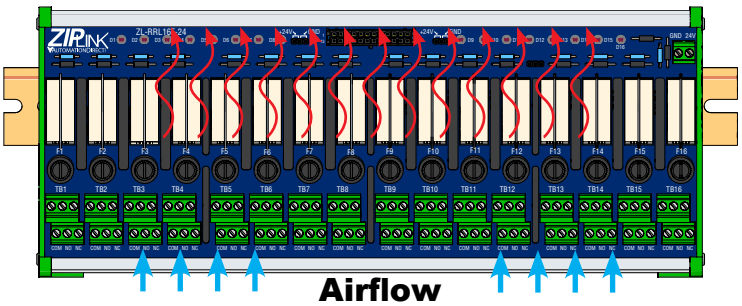
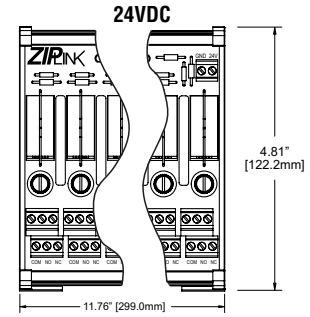
24V DC-Powered Relay Module Installation Instructions

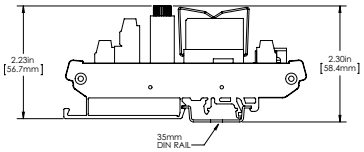
Sinking ZL-RRL16F-24-1
Sourcing ZL-RRL16F-24-2

Heat Dissipation Mounting Requirements

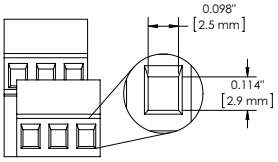


IMPORTANT! Mount Module horizontally to provide proper ventilation.



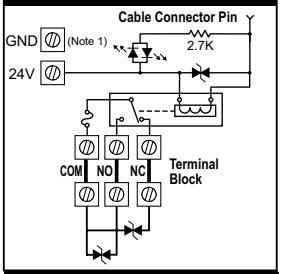


WARNING: We recommend installing up to a 0.75 Amp fast-blow fuse such as AGC-75 or similar in series with the power supply as an extra safety measure.

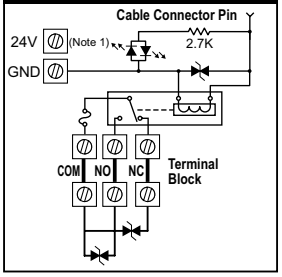


Terminal Block Insertion Point Opening Dimension

ZL-RLL16F-24-1 Sinking Typical Internal Circuit



ZL-RLL16F-24-2 Sourcing Typical Internal Circuit



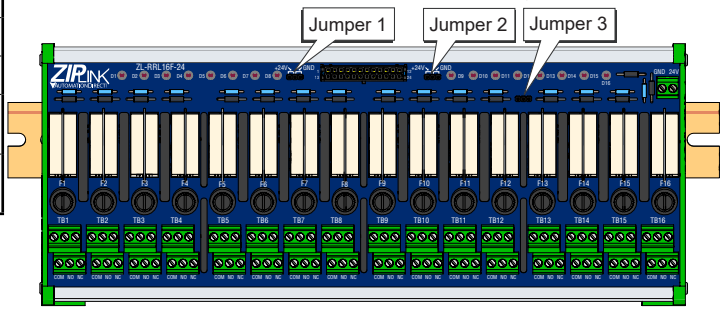
Note 1: See jumper notes.

ZL-RRL16F-24-1 Sinking				
DirectLOGIC	*Productivity3000*	*CLICK*	*Productivity2000*	*BRX*
J1 +24V ●	J1 +24V ●	J1 ● GND	J1 +24V ●	J1 ● GND
J2 ● GND	J2 ● GND	J2 +24V ●	J2 ● GND	J2 ● GND
J3 +24V ●	J3 +24V ●	J3 +24V ●	J3 +24V ●	J3 +24V ●

ZL-RRL16F-24-2 Sourcing				
DirectLOGIC	*Productivity3000*	*CLICK*	*Productivity2000*	*BRX*
J1 ● GND	J1 ● GND	J1 +24V ●	J1 ● GND	J1 +24V ●
J2 +24V ●	J2 +24V ●	J2 ● GND	J2 +24V ●	J2 +24V ●
J3 ● GND	J3 ● GND	J3 ● GND	J3 ● GND	J3 ● GND

