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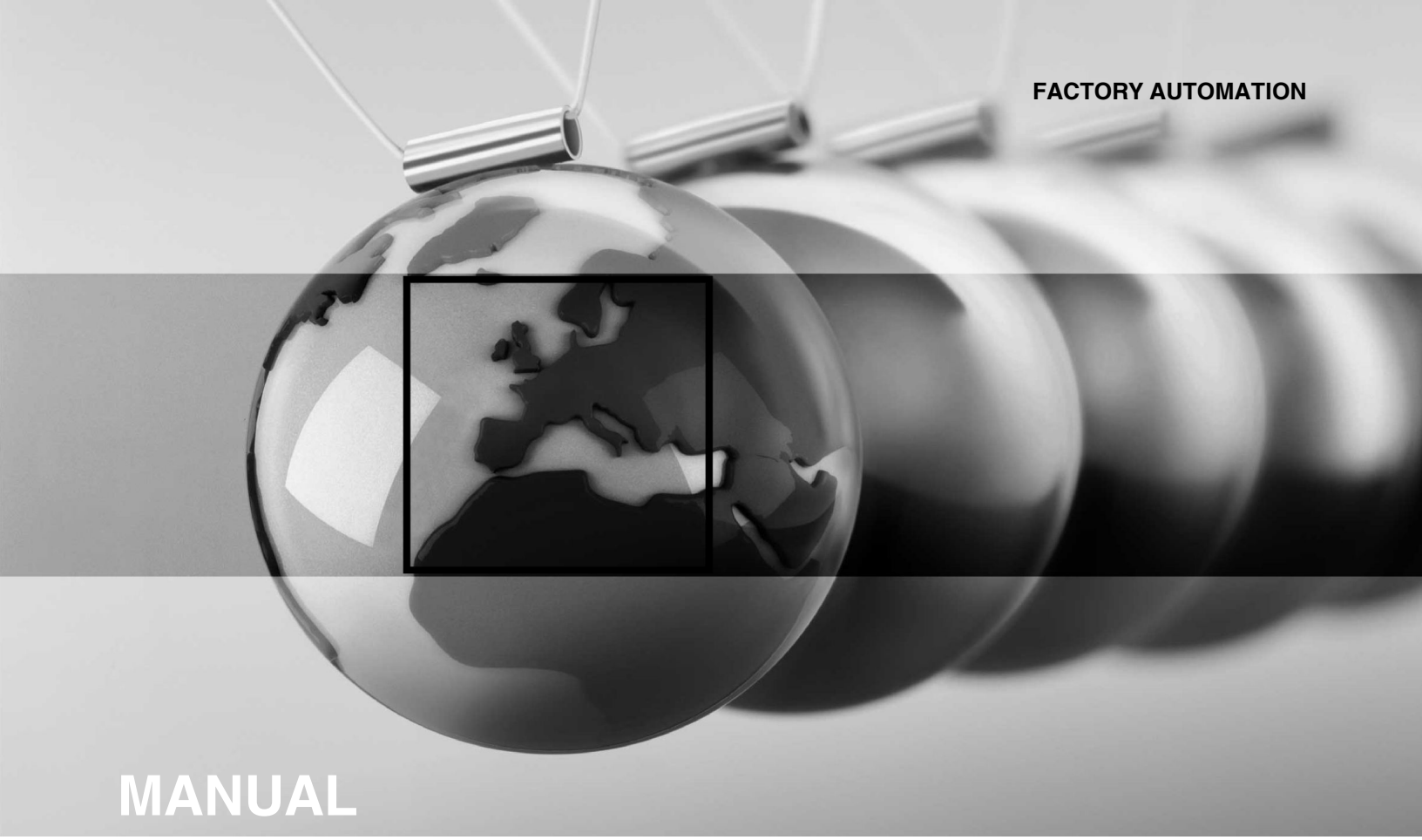


MANUAL

RocketLinx

ICRL-U-4RJ45/SFP-PoE-G-DIN

ICRL-U-5RJ45-PoE-G-DIN

PEPPERL+FUCHS

Table of Contents

2021-05

1. Introduction

1.1. Product Overview

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

- ICRL-U-4RJ45/SFP-PoE-G-DIN
- ICRL-U-5RJ45-PoE-G-DIN

Both switches are compliant with the IEEE 802.3af/at PoE standards to deliver a maximum of 30 W per port.

