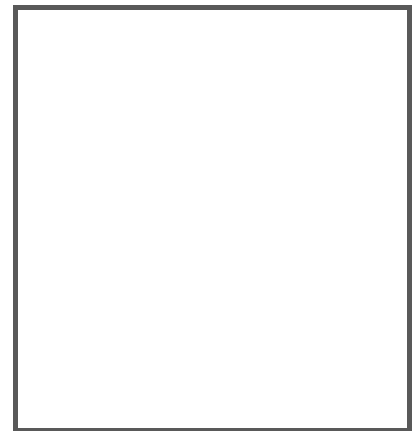


**MANUAL**

**RocketLinx**

**ICRL-U-6RJ45-B-DIN**

**ICRL-U-10RJ45-B-DIN**



With regard to the supply of products, the current issue of the following document is applicable: The General Terms of Delivery for Products and Services of the Electrical Industry, published by the Central Association of the Electrical Industry (Zentralverband Elektrotechnik und Elektroindustrie (ZVEI) e.V.) in its most recent version as well as the supplementary clause: "Expanded reservation of proprietorship".



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# 1. Introduction

## 1.1. Product Overview

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This manual discusses the following unmanaged RocketLinX Power over Ethernet (PoE) switches:

- ICRL-U-6RJ45-PoE-B-DIN
- ICRL-U-10RJ45-PoE-B-DIN

The ICRL-U-6RJ45-PoE-B-DIN and ICRL-U-10RJ45-PoE-B-DIN provide voltage boost that delivers 48 V on the IEEE 802.3af PoE ports using a low voltage power source. The voltage boost technology makes the deployment of standard IP cameras feasible on buses, rail cars, ships, and other vehicles.

Both switches are compliant with the IEEE 802.3af PoE standard to deliver a maximum of 15.4 W per port.

**Note:** This manual uses RocketLinX for the switch name unless there is model-specific information.

### 1.1.1. ICRL-U-6RJ45-PoE-B-DIN Features

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The ICRL-U-6RJ45-PoE-B-DIN provides the following features:

- Four Fast Ethernet IEEE 802.3af PoE ports with a maximum of 15.4 W per port
- Two Gigabit uplink ports to ensure a high-bandwidth connection
- Supports IEEE 802.1p Class of Service
- Wide operating temperature -25 to 60 °C
- Port failure alarm (relay output) 1 A @ 24 V DC
- Alternative B PoE output mode
- PoE output voltage 48 V/60 W
- Power input 12 - 24 V DC

For more information, refer to <https://www.pepperl-fuchs.com>.

### 1.1.2. ICRL-U-10RJ45-PoE-B-DIN Features

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The ICRL-U-10RJ45-PoE-B-DIN provides the following features:

- Eight Fast Ethernet IEEE 802.3af PoE ports with a maximum of 15.4 W per port
- Two Gigabit uplink ports to ensure a high-bandwidth connection
- Supports IEEE 802.1p Class of Service
- Wide operating temperature -40 to 70 °C
- Port failure alarm (relay output) 1 A @ 24 V DC
- Alternative B PoE output mode
- PoE output voltage 48 V/80 W
- Power input 8 - 32 V DC

For more information, refer to <https://www.pepperl-fuchs.com>.



## 2. Installation

This chapter provides information to install your RocketLinx switch.

- *Wire the Power Connector*
- *Wire the Relay Output (Port Alarm) on Page 8*
- *Connect the Ground on Page 9*
- *Set the DIP Switch (Port Alarm) on Page 10*
- *Mount the RocketLinx on the DIN Rail on Page 11*
- *Connect the Ethernet or PoE Ports on Page 12*
- *RocketLinx LEDs on Page 13*

### 2.1. Wire the Power Connector

The following table provides electrical specifications for the RocketLinx

Electrical Specification	ICRL-U-6RJ45-PoE-B-DIN	ICRL-U-10RJ45-PoE-B-DIN
Power Input	12 - 24 V DC	8 - 32 V DC with polarity reverse protection
Power Consumption (without PD loading)	8.3 W@ 24 V DC 7.2 W@ 12 V DC	8.3 W@ 24 V DC 7.2 W@ 12 V DC
Power Consumption (with PD loading)	75 W @ 24 V DC	107.28 W @ 24 V DC
Maximum Output/Power PoE Port	15.4 W	15.4 W
PoE Voltage Output	48 V	48 V
PoE Power Budget	60 W	8 V DC, 70 °C/ 60 W 9 V DC, 70 °C/ 80 W 12 V DC, 70 °C/ 80 W 24 V DC, 70 °C/ 80 W 32 V DC, 70 °C/ 80 W

Use the following procedure to connect a power supply to the RocketLinx.

