

Manual

Elinx EIRP305-24V-T

5 Ports 10/100 with 4 PoE Ports
Unmanaged Din Rail Ethernet Switch



EIRP305-24V-T

Documentation Number: EIRP305-24V-T-0912m



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Original – April 2011

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Overview

B&B Electronics offers the EIRP305-24V-T PoE Industrial switch with 5 10/100TX ports, 4 of which offer PoE. The switch is designed to meet the high reliability requirements demanded by industrial applications, and will support operations in wide temperature -40°C - 75°C environments.

The EIRP305-24V-T supports 24V or 48V DC power input and provides the PoE function with 48VDC output for all kinds of Powered Devices to receive power as well as data over an RJ-45 cable.

Features

- System Interface/Performance
 - RJ-45 ports support Auto MDI/MDI-X Function
 - Embedded 4-port PoE
 - Store-and-Forward Switching Architecture
 - Back-plane (Switching Fabric): 1.0Gbps
 - 2K MAC Address Table
- Power Input
 - DC 24V or 48V Redundant Power Input
- Operating Temperature
 - Wide Operating Temp: -40°C -75°C
- Case/Installation
 - IP-30 Protection
 - Installation in a Pollution Degree 2 environment
 - DIN Rail and Wall Mount Design
- Provides EFT protection 3,000 VDC for power line
- Supports 6,000 VDC Ethernet ESD protection

Package Contents

- 5 port 10/100TX with 4 Port High-Power PoE Industrial Switch (with DIN-Rail Bracket)
- User manual
- Quick Start Guide
- Removable Terminal Block
- Wall-mount Kit (2 wall-mount bracket with screws)

Hardware Description

The following information is an introduction to the PoE Industrial Ethernet Switch dimensions, port, cabling information, and wiring installation.

Dimensions

5 port 10/100T(X) with 4 PoE ports. Industrial Switch dimensions (W x D x H) is 48.6mm x 95mm x 140mm, the detail dimensions as **Figure-1**

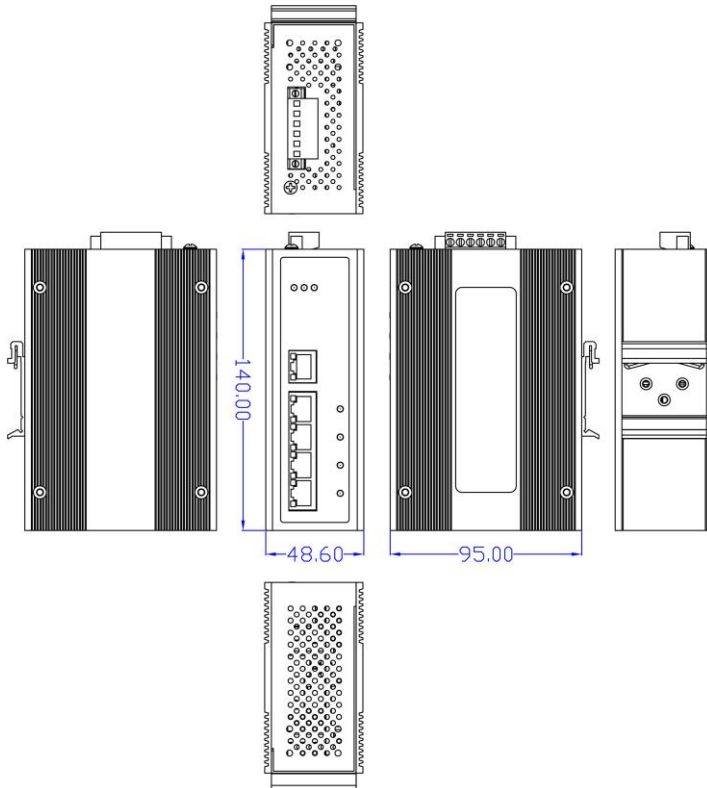


Figure-1: Mechanical Dimensions

Front Panel

The Front Panel of the 5 port 10/100TX with 4 PoE Industrial Switch is shown below **Figure-2**

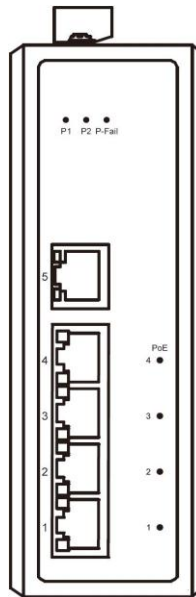


Figure-2: Front Panel of the Switch

Top View

The top view of the EIRP305-24V-T Industrial Switch has one terminal block connector for two DC power inputs and Relay circuit contact. Please refer to **Figure-3** for further information.

