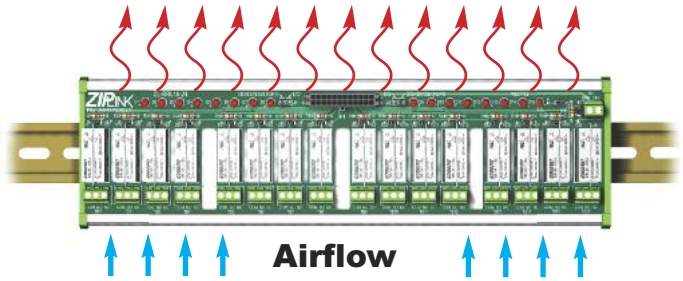
24V DC-Powered Relay Module Installation Instructions

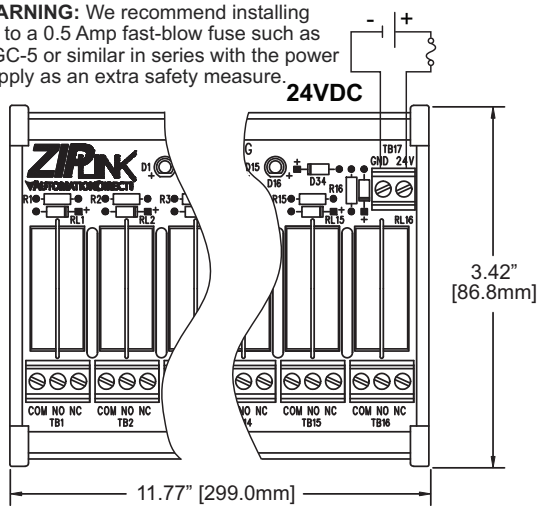
Sinking ZL-RRL16-24-1
Sourcing ZL-RRL16-24-2

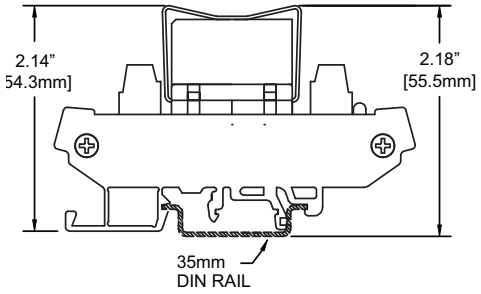
Heat Dissipation Mounting Requirements

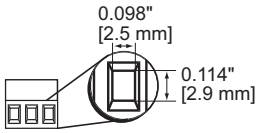


IMPORTANT! Mount Module horizontally to provide proper ventilation.

WARNING: We recommend installing up to a 0.5 Amp fast-blow fuse such as AGC-5 or similar in series with the power supply as an extra safety measure.



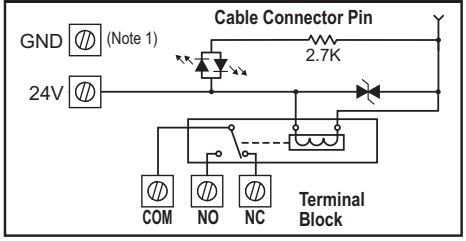




Terminal Block Insertion Point Opening Dimension

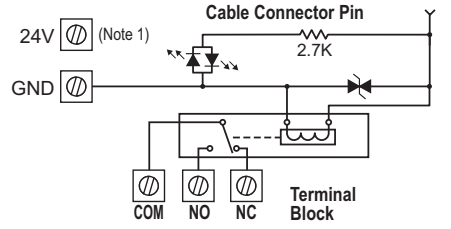
ZL-RRL16-24 Pinouts	
Connector Pin	*Relay*
3	Relay 1 (TB1)
4	Relay 2 (TB2)
5	Relay 3 (TB3)
6	Relay 4 (TB4)
9	Relay 9 (TB9)
10	Relay 10 (TB10)
11	Relay 11 (TB11)
12	Relay 12 (TB12)
15	Relay 5 (TB5)
16	Relay 6 (TB6)
17	Relay 7 (TB7)
18	Relay 8 (TB8)
21	Relay 13 (TB13)
22	Relay 14 (TB14)
23	Relay 15 (TB15)
24	Relay 16 (TB16)

ZL-RRL16-24-1 Internal Circuitry Details/ Use with Sinking Output Device



Note 1: See jumper notes.