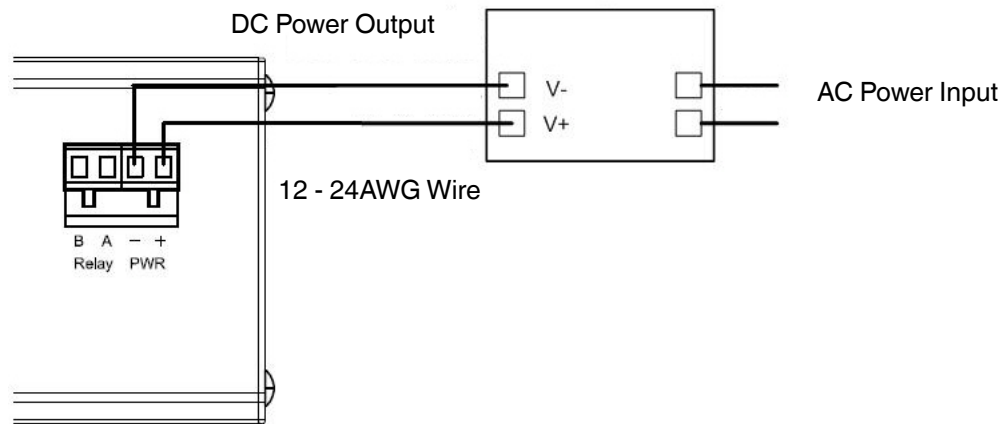
1. Disconnect the terminal block from the RocketLinx.

**Note:** Make sure that the power supply is OFF before connecting it to the switch. Otherwise, your screwdriver blade can inadvertently short your terminal connections to the grounded enclosure.

2. Insert the positive and negative wires (12-24 AWG) into the PWR+ and PWR- contacts.
3. Tighten the wire-clamp screws to prevent the wires from coming loose.
4. Plug the terminal block into the RocketLinx.

**AC/DC Power Supply Minimum 4 A (UL Listed)**

- ICRL-U-6RJ45-PoE-B-DIN: 12 V to 24 V DC
- ICRL-U-10RJ45-PoE-B-DIN: 8 V to 32 V DC

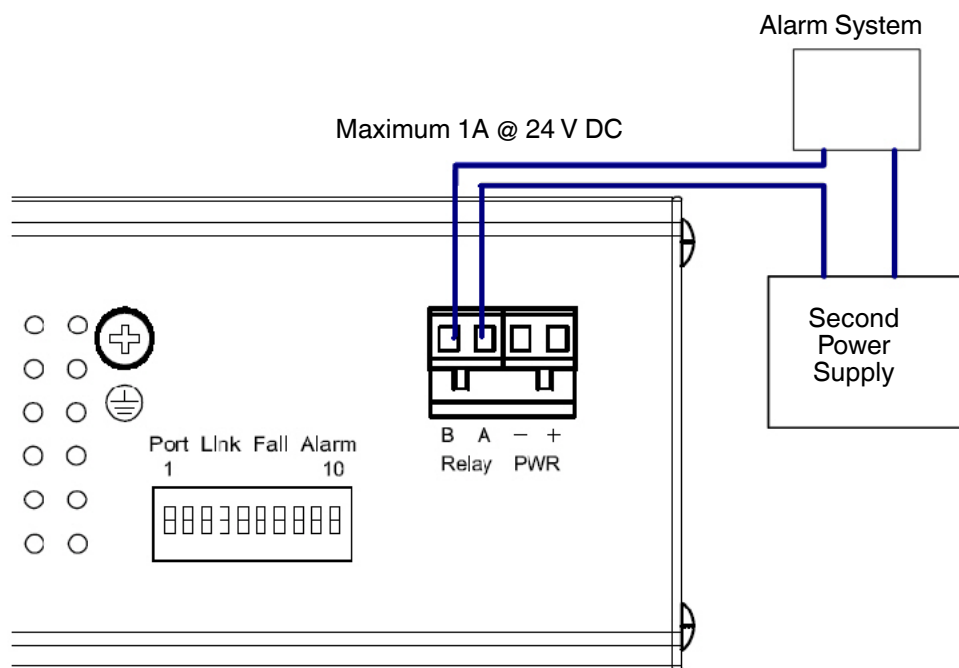


## 2.2. Wire the Relay Output (Port Alarm)

The ICRL-U-6RJ45-PoE-B-DIN and ICRL-U-10RJ45-PoE-B-DIN provide Relay Output. The relay contacts are energized (open) for normal operation and will close under faulty condition such as an Ethernet port link break. The relay alarm can be configured by the DIP switches on the bottom of the RocketLinx.

1. Insert positive and negative wires into Relay A and Relay B.
2. Tighten the wire-clamp screws to prevent the wires from coming loose.
3. Set the DIP switches using *Set the DIP Switch (Port Alarm)* on Page 10.