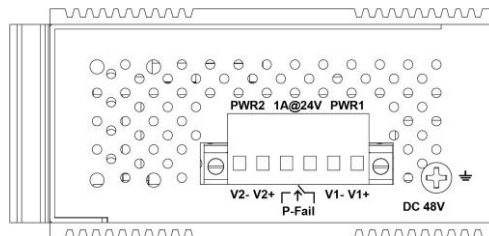


Figure-3: Top View of the Switch

LED Indicators

The diagnostic LEDs located on the front panel of the industrial switch provide real-time information of system and operation status. **Table-1** provides the description of the LEDs status and their definitions for the switch.



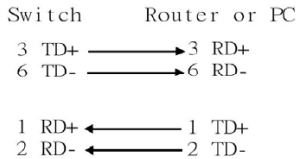
LED	Color	Description	
P1	Green	On	Power input 1 is active
		Off	Power input 1 is inactive
P2	Green	On	Power input 2 is active
		Off	Power input 2 is inactive
P-Fail	Red	On	Power input 1 or 2 has failed
		Off	Power input 1 and 2 are both functional, or no power inputs
PoE indicator (Port 1 ~ 4)	Green	On	The port is supplying power to the powered-device
		Off	No powered-device attached or power supplying fails
LAN Port 1 ~ 5 (RJ-45)	Green	On	Connected to network
		 Flashing	Networking is active
		Off	Not connected to network
	Amber	On	Full-duplex link
		 Flashing	Collision occurs
		Off	Half-duplex link or link down

Table-1: LED Indication Definition

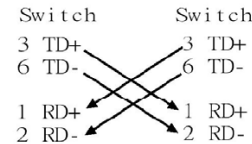
RJ45

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.

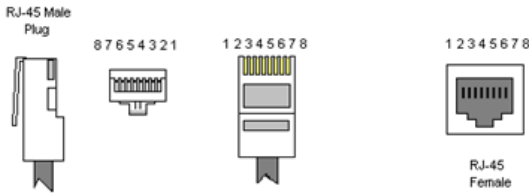
Pin	MDI-X Signal Name	MDI Signal Name
1	Receive Data plus (RD+)	Transmit Data plus (TD+)
2	Receive Data minus (RD-)	Transmit Data minus (TD-)
3	Transmit Data plus (TD+)	Receive Data plus (RD+)
6	Transmit Data minus (TD-)	Receive Data minus (RD-)



Straight Through Cable Schematic



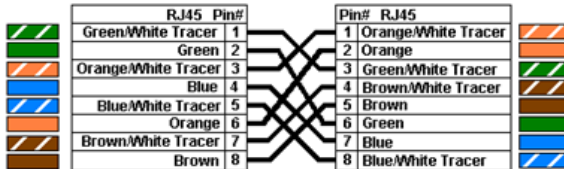
Cross Over Cable Schematic



Color Standard EIA/TIA T568A Ethernet Patch Cable



Color Standard EIA/TIA T568A Ethernet Crossover Cable



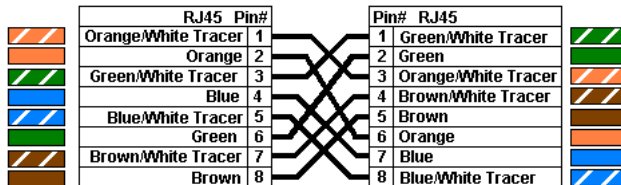
"A" is earlier

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Color Standard EIA/TIA T568B Ethernet Patch Cable