ZL-RRL16-24-2 Internal Circuitry Details/ Use with Sourcing Output Device



Note 1: See jumper notes.

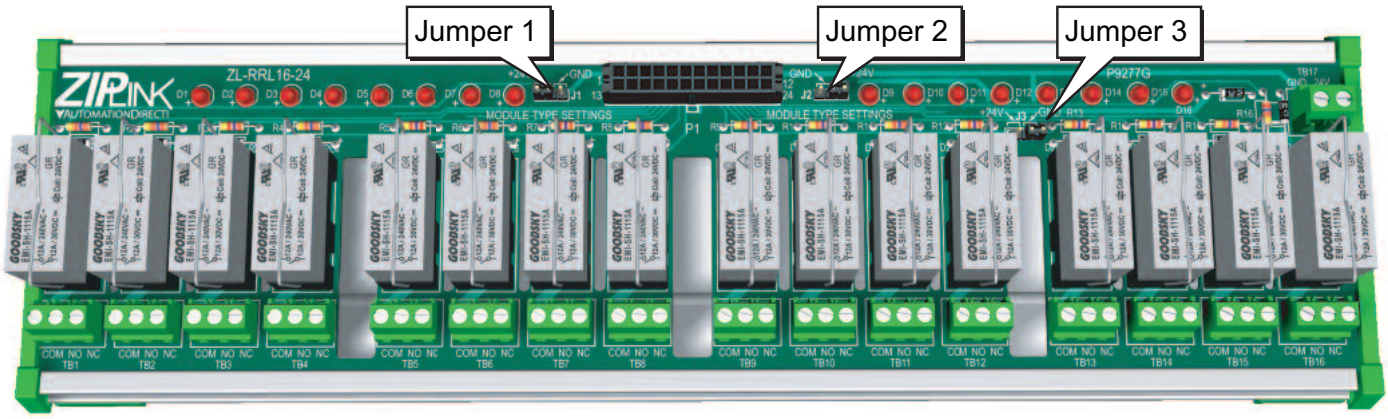
General Module Specifications**	
Description	16 Output Relay module with LEDs, 24 VDC coil
Operating Frequency	20 cycles per minute electrical 300 cycles per minute mechanical
Isolation Coil to Contact	2500VAC for 1 minute
Isolation NC Contact to NO Contact Same Relay	1000VAC for 1 minute
Isolation Between 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)
Humidity Range	45 to 85% RH
Terminal Block Contacts	Copper alloy, tin-lead plated
*Wire Range**	12-24AWG Solid or Stranded Conductor
Wire Strip Length	0.24-0.27" (6-7mm)
Screw Torque	4.4 in-lbs (0.5 Nm)
Replacement Relay	ZL-RELAY-24X4
Connector Type	Molex Micro-Fit 3.0, 24 pin connector, example receptacle 43020-2400, Pins 43031 Series, Male
Dimensions (LxWxH)	11.77" x 3.42" x 2.14" (299mm x 86.8mm x 54.3mm)
Approvals	File # E157382 UL, cUL 508, CE, EN 61131-2:2007
Cable/Wire Clearance	0.5" (12.7mm)
Weight (lbs)	1.45
Relay Service Life	Mechanical: 10,000,000 Operations at no load condition; Electrical: 100,000 Operations at rated resistive load

Relay Contact Specifications	
Current Rating	30VDC @ 10A General Use 250VAC @ 8A General Use
Contact Type	1 Form C (SPDT)
*Contact Voltage (per point)**	250VAC/30VDC
Maximum Power Inductive	2000VA General Use
Maximum Power Resistive	AC 2000VA, DC 300W
Maximum Switching Voltage	250VAC, 110VDC
Minimum Load	10mA @ 5VDC
Contact Resistance	100mΩ Max @ 1A, 6VDC
Contact Material	AgNi (Silver Nickel Alloy)
Vibration Resistance	10 to 55 Hz dual amplitude width 1.5mm
Shock Resistances	1000m/s² endurance, 100m/s² operation
Coil Specifications	
Input Voltage Rating	24VDC (-20 / +30%)
Maximum Continuous Coil Voltage	31.2VDC
Rated Current Per Coil	16.7mA (±10%) @ 24 VDC
Coil Resistance	1440Ω (±10%)
Power Consumption Per Coil	0.4W
Total Coil Supply Current Max.	293mA (All relays on)
Pick Up Current Max. Per Coil	15mA
Drop-Out Voltage Min.	1.2VDC
Pick-Up Voltage Max.	19.2VDC
Off to On/On to Off Response Time	12mS/8mS