**Note:** The DIP switches are set to OFF from the factory.



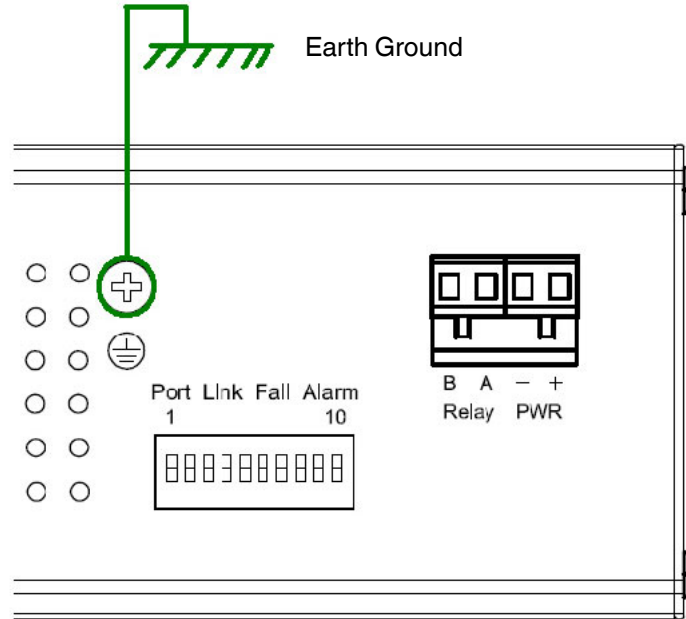
*This image illustrates the DIP switch for the ICRL-U-10RJ45-PoE-B-DIN.*



## 2.3. Connect the Ground

Use the following procedure to connect the ground.

1. Connect a ground wire between the chassis and earth ground using 12-24AWG wire to ensure that the RocketLinx is not damaged by noise or electrical shock.
2. Loosen the earth ground screw on the bottom of the RocketLinx with a screw driver.
3. Tighten the screw after the earth ground wire is connected.



*This image illustrates the DIP switch for the ICRL-U-10RJ45-PoE-B-DIN.*

## 2.4. Set the DIP Switch (Port Alarm)

You can configure the Port Link Alarm for the Ethernet ports. The following table shows the DIP switch number mapping to the corresponding PoE and Gigabit ports as follows.

- The ICRL-U-6RJ45-PoE-B-DIN has a 6-pin DIP switch
- The ICRL-U-10RJ45-PoE-B-DIN has a 10-pin DIP switch

The port break alarm is limited to an auto-negotiation 10/100 full-duplex device.

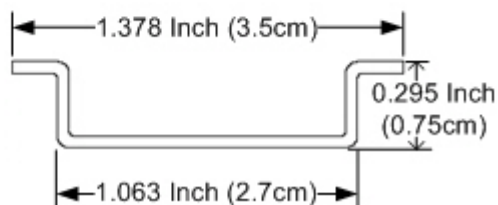
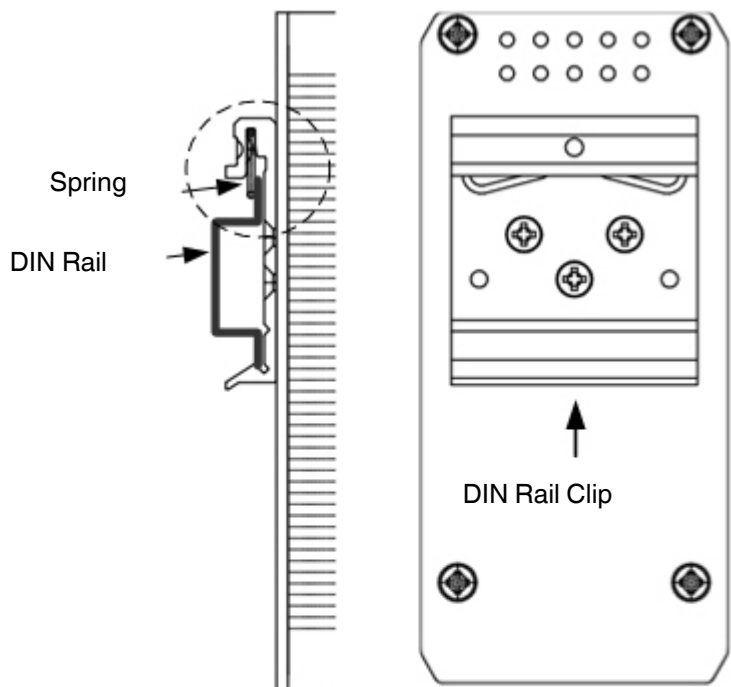
Port G2	Port G1	Port 1	Port 2	Port 3	Port 4	Port 5	Port 6	Port 7	Port 8
DIP 1	DIP 2	DIP 3	DIP 4	DIP 5	DIP 6	DIP 7	DIP 8	DIP 9	DIP 10
<b>ICRL-U-6RJ45-PoE-B-DIN</b>						N/A	N/A	N/A	N/A
<b>ICRL-U-10RJ45-PoE-B-DIN</b>									