Color Standard EIA/TIA T568B Ethernet Crossover Cable



"B" is most recent

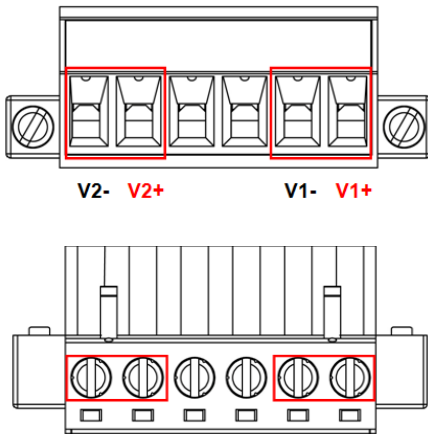
Common Ethernet Crossover Cables may only cross connect the Orange & Green pairs

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Cabling

Use unshielded twisted-pair (UTP) or shielded twisted-pair (STP) cable for RJ-45 connections: 100 Ω Category 3, 4 or 5 cable for 10Mbps connections, 100 Ω Category 5 cable for 100Mbps connections. The cable between the switch and the link partner (switch, hub, workstation, etc.) must be less than 100 meters (328 ft.) long.

Wiring the Power Inputs



Note:

1. Terminal block rated for 12-24 AWG wire
2. Use copper conductors, 60/75°C. Tighten to 5 lb in.

Wiring the Fault Alarm Contact

The fault alarm contact is in the middle of terminal block connector as the picture below shows. Inserting the wires will detect the fault status including power failure and from a *Normally Close* circuit. Please refer to Figure-8 for the fault alarm contact, and Figure-9 shows the application example for the fault alarm operation.



Figure-8:

Terminal Block Front View for Fault Alarm Contact

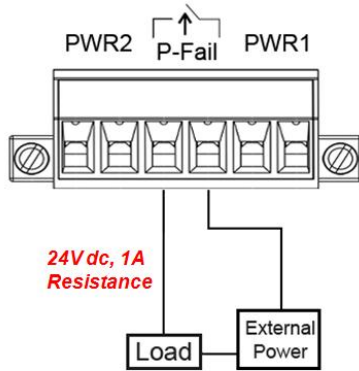


Figure-9:

Fault Alarm Application Example

Note:

1. Terminal block rated for 12-24 AWG wire
2. Use copper conductors, 60/75°C. Tighten to 5 lb in.

Mounting Installation

DIN-Rail Mounting

Assembling the DIN-Rail Clip

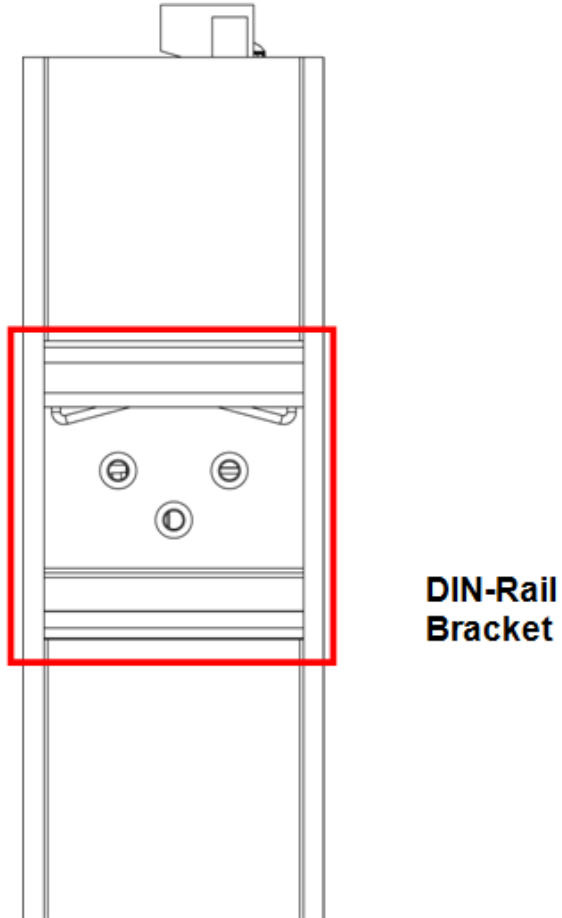
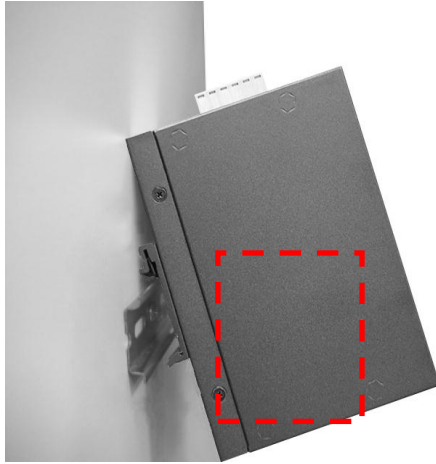


