COMTROL®

ROCKETLINX ES8105

ES8105 | ES8105F | ES8105-XT | ES8105F-XT

QUICK INSTALLATION GUIDE

2000553 Rev D | Release Date - August 2014

INTRODUCTION

The RocketLinx ES8105 series of industrial Ethernet switches includes six models:

- ES8105 with five 10/100BASE-TX ports
- ES8105F with four 10/100BASE-TX ports and one 100BASE-FX Ethernet port (Single-Mode or Multi-Mode)
- ES8105-XT with five 10/100BASE-TX ports and an extended temperature range
- ES8105F-XT with four 10/100BASE-TX ports and one 100BASE-FX (Single-Mode or Multi-Mode) Ethernet port with an extended temperature range

All models of the ES8105 series are referred to as the ES8105 unless there is model-specific information.

The ES8105 provides a slim industrial design to save rail space for compact system requirements. The ES8105 switch is enclosed in an industrial-grade aluminum case with IP31 grade protection. It provides one relay output to alarm port link failure events, which is enabled and disabled by a DIP switch.

Refer to the Comtrol website for specification information.

ES8105-XT/ES8105F-XT IN CID2 ENVIRONMENTS

The ES8105-XT and ES8105F-XT are open-type and are to be installed in an enclosure suitable for the environment and only accessible with a tool.

The ES8105-XT/ES8105F-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 on the ES8105-XT or ES8105F-XT may impair suitability for Class I, Division 2.*

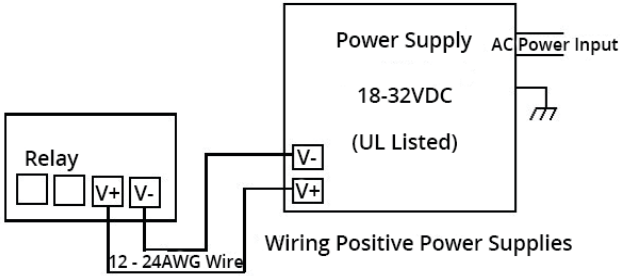
WIRING THE POWER INPUTS

The ES8105 provides reverse polarity protection and accepts a positive or negative power source. The recommended working voltage is 24VDC (18-32VDC).

WARNING - *EXPLOSION HAZARD - Do not disconnect the ES8105-XT or ES8105F-XT unless the power has been removed or the area is known to be non-hazardous.*

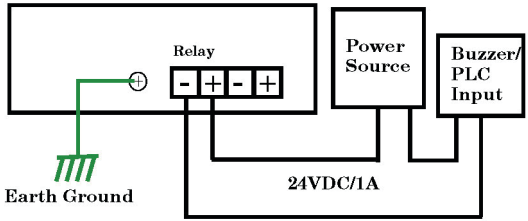
1. Insert the positive and negative wires into the power V+ and V- contacts on the terminal block connector.
2. Tighten the wire-clamp screws to prevent the wires from being loosened.

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.*



WIRING THE RELAY OUTPUT (DO)

The ES8105 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.



Alarm Relay Output

The failure events are selectable and enabled using the DIP switch on the ES8105. The relay contacts are rated for a maximum of 1A 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.*

GROUNDING THE ES8105

Wire the earth ground to ensure the system is not damaged by noise or any electrical shock. We recommend that you make a direct connection between the ES8105 and earth ground.

1. Using a screw driver, loosen the earth ground screw on the bottom of the ES8105 between the DIP switch and the terminal block.
2. Tighten the screw after the earth ground wire is connected.

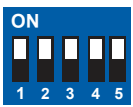
ENABLING THE EVENT ALARM

The ES8105 is equipped with one dry relay output for port link failure.

On the bottom of the ES8105, there is a DIP switch for alarm control. If you connect the alarm (Wiring the Relay Output) and set the DIP switch of the intended alarm to ON, the relay output forms a short circuit if a port failure occurs.

Use this table to set the DIP switch for the relay output alarm.

Port	Status	Description
1-5	On	Enables the port link failure alarm on this port.
	Off	Disables the port link failure alarm on this port.



MOUNTING THE ES8105

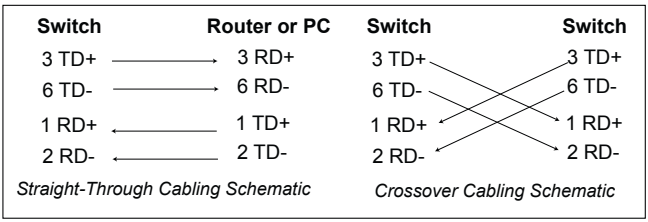
You can mount the ES8105 on a DIN rail. The DIN rail clip is attached to the ES8105.

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 THE RJ45 PORTS

Connect one end of an Ethernet cable into an RJ45 Ethernet port of the ES8105 and the other end to the attached networking device. The Fast Ethernet ports support 10BASE-T and 100BASE-TX, full- or half-duplex modes.

The Fast Ethernet ports automatically detect the signal from the connectied devices to negotiate the link speed and duplex mode. Auto MDI/MDIX allows you to connect another switch, hub, or workstation without changing straight-through or crossover cables. Crossover cables cross-connect the transmit lines at each end to the received lines at the opposite end.



The LINK/ACT LED is lit when the cable is correctly connected. The LINK/ACT LED is lit yellow for a 10BASE-TX Ethernet connection or green for a 100BASE-TX Ethernet connection. Always make sure that the cables between the switches and attached devices (for example, switch, hub, or workstation) are less than 100 meters (328 feet).

The cable must meet EIA/TIA-568 100-ohm specifications:

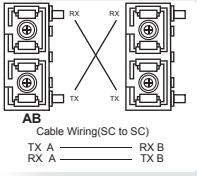
- 10BASE-T: Category 3, 4, 5, or 5e
- 100BASE-TX: Category 5 or 5e

Connecting the Fiber Port (ES8105F/ES8105F-XT)

Connect the fiber port on the ES8105F to another fiber Ethernet device using the following information.

ATTENTION

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



A wrong connection will cause the fiber port not to work properly.
The fiber connector is a standard connector or square connector (SC).

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 standard, it suggests the available transmission distance is 2KM for 62.5/125um fiber optical cable in 1310nm wave length. 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.*

The following table provides information about optical fiber cable attenuation:

Optical Fiber Attenuation

Fiber Type	Wavelength	Attenuation /km *1	Attenuation /km *2	Connector Loss	Splice Loss
Multi-Mode 50/125um	850nm 1310mm	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

*1. These values are per TIA/EIA and other industrial specifications.
*2. These values are an example of the performance that can be obtained with a new fiber installation.

LED INDICATORS

LED	LED Lit	LED Blinking	LED Off
PWR	Device powered on	Not applicable	No power
Alm	Port link down or power failure event occurred.	Not applicable	Not activated
Port 1- 5 (ES8105/ ES8105-XT) Port 1- 4 (ES8105F/ ES8105F-XT)	Green: A network device is detected and linked.	Green: The port is transmitting or receiving packets.	No port link
	Yellow: A network device is detected and link established at 100Mbps.	Not applicable	Yellow: A network device is detected and link established at 10Mbps.
Fiber Port 5 (ES8105F/ ES8105F-XT)	Green: The port is operating in full-duplex mode at 100Mbps.	Green: The port is transmitting or receiving packets at 100Mbps.	No port link

COMTROL CUSTOMER SERVICE

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

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