DIP Switch	Status	Description
1 - 2	On	Enables the Gigabit port failure alarm for this port
	Off (Default)	Disables the Gigabit port failure alarm for this port
3 - 6 or 3 - 10	On	Enables the PoE port failure alarm for this port
	Off (Default)	Disables the PoE port failure alarm for this port

## 2.5. Mount the RocketLinx on the DIN Rail

The DIN rail clip is attached to the RocketLinx. The RocketLinx will disperse heat through the metal case during PoE port operation. The RocketLinx should be installed and mounted onto a panel that provides good heat dispersion.

1. Insert the upper end of the DIN rail clip into the back of the DIN rail track from its upper side.  
**Note:** *The RocketLinx supports EN 50022 standard DIN rail, in the following diagram includes the dimension of EN 50022 DIN rail for your reference.*
2. Lightly push the bottom of the DIN rail clip into the track.
3. Verify that the DIN rail clip is tightly attached to the track.



EN 50022 DIN Rail Dimension

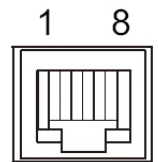
## 2.6. Connect the Ethernet or PoE Ports

You can use the following information to connect Ethernet cables between the RocketLinX ports and the network nodes.

- Ports G1 and G2 are Gigabit Ethernet ports that support 10BASE-T, 100BASE-TX, and 1000BASE-TX.
- ICRL-U-6RJ45-PoE-B-DIN: Ports 1-4 are Fast Ethernet 10/100BASE-TX PoE ports that are IEEE 802.3af (PoE) compliant. The Fast Ethernet ports support 10BASE-T and 100BASE-TX, full- or half-duplex modes.
- ICRL-U-10RJ45-PoE-B-DIN: Ports 1-8 are Fast Ethernet 10/100BASE-TX PoE ports that are IEEE 802.3af (PoE) compliant. The Fast Ethernet ports support 10BASE-T and 100BASE-TX, full- or half-duplex modes.

**Note:** The RocketLinX PoE mode is Alternative B.

Ethernet cables use Pins 1, 2, 3, and 6 of an 8-pin RJ45 connector. The following table shows the RJ45 pin-out assignments for the PoE and Gigabit ports. In addition, it provides information to support Alternative A PSE (Power Source Equipment).



ICRL-U-6RJ45-PoE-B-DIN and ICRL-U-10RJ45-PoE-B-DIN				Alternative A Devices	
RJ45 Pin	1000BASE-TX Signal	10/100BASE-TX PoE Signal Alternative B (MDI-X)	10/100BASE-TX PoE Signal Alternative B (MDI)	Alternative A (MDI-X)	Alternative A (MDI)
1	BI_DA+	RD +-	TD+	Rx and Vport-	Tx and Vport+
2	BI_DA-	RD -	TD-	Rx and Vport-	Tx and Vport+
3	BI_DB+	TD +	RD+	Tx and Vport+	Rx and Vport-
4	BI_DC+	Vport+			
5	BI_DC-	Vport+			
6	BI_DB-	TD -	RD-	Tx and Vport+	Rx and Vport-
7	BI_DD+	Vport-			
8	BI_DD-	Vport-			

All the Fast Ethernet ports automatically detect the signal from the connected 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.

Connect one side of an Ethernet cable into any switch port and connect the other side to your attached device. The wiring cable types and maximum cable length are as follows.

- Uplink ports
  - 10BASE-T: 2-pair UTP/STP Category 3, 4, 5 cable, EIA/TIA-568 100-ohm (100 meters)
  - 100BASE-TX: 2-pair UTP/STP Category 5 cable, EIA/TIA-568 100-ohm (100 meters)
  - 1000BASE-TX: 4-pair UTP/STP Category 5 cable, EIA/TIA-568 100-ohm (100 meters)
- PoE ports: 4-pair UTP/STP Category 5e / 6 cable, EIA/TIA-568 100-ohm (100 meters)

## 2.7. RocketLinx LEDs

The following table provides information about the port status LEDs.

LED	Status	Description
PWR	On	RocketLinx receiving power.
	Off	RocketLinx not powered.
Alarm	On	Indicates alarm relay event, if DIP switch enabled.
	Off	No alarm relay event.
PoE	On	PoE power on the corresponding port.
	Off	PoE power not active on the corresponding port.

Port Status	LED	Description	
Port Link/ Activity		Green	The port is connected
		Blinking	Transmitting or receiving packets
		Off	The port link is inactive
Gigabit Ports Activity		Yellow	Full-duplex mode connection
		Blinking	Data collision
		Off	The link is inactive or operating in half-duplex mode

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