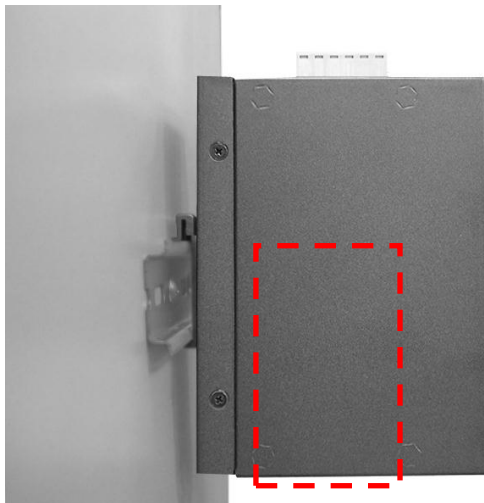
Figure-10: Rear side of the PoE Injectors Industrial Switch

Hanging the Industrial Switch

First, position the din-rail clip of the switch directly in front of the DIN rail. Make sure the top of the clip hooks over the top of the DIN rail.



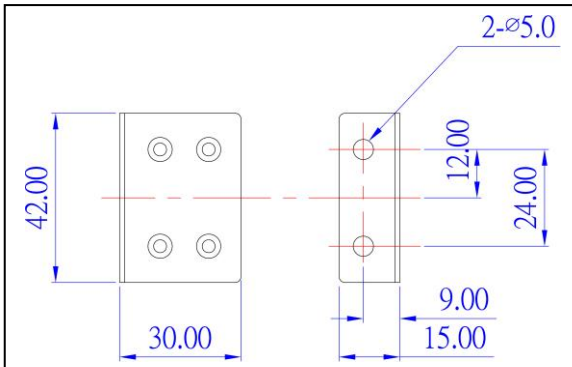
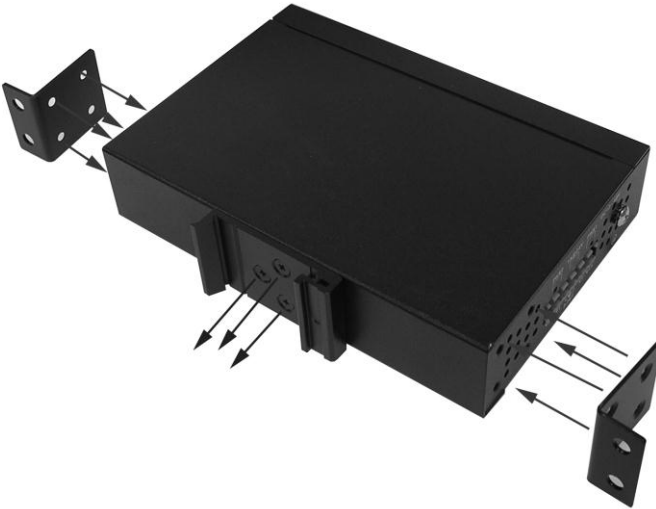
Push the unit downward.



Check the DIN-Rail clip is tightly fixed on the DIN rail.
To remove the industrial switch from the track, reverse the steps above.