ZL-RRL16F-24 Pinouts	
Connector Pin	*Relay*
3	Relay 1 (TB1)
4	Relay 2 (TB2)
5	Relay 3 (TB3)
6	Relay 4 (TB4)
9	Relay 9 (TB9)
10	Relay 10 (TB10)
11	Relay 11 (TB11)
12	Relay 12 (TB12)
15	Relay 5 (TB5)
16	Relay 6 (TB6)
17	Relay 7 (TB7)
18	Relay 8 (TB8)
21	Relay 13 (TB13)
22	Relay 14 (TB14)
23	Relay 15 (TB15)
24	Relay 16 (TB16)

Jumper Position	Description
J1, J2, and J3	+24V↘ ↙GND Jumpers referenced above and below have this silkscreen on the PCB
J1 +24V	Connects +24VDC to Connector Pins 1,7,13, & 19
J1 GND	Connects GND to Connector Pins 1,7,13, & 19
J2 +24V	Connects +24VDC to Connector Pins 2, 8,14, & 20
J2 GND	Connects GND to Connector Pins 2, 8,14, & 20
J3 +24V	Factory set On ZL-RRL16F-24-1 Connects +24VDC to Relay Coil Commons
J3 GND	Factory set On ZL-RRL16F-24-2 Connects GND to Relay Coil Common



General Module Specifications	
Description	16 Fused Output Relay module with LEDs, 24 VDC Coil
Mechanical Life	100,000,000 Operations no load condition
Electrical Life	1,000,000 Operations at rated resistive load
Operating Frequency	6 cycles per minute electrical 300 cycles per minute mechanical
Isolation Coil to Contact	2500VAC for 1 minute
Isolation NC Contact to NO Contact	1000VAC for 1 minute
Isolation Between Relays	1000VAC for 1 minute
Red LED Indicator State Relay	ON = relay energized, OFF = relay de-energized
Operating Temperature Range	32 to 140°F (0 to 60°C)
Shock Resistance	1000m/s² endurance, 100m/s² operation
Terminal Block Contacts	Copper alloy, tin-lead plated
Wire Range*	12–24 AWG Solid or Stranded Conductor
Wire Strip Length	0.24–0.27 in (6–7 mm)
Screw Torque	4.4 in-lbs (0.5 Nm)
Connector Type	Molex Micro-Fit 3.0, 24 pin connector, example receptacle 43020-2400, Pins 43031 Series, Male
Replacement Relays	ZL-RELAY-F24X4, Qty. 4/pkg
Fuses (Sold Separately)	Sixteen 5X20mm, 250V
Replacement Fuses	See Edison 5X20mm Glass Fuse section range up to Max. 10
Cable/Wire Clearance	0.5in (12.7mm)
Weight	930g (32.8 oz)
Approvals	File # E139594 UL, cUL 508, CE, EN 61131-2:2007

Relay Contact Specifications	
Current Rating	30VDC @ 8A General Use 250VAC @ 8A General Use
Contact Type	1 Form C (SPDT)
Contact Voltage*	250VAC/30VDC
Maximum Power Inductive	2000VA General Use
Maximum Power Resistive	AC 2000VA, DC 240W
Maximum Switching Voltage	250VAC, 300VDC
Minimum Load	10mA @ 5VDC
Contact Resistance	100mΩ Max @ 1A, 6VDC
Contact Capacity	5FLA/30LRA, 250VAC 1/2 HP, 250VAC Pilot Duty B300-C300
Contact Material	AgNi (Silver Nickel Alloy)
Coil Specifications	
Input Voltage Rating **	24VDC (-20 / +30%)
Maximum Continuous Coil Voltage	31.2VDC
Rated Current Per Coil	16.7 mA (±10%) @ 24VDC
Coil Resistance	1440Ω (±10%)
Power Consumption Per Coil	0.4 W
Total Coil Supply Current Max.	400mA (Total 16 relays)
Pick Up Current Max. Per Coil	15mA
Drop-Out Voltage Min.	1.2 VDC
Pick-Up Voltage Max.	19.2 VDC
Off to On/On to Off Response Time	12mS/8mS

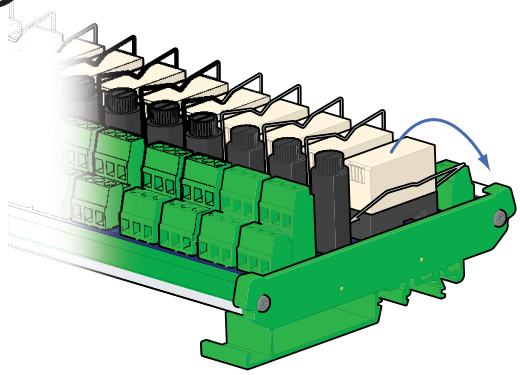
*Use conductors rated 60°/75°C for relay outputs. **Relay modules are reverse polarity protected and will not operate if reverse voltage is connected.

