115200
  - Data bits: 8
  - Parity: none
  - Stop bits: 1
  - Flow control: none

### Default User Name and Password



Note:

The default username and password are "admin".

## Console Menu

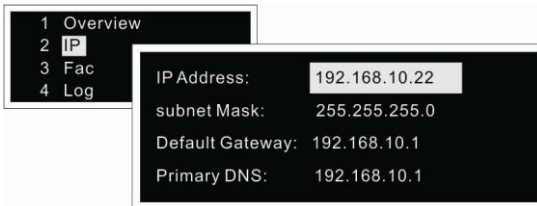
The console menu includes: Overview, IP Settings, Factory Default and Logout. Move the arrow key up or down to select different items. Press the selected function to "Enter" view configuration options.



## IP address Configuration

The IP Setting options offer two methods of network configuration, Static and DHCP.

- (1) Obtain an IP address automatically (DHCP): Arrow to this option and select "Enter". The switch will send out a DHCP request and receive an IP address automatically by DHCP server.
- (2) Fixed IP: This option will allow a static IP address, subnet mask, default gateway, primary DNS to be manually entered.

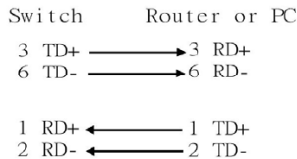


# Ports

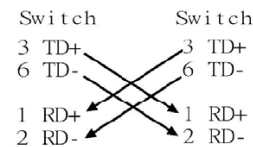
## RJ45

The RJ45 copper ports support auto MDI/MDIX operation. This feature allows network connections to computers, servers, or other switches using straight-through or crossover cables (See Figure below). Straight-through cable connections: pins 1, 2, 3 and 6, at one end of the cable, are connected straight-through to pins 1, 2, 3 and 6 at the other end of the cable. The table below shows the 10BASE-T/100BASE-TX MDI and MDI-X port pin outs.

Pin	MDI-X Signal Name	MDI Signal Name
1	Receive Data plus (RD+)	Transmit Data plus (TD+)
2	Receive Data minus (RD-)	Transmit Data minus (TD-)
3	Transmit Data plus (TD+)	Receive Data plus (RD+)
6	Transmit Data minus (TD-)	Receive Data minus (RD-)

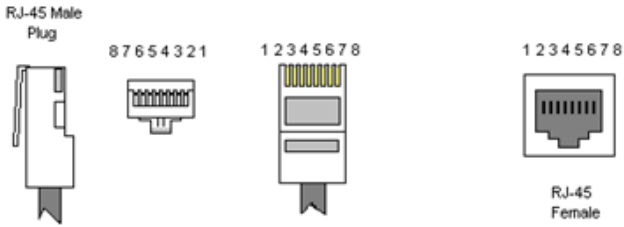


Straight Through Cable Schematic



Cross Over Cable Schematic





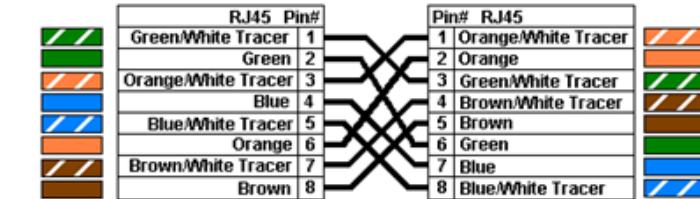
Color Standard  
EIA/TIA T568A

Ethernet Patch Cable



Color Standard  
EIA/TIA T568A

Ethernet Crossover Cable

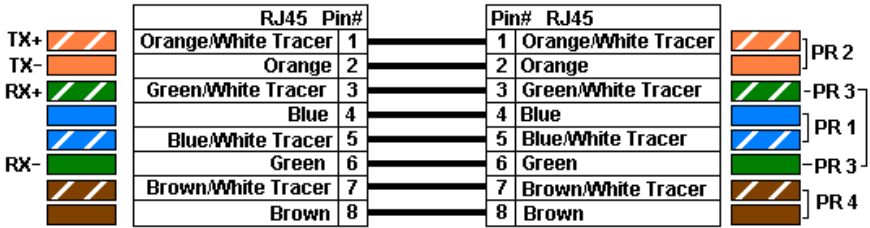


"A" is earlier

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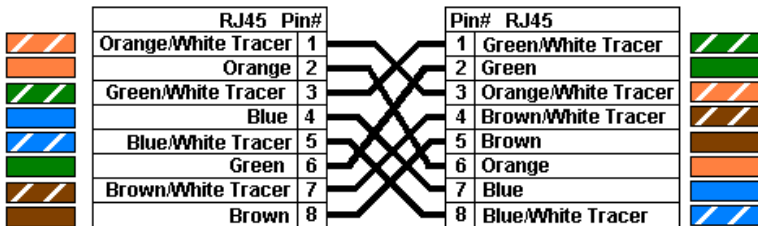
**Color Standard  
EIA/TIA T568B**