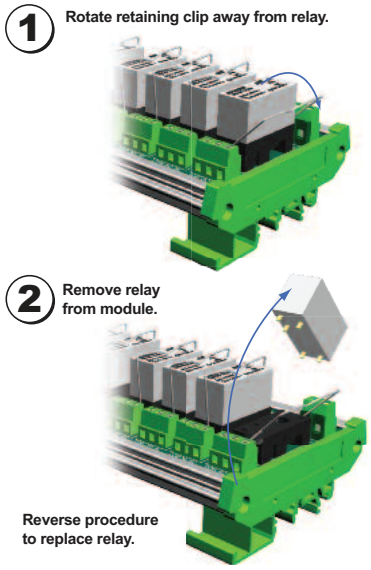
*Use conductors rated 60°/75°C for relay outputs.
**Relay modules are reverse polarity protected and will not operate if reverse voltage is connected.

24V DC-Powered Relay Module Installation Instructions

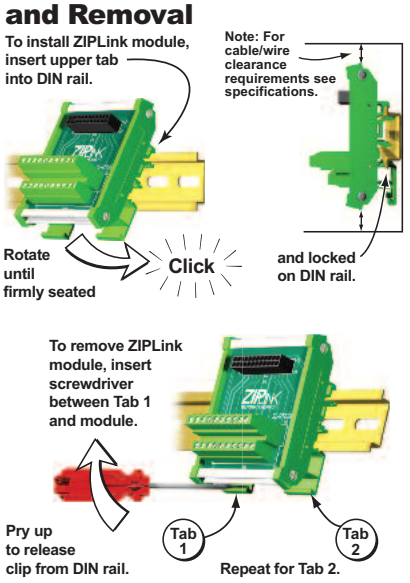
Sinking ZL-RRL16-24-1
Sourcing ZL-RRL16-24-2



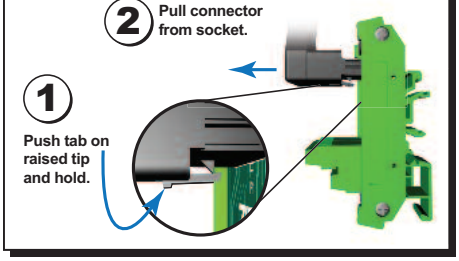
Remove or Install Relay



DIN Rail Installation and Removal



ZIPLink Cable Removal



For Replacement Relay
Use ZL-RELAY-24X4, Qty. 4/pkg.

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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ZL-RRL16-24-1 Sinking	ZL-RRL16-24-2 Sourcing	Position	Jumper Connection
Jumper J1*			
DirectLOGIC Productivity3000	CLICK	1 2 3	+24VDC to Connector Pins 1, 7, 13, & 19
CLICK Productivity2000	DirectLOGIC Productivity3000 Productivity2000	1 2 3	GND to Connector Pins 1, 7, 13, & 19
Jumper J2*			
CLICK Productivity2000	DirectLOGIC Productivity3000 Productivity2000	1 2 3	+24VDC to Connector Pins 2, 8, 14, & 20
DirectLOGIC Productivity3000	CLICK	1 2 3	GND to Connector Pins 2, 8, 14, & 20
Jumper J3*			
Factory Set	Not Possible**	1 2 3	+24VDC to Relay Commons
Not Possible***	Factory Set	1 2 3	GND to Relay Common

*All jumpers **MUST** be positioned according to the above diagram for appropriate module operation.
**Not possible – Pin 3 is removed.
***Not possible – Pin 1 is removed.

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