



ROCKET *LINX* ES8108

ES8108/ES8108F/ES8108-XT/ES8108F-XT

QUICK INSTALLATION GUIDE

2000578 Rev B | Release Date - August 2014

INTRODUCTION

The RocketLinx ES8108 series of industrial Ethernet switches include the following models:

- ES8108 with eight 10/100BASE-TX ports
- ES8108F with six 10/100BASE-TX and two 100BASE-FX (Single-Mode or Multi-Mode fiber) ports
- ES8108-XT with eight 10/100BASE-TX ports and an extended temperature range
- ES8108F-XT with six 10/100BASE-TX, two 100BASE-FX (Single-Mode or Multi-Mode fiber) ports and an extended temperature range

The different ES8108 models are simply referred to as the ES8108 unless there is model-specific information.

Refer to the Control web site for specification information.

ES8108-XT/ES8108F-XT IN CID2 ENVIRONMENTS

The ES8108-XT and ES8108F-XT are open-type and are to be installed in an enclosure suitable for the environment and only accessible with a tool. The ES8108-XT/ES8108F-XT is suitable for use in Class I, Division 2, Groups A, B, C, and D or non-hazardous locations only.

WARNING - EXPLOSION HAZARD – *Substitution of any components in the ES8108-XT or ES8108F-XT may impair suitability for Class I, Division 2.*

WIRING THE POWER INPUTS

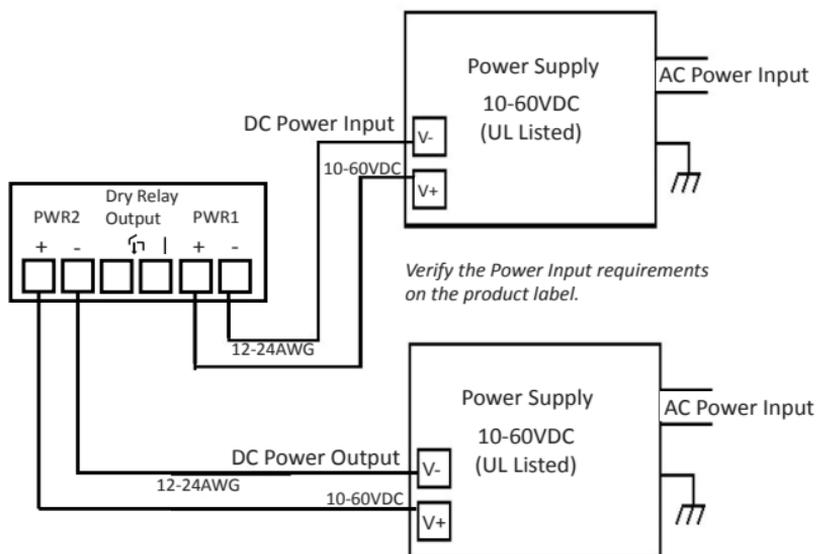
The ES8108 provides redundant power, reverse polarity protection and accepts a positive or negative power source. If using redundant power supplies, they must be in the same mode.

Use this procedure to wire the power:

1. Insert the positive and negative wires into the + and - contacts on the PW1 or PW2 on the terminal block connector.
2. Tighten the wire-clamp screws to prevent the wires from being loosened.

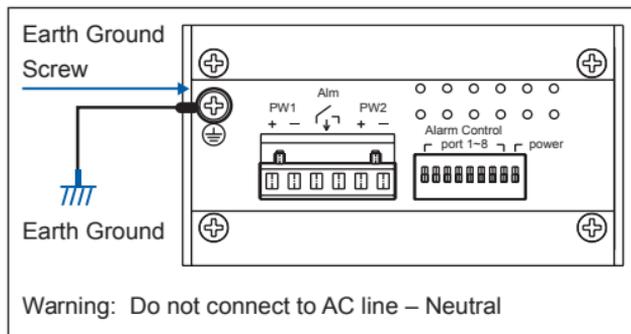
Note: Power should be disconnected from the power supply before connecting it to the switch. Otherwise, your screwdriver blade can inadvertently short your terminal connections to the grounded enclosure.

WARNING - EXPLOSION HAZARD – Do not disconnect the ES8108-XT or ES8108F-XT unless the power has been removed or the area is known to be non-hazardous.



GROUNDING THE ES8108

There is an earth ground screw on the bottom of the ES8108. Connect the earth ground screw of the switch to a grounding surface to ensure safety and prevent noise.

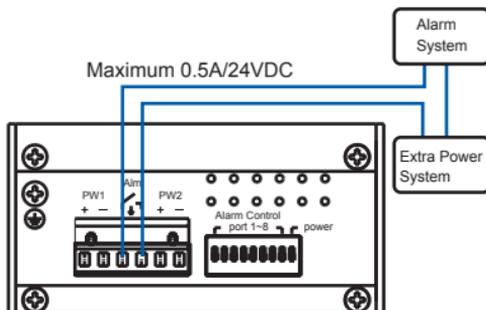


WIRING THE ALARM RELAY OUTPUT

The ES8108 has a built-in alarm-relay for port link and power events notifications. The relay contacts are normally open and remain open when there is no failure event. The relay contacts close when there is a failure event to notify.

The failure events are selectable and enabled using the DIP switch on the ES8108. The relay contacts of the ES8108 are rated for a maximum of 0.5A at 24VDC.

1. Insert positive and negative wires into V+ and V-.
2. Tighten the wire-clamp screws to prevent the wires from coming loose.