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

1.1.1. ICRL-U-4RJ45/SFP-PoE-G-DIN Features

The ICRL-U-4RJ45/SFP-PoE-G-DIN provides the following features:

- Four Gigabit Ethernet IEEE 802.3af/at PoE ports with a maximum of 30 W per port
- One Gigabit SFP port
- 9K bytes Jumbo Frame for Large File Transmission
- Slim industrial size
- Wide operating temperature -40 to 75 °C
- Port failure alarm (relay output) 1 A @ 24 V DC
- Alternative A PoE output mode
- PoE output voltage 48 V
- Redundant power with a wide power input range, 48 - 57 V DC

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

1.1.2. ICRL-U-5RJ45-PoE-G-DIN Features

The ICRL-U-5RJ45-PoE-G-DIN provides the following features:

- Four Gigabit Ethernet IEEE 802.3af/at PoE ports with a maximum of 30 W per port
- One Gigabit RJ45 Ethernet port
- 9K bytes Jumbo Frame for Large File Transmission
- Slim industrial size
- Wide operating temperature -40 to 75 °C
- Port failure alarm (relay output) 1 A @ 24 V DC
- Alternative A PoE output mode
- PoE output voltage 48 V
- Redundant power with a wide power input range, 48 - 57 V DC

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

2. Installation

This chapter provides information to install your RocketLinx switch.

2.1. Wire the Power Connector

The following table provides electrical specifications for the RocketLinx

Electrical Specifications	ICRL-U-4RJ45/SFP-PoE-G-DIN ICRL-U-5RJ45-PoE-G-DIN
Power Input (Redundant)	44 to 57 V DC > 48 V to support IEEE 802.3af mode > 50 V to support IEEE 802.3at mode
Power Consumption (without PD loading) ICRL-U-5RJ45-PoE-G-DIN ICRL-U-4RJ45/SFP-PoE-G-DIN	 1.76 W @ 44 V 1.71 W @ 57 V 2.2 W @ 44 V 2.28 W @ 57 V
Power Consumption (with PD loading) ICRL-U-5RJ45-PoE-G-DIN ICRL-U-4RJ45/SFP-PoE-G-DIN	 113.76 W @ 44 V 113.71 W @ 57 V 114.2 W @ 44 V 114.28 W @ 57 V
Maximum Output/Power PoE Port IEEE 802.3af IEEE 802.3at	 15.4 W 30 W
PoE Power Budget	112 W @ 52 V

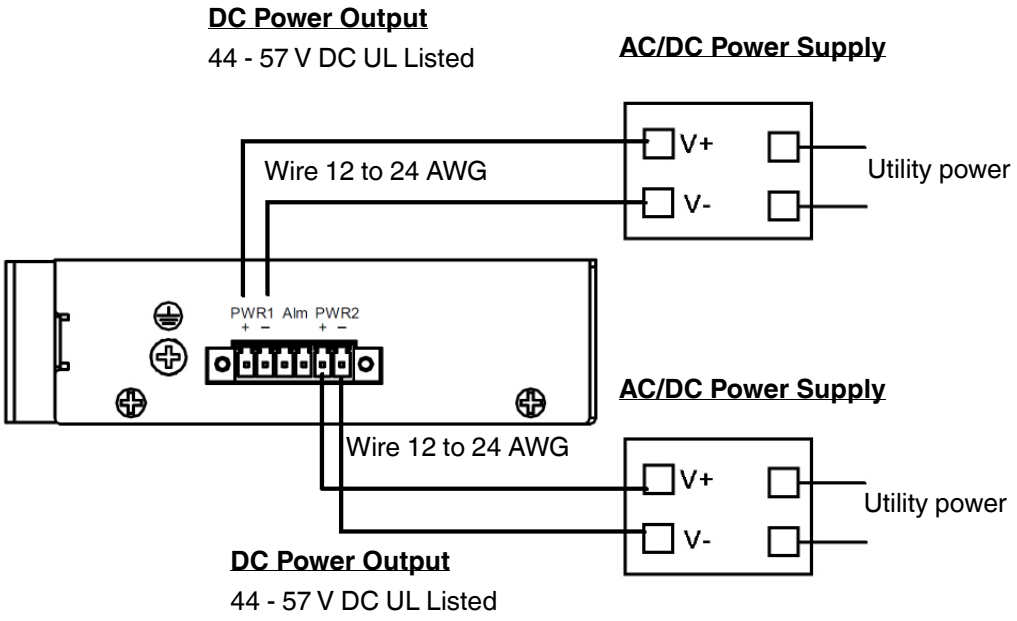
Use the following procedure to connect a power supply to the RocketLinx.