24V DC-Powered Relay Module Installation Instructions

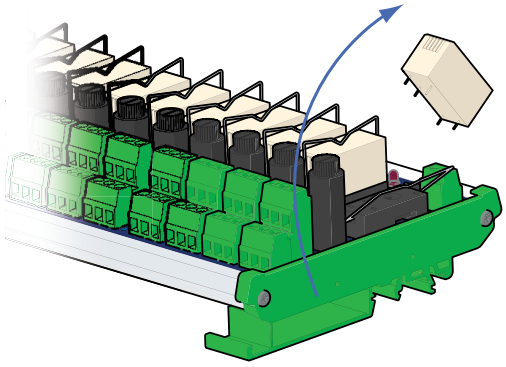
Sinking ZL-RRL16F-24-1
Sourcing ZL-RRL16F-24-2

Remove or Install Relay

1 Rotate retaining clip away from relay.



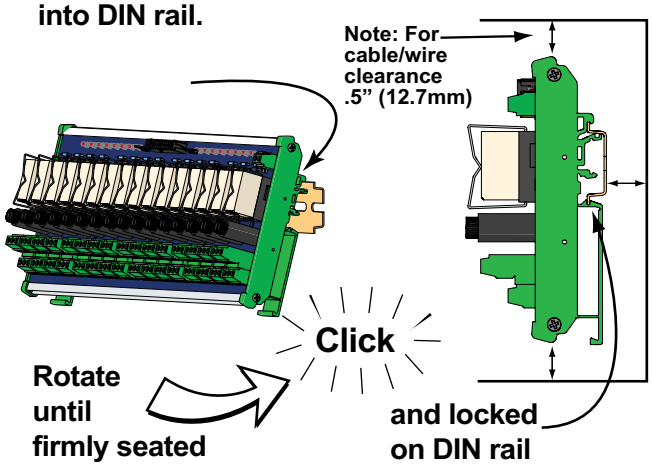
2 Remove relay from module.



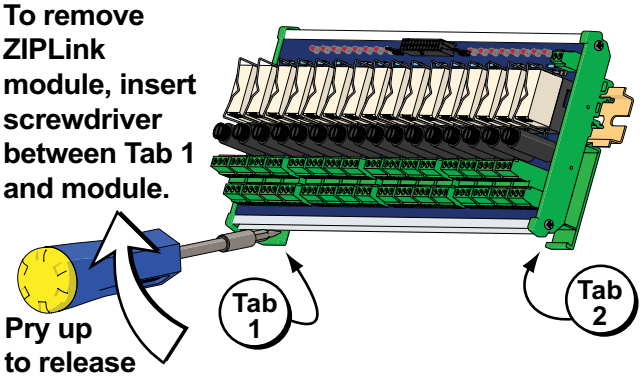
Reverse procedure to replace relay.

DIN Rail Installation and Removal

To install ZIPLink module, insert upper tab into DIN rail.



To remove ZIPLink module, insert screwdriver between Tab 1 and module.



Pry up to release clip from DIN rail.

Repeat for Tab 2.

WARNING: To minimize the risk of potential safety problems, you should follow all applicable local and national codes that regulate the installation and operation of your equipment. These codes vary from area to area and it is your responsibility to determine which codes should be followed, and to verify that the equipment, installation, and operation are in compliance with the latest revision of these codes.

Equipment damage or serious injury to personnel can result from the failure to follow all applicable codes and standards. We do not guarantee the products described in this publication are suitable for your particular application, nor do we assume any responsibility for your product design, installation, or operation.

If you have any questions concerning the installation or operation of this equipment, or if you need additional information, please call Technical Support at 770-844-4200.

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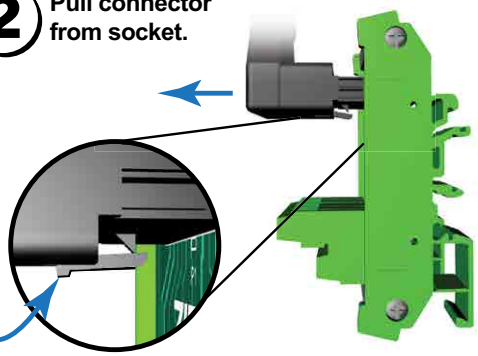
ZIPLink Cable Removal

2 Pull connector from socket.

1 Push tab on raised tip and hold.



For Replacement Relay
Use ZL-RELAY-F24X4, Qty. 4/pkg.

AUTOMATIONDIRECT.com
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1-800-633-0405 www.automationdirect.com

Part Number	Revision	Date
ZL-RRL16F-24	4th Ed.	1/24/2018