WARNING - Exposure to some chemicals may degrade the sealing properties of materials used in the sealed relay

SETTING THE DIP SWITCH

Switch	Status	Description
1 to 8 (Port)	ON	Enables port link down alarm for the corresponding port
	OFF	Disables port link down alarm for the corresponding port
9 (Power)	ON	Enables the power failure alarm
	OFF	Disables the power failure alarm

MOUNTING THE SWITCH

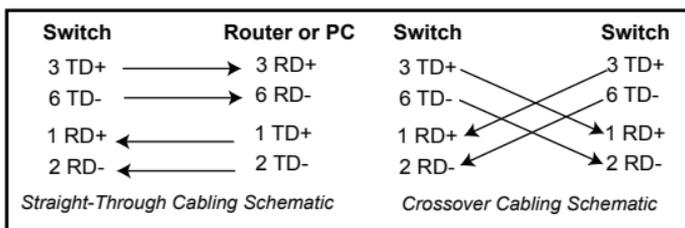
Mount the ES8108 on the DIN rail using the DIN rail clip that is attached to the rear of the unit.

1. Insert the upper end of DIN rail clip into the back of DIN rail track from its upper side.
2. Lightly push the bottom of DIN rail clip into the track.
3. Verify that the DIN rail clip is tightly attached on the track.

CONNECTING TO THE NETWORK

Connecting the Ethernet Ports

Connect one end of an Ethernet cable into the Ethernet port of the ES8108 and the other end to the attached device. All Ethernet ports support auto MDI/MDIX functionality.

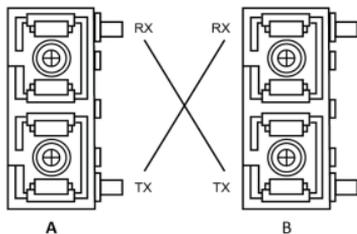


Always make sure that the cables between the switches and attached devices (for example - switch, hub, or workstation) are no more than 100 meters (328 feet). The cable must meet EIA/TIA-568 100-ohm specifications:

- 10BASE-T: Category 3, 4, or 5
- 100BASE-TX: Category 5 or 5e

Connecting the Fiber Ports (ES8108F/ES8108F-XT)

Connect the fiber port to another fiber Ethernet device using the following diagram. An improper connection will cause the fiber port to not work properly. The fiber port is a standard or square connector (SC).



Cable Wiring(SC to SC)

TX A RX B
RX A TX B

ATTENTION



This is a Class 1 Laser/LED product.
Do not stare into the Laser/LED Beam.

Optical Fiber Specifications

Mode	Cable Type	Wavelength	Transmit Power	Receive Sensitivity	Link Budget	Distance (km)
Multi	50/125um 62.5/125um	1310nm	-20dBm to -14dBm	-31dBm to 0dBm	11dBm	2km Note (below)
Single	8-10/125um	1310nm	-15dBm to -8dBm	-34dBm to 8dBm	19dBm	30km

Note: In the IEEE standards, it suggests the available transmission distance is 2km for 62.5/125um fiber optical cable in 1310nm wavelength. Actually, the attenuation of Multi-Mode 62.5/125um optical fiber cable is 1.5dBm/km and the maximum link distance can be up to 4 to 5km.

Optical Fiber Cable Attenuation

Fiber Type	Wavelength	Attenuation/ km*	Attenuation/ km**	Connector Loss	Splice loss
Multi-Mode 50/125um	850nm 1310nm	3.5dBm 1.5dBm	2.5dBm 0.8dBm	0.75dBm	0.1dBm
Multi-Mode 62.5/125um	850nm 1310nm	3.5dBm 1.5dBm	3.0dBm 0.7dBm	0.75dBm	0.1dBm
Single-Mode 9/125um	1310nm	0.4dBm	0.35dBm	0.75dBm	0.1dBm

* These values are per TIA/EIA and other industrial specifications

** These values are one example of the performance that can be obtained with a new fiber installation.

LED INDICATORS

There are system diagnostic and Ethernet port LEDs located on the front panel of the ES8108.

LED	LED Lit	LED Off
PWR 1/ PWR 2	Powered	No Power
Alm (Alarm)	Port Link is down or a power failure event has occurred.	Not activated
Port 1-8 (ES8108/ ES8108-XT)	A green lit LED indicates that a network device is detected and linked up.	If the green Link LED is lit and the yellow speed LED is off, a network device is detected and a link has been established at 10Mbps.
Port 1-6 (ES8108F/ ES8108F-XT)	A yellow lit LED indicates that a network device is detected and linked up.	Both green and yellow LEDs are not lit - a port link has not been established.
Fiber Ports 7-8 (ES8108F/ ES8108F-XT)	A green lit LED indicates that a network device is detected and a link has been established at 100Mbps.	No active link

PACKET FORWARDING ABILITY

The ES8108 features a packet filtering function for broadcast packet control protection and Quality of Service (QoS). Both features can provide higher performance in a crowded network through traffic filtering and prioritization.

Broadcast Control

The ES8108 begins to drop broadcast packets with DA (destination address) equal to FF:FF:FF:FF:FF:FF if the received broadcast packets are more than the threshold - 198 packets per second at 100Mbps or 19 packets per second at 10Mbps link speed. All ports are enabled with this function by default to provide better network performance and prevent congestion caused by the flooding of broadcast packets.

Quality of Service

The ES8108 supports the frame type priority function, where high priority packets will be flagged to a high priority queue to efficiently use more bandwidth. The ratio of bandwidth of the high priority to the low priority queue is 8:1. After 8 high priority packets are processed, then 1 low priority packet is processed. The ES8108 can examine the specific bits of VLAN Tag and TCP/IP TOS of IPv4 and IPv6.

CONTROL CUSTOMER SERVICE

You can use one of the following methods to contact Control.

Contact Method	Web Address or Phone Number
Support	http://www.comtrol.com/support
Downloads	ftp://ftp.comtrol.com/html/default.htm
Website	http://www.comtrol.com
Phone	+1 763.957.6000