Note: *The Power 1 and Power 2 support power redundancy and polarity reverse protection functions.*

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 could inadvertently short the terminal connections to the grounded enclosure.*

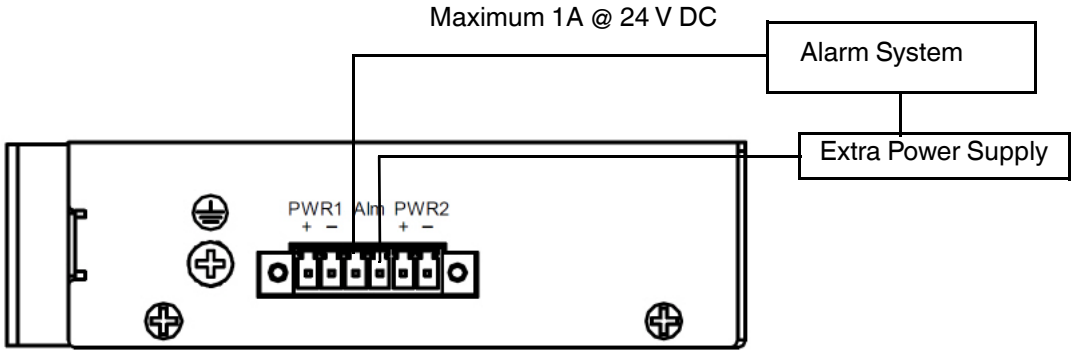
2. Insert the positive and negative wires (12-24 AWG) into the PWR1/PWR2+ and PWR1/PWR2- contacts.
3. Tighten the wire-clamp screws to prevent the wires from coming loose.
4. Plug the terminal block into the RocketLinx.



2.2. Wire the Relay Output (Port Alarm)

The ICRL-U-4RJ45/SFP-PoE-G-DIN and ICRL-U-5RJ45-PoE-G-DIN provide a single dry relay output for one DC power failure. The relay contacts are energized (open) for normal operation and will close under faulty condition such as an Ethernet port link break.

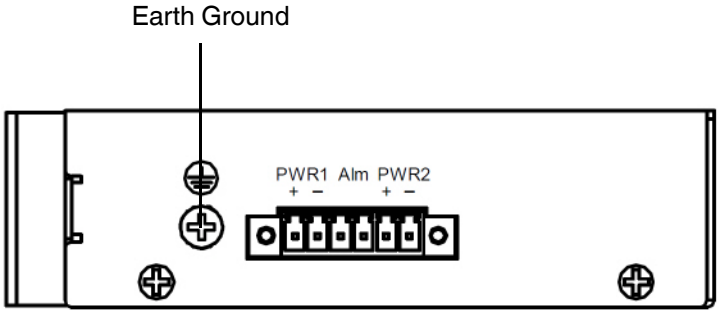
1. Insert positive and negative wires into Relay A and Relay B.
2. Tighten the wire-clamp screws to prevent the wires from coming loose.



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 12-24 AWG 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.