**Ethernet Patch Cable**



**Color Standard  
EIA/TIA T568B**

**Ethernet Crossover Cable**



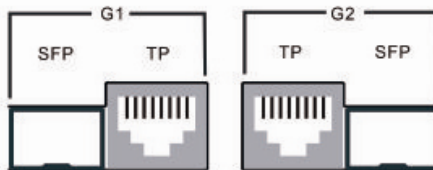
"B" is most recent

Common Ethernet Crossover Cables may only cross connect the Orange & Green pairs

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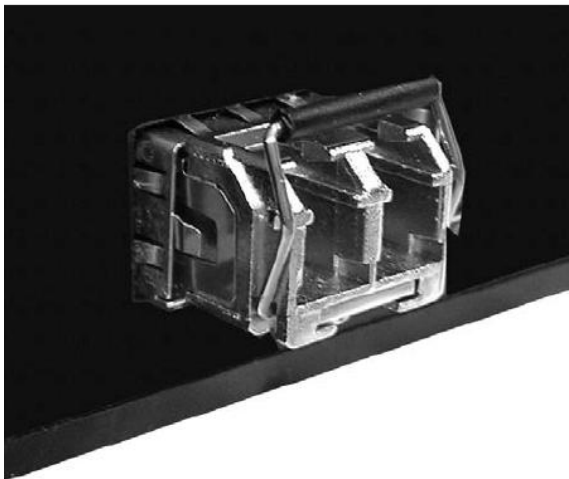
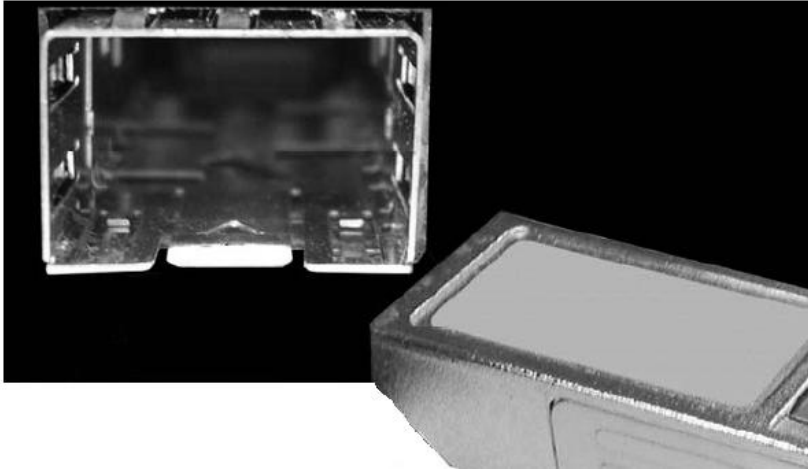
## Gigabit Copper/SFP (mini-GBIC) COMBO ports

The ESW500 series can be ordered with up to two auto-detect Gigabit combo copper/SFP combo ports. The Gigabit Copper (10/100/1000Mbps) ports use Category 5e or above UTP/STP cable for connection. The SFP slots can be used to connect the network segment with single or multi-mode fiber. For installation, the module needs to be adjusted so as to be aligned correctly and then moved into the SFP slot until a click is heard. With the SFP module (fiber optic connection), the switch will be able to transmit speeds up to 1000 Mbps. Fiber optic communications will prevent harsh environment interfaces from being introduced into the network and will extend transmission distance.