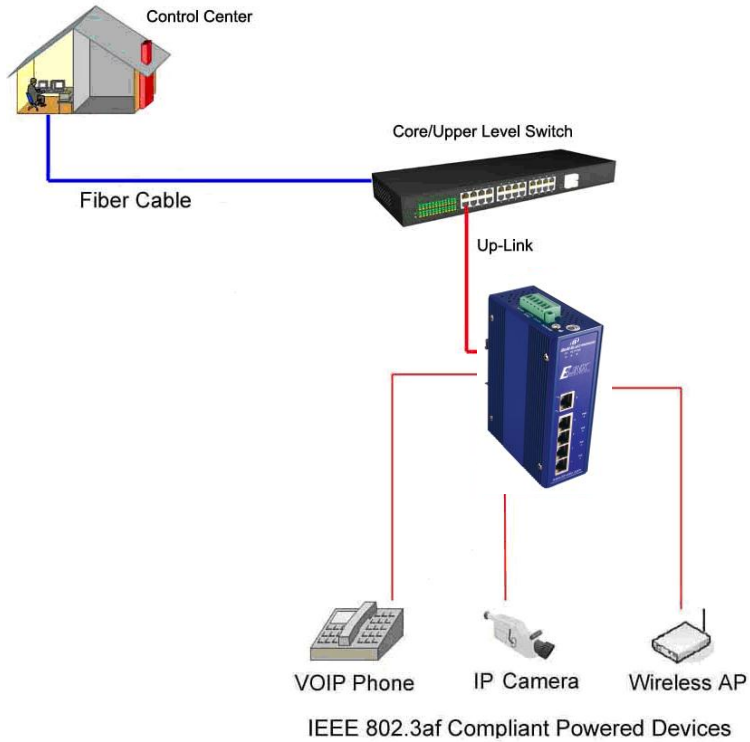
Wall-Mount Plate Mounting

1. When using the wall mount plates the din-rail clip can be removed.
2. Place the wall-mount plates on the rear panel of the industrial switch and fasten the screws.



Wall-Mount Bracket Dimensions

Hardware Installation Diagram



Troubleshooting

- Verify that you are using the appropriate power supply adapter. Do not use the power adapter with DC output higher than the power rating of the device.
- Select the proper UTP/STP cable to construct your network. Use unshielded twisted-pair (UTP) or shielded twisted-pair (STP) cable for RJ-45 connections: 100 Ω Category 3, 4 or 5 cable for 10Mbps connections, 100 Ω Category 5 cable for 100Mbps connections. Insure the length of any twisted-pair connection does not exceed 100 meters (328 feet).
- **Diagnosing LED Indicators:** The Switch can be easily monitored through panel LED's. The LED's will provide an easy way of detecting power or communication problems.
- If the Industrial switch LED indicators function normal and the connected cables are correct but the packets still cannot transmit, please check your system's Ethernet devices' configuration or status. The Ping test is a common method to check Ethernet devices connections on the network.

Technical Specification

Compatibility	IEEE 802.3, 802.3u, 802.3x, 802.3af
LAN	10/100Base-T
Transmission Speed	Up to 100 Mbps
Interface	
Connectors	5 x RJ-45 (5-port 10/100TX)
	6-pin removable screw terminal (Power & Relay)
LED Indicators	Unit: Power1, Power2, P-Fail, PoE
	Ethernet port: Link/Active, Full Duplex/Collision
PoE	
Power Output	Per port 48 VDC, 15.4 Watts max.
Pin Assignment	RJ-45 port #1 ~ # 4 support IEEE 802.3af
	End-point, Alternative A mode.
	Positive (VCC+): RJ-45 pin 1, 2.
	Negative (VCC-): RJ-45 pin 3, 6.
	Data (1,2,3,6)
Power	
Power Consumption	62.5 Watts max. @ 48 VDC
	67 Watts max. @ 24 VDC
Power Input	2 x Unregulated +24/48 VDC
Fault Output	1 Relay Output
Mechanism	
Dimensions (WxHxD)	48.6 x 140 x 95 mm
Enclosure	IP-30, Metal shell with solid mounting kits
Mounting	DIN-Rail, Wall Mount
Protection	
ESD (Ethernet)	6,000 VDC
Surge (EFT for power)	3,000 VDC
Power Reverse	Yes
Overload current protection	Yes

Environment	
Operating Temperature	PIFE-441A-24 : -10 ~ 60oC
	PIFE-441AE-24 : -40 ~ 75oC
Operating Humidity	5% ~ 95% (non-condensing)
Storage Temperature	-40 ~ 85oC
Storage Humidity	5% ~ 95% (non-condensing)
Certifications	
Safety	UL / cUL 508
EMC	FCC Class A
	CE EN61000-6-2
	CE EN61000-6-4
	CE EN61000-4-2 (ESD)
	CE EN61000-4-3 (RS)
	CE EN61000-4-4 (EFT)
	CE EN61000-4-5 (Surge)
	CE EN61000-4-6 (CS)
	CE EN61000-4-8 (Magnetic Field)
Free Fall	IEC60068-2-32
Shock	IEC60068-2-27
Vibration	IEC60068-2-6