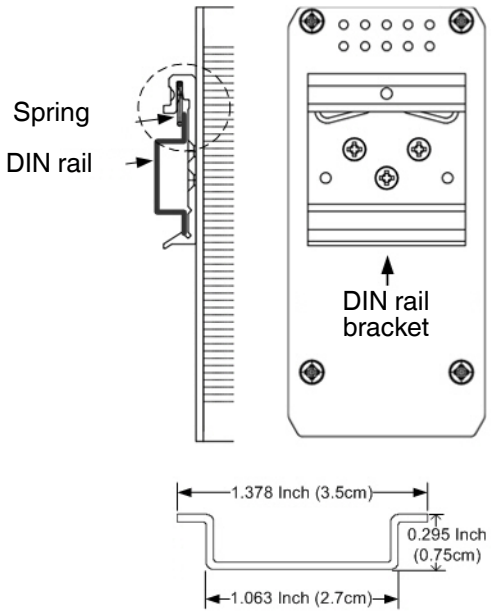
2.4. Mount the RocketLinx on the DIN Rail

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 55022 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.



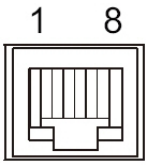
2.5. Connect the Ethernet or PoE Ports

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

- All RJ45 ports are Gigabit Ethernet ports that support 10BASE-T,100BASE-TX, and 1000BASE-TX.
- The RJ45 ports automatically detect the signal from the connected devices to negotiate the link speed and duplex mode (half- or full-duplex). 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.

Note: *The RocketLinx PoE mode is Alternative A.*

The following table shows the RJ45 pin-out assignments for the PoE and Gigabit ports.

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

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
  - 10/100BASE-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)

2.6. Connect the Gigabit SFP Port

A single SFP socket is available on the ICRL-U-4RJ45/SFP-PoE-G-DIN. The SFP port supports hot swappable feature and a user can change SFP fiber transceiver without system power off. This feature is useful for field site installations if the fiber signal can not attach to the other end device, just change to a different SFP transceiver type.

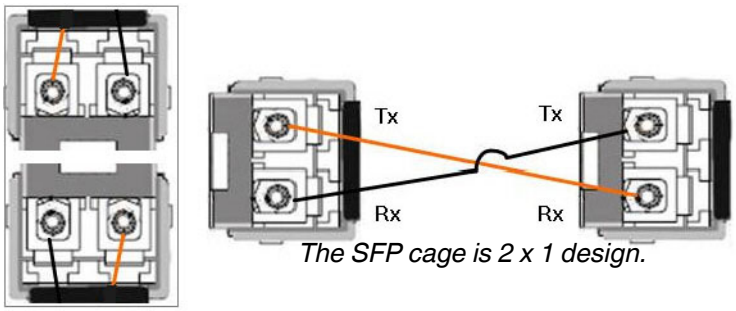
Fiber optic cable length should not exceed the maximum transmission distance of the SFP modules.

Pepperl+Fuchs provides various types of SFP transceivers for your application at **https://www.pepperl-fuchs.com**.

1. Plug the SFP transceiver into the SFP fiber slot.
2. Connect the transmit channel to the receive channel at each end.
3. Check the direction/angle of the fiber transceiver and the fiber cable.

Note: *This is a Class 1 Laser/LED product. Do not stare at the Laser/LED Beam.*

The SFP port does not function until the fiber cable is linked to another active device.



The SFP cage is 2 x 1 design.

2.7. RocketLinx LEDs

The following table provides information about the port status LEDs.

LED	Status	Description
P1 and P2	Green/On	Corresponding power input receiving power.
	Off	Corresponding power input not receiving power.
P-F	Red/On	PWR1 (and/or) PWR2 disconnected.
	Off	Power connection on both power inputs.
SFP (*ICRL-U-4RJ45/ SFP-PoE-G-DIN*)	Green/On	Link established.
	Blinking	1000 Mbps activity.
RJ45 ports	Green/on	Link established.
	Blinking	Activity
	Amber/On	1000 Mbps link established.
	Amber/off	10/100 Mbps link established.
PoE 1 - 4	Green/On	PoE power on the corresponding port.
	Off	PoE power not active on the corresponding port, no PD attached.

FACTORY AUTOMATION – SENSING YOUR NEEDS

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