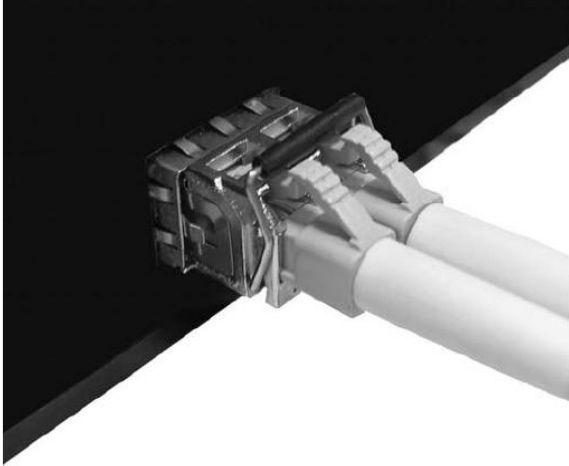


## SFP Installation and Connection

The SFP module is terminated with LC connectors. For installation, the module needs to be adjusted so as to be aligned correctly and then moved into the SFP slot until a click is heard.

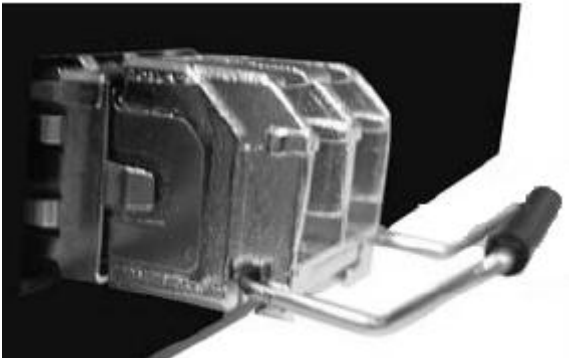


SFP Module Inserted



LC Fiber Cable Connection

To remove SFP modules lower removal bar and firmly pull transceiver out.



## ***Cabling***

Use unshielded twisted-pair (UTP) or shielded twisted-pair (STP) cable.

10Mbps: Category 3, 4, 5 or great cable

100Mbps: Category 5 or great cable

1000Mbps: Category 5e or great cable

Maximum cable length: 100 meters (328ft.)

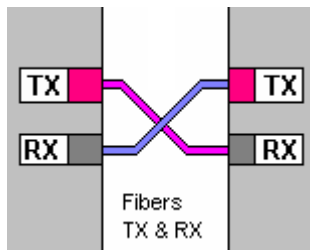
## 100Base FX SC Fiber

The use of fiber optics has become prevalent in Industrial Ethernet network communication systems. Extending distance, high data rate capabilities, noise rejection and electrical isolation are just a few of the important characteristics that make fiber optic technology ideal for use in industrial applications.

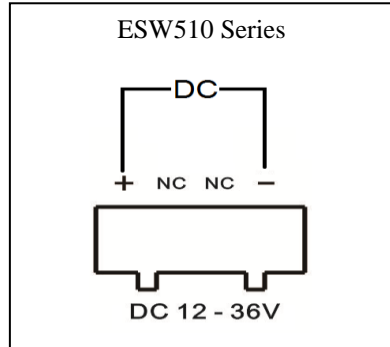
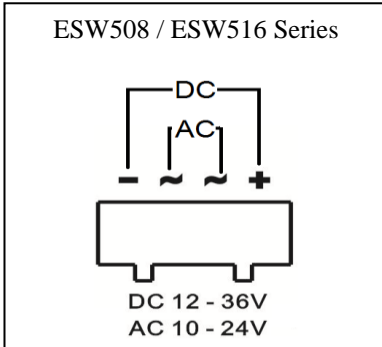
Each fiber port has a TX (transmit) and RX (receive) connection fixed at 100Mbps speed. The fiber ports will support multi mode or single mode fiber dependent on the model number ordered.



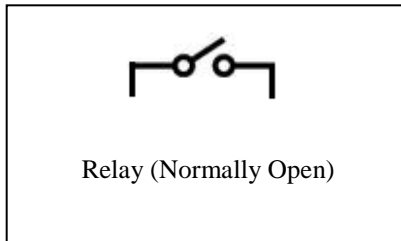
### *Fiber connection illustration*



## DC / AC Power Connections



## Fault Relay



## Default Settings

### Console Port (DB9 Male)

- Serial baud rate: 115200
- Data Bits: 8
- Parity: NONE
- Stop bits: 1
- Flow Control: NONE

### Serial Cable Pin out

PC Serial Port DB 9	Console Port DB9
5	1
3	3
2	4

## Network Settings

- IP address: 192.168.118.100
- Subnet Mask: 255.255.255.0
- Gateway: 192.168.118.1

## Default Security

- User Name: admin
- Password: admin

## VLAN

- All Ports are members of VLAN 1 (Management VLAN)