

# 24V DC-Powered Relay Modules

DC-powered relay modules provide isolation, switch high current (10A) loads, and include diode protection to prevent voltage spikes at the relay coil from damaging connected 16-point PLC I/O modules. Relays are included with these modules.

Modules mount on 35mm DIN rail (part #DN-R35S1) or 15mm DIN rail (part #DN-R15S1).



ZL-RRL16-24-1



ZL-RRL16-24-2

Specifications								
24V DC-Powered Relay Module	Part #	Pcs/Pkg	Price/Pkg	Weight (lbs)	Part #	Pcs/Pkg	Price/Pkg	Weight (lbs)
	ZL-RRL16-24-1	1		1.45	ZL-RRL16-24-2	1		1.45
<b>Description</b>	16 Output Relay module, sinking, with LEDs, 24VDC coil				16 Output Relay module, sourcing, with LEDs, 24VDC coil			
<b>Operating Frequency</b>	20 cycles per minute electrical, 300 cycles per minute mechanical							
<b>Isolation Coil to Contact</b>	2500VAC for 1 minute							
<b>Isolation NC Contact to NO Contact Same Relay</b>	1000VAC for 1 minute							
<b>Isolation Between Relays</b>	1000VAC for 1 minute							
<b>Red LED Indicator State Relay</b>	ON = relay energized, OFF = relay de-energized				ON = relay de-energized, OFF = relay energized			
<b>Operating Temperature Range</b>	32 to 140°F (0 to 60°C)							
<b>Humidity Range</b>	45 to 85% RH							
<b>Terminal Block Contacts</b>	Copper alloy, tin-lead plated							
<b>Wire Range *</b>	12–24 AWG Solid or Stranded Conductor							
<b>Wire Strip Length</b>	0.24–0.27 in (6–7 mm)							
<b>Screw Torque</b>	4.4 in-lbs (0.5 N-m)							
<b>Connector Type</b>	Molex Micro-Fit 3.0, 24 pin connector, example receptacle 43020-2400, Pins 43031 Series, Male							
<b>Connecting Cables (Sold Separately)</b>	Click on link: <a href="#">Wiring Selection Guides</a> . Click on link: <a href="#">Connection Cable Specifications Tables</a> .							
<b>Replacement Relays</b>	ZL-RELAY-24X4, Qty. 4/pkg							
<b>Cable/Wire Clearance</b>	0.5 in (12.7 mm) required							
<b>Mounting Restrictions</b>	Horizontal mounting only, non-corrosive environment							
<b>Approvals</b>	File # E157382 UL, cUL 508							

Relay Specifications **			
Contact		Coil	
<b>Current Rating</b>	30VDC @ 10A, 250VAC @ 8A, General Use	<b>Input Voltage Rating</b>	24VDC (-20%/+30%)
<b>Contact Type</b>	1 Form C (SPDT)	<b>Maximum Continuous Coil Voltage</b>	31.2 VDC
<b>Contact Voltage (per point) *</b>	250VAC/30VDC	<b>Rated Current per Coil</b>	16.7 mA (±10%) @ 24VDC
<b>Maximum Power Inductive</b>	2000VA General Use	<b>Coil Resistance</b>	1440Ω (±10%)
<b>Maximum Power Resistive</b>	AC 2000VA, DC 300W	<b>Power Consumption per Coil</b>	0.4 W
<b>Maximum Switching Voltage</b>	250VAC, 110VDC	<b>Total Coil Supply Current Max.</b>	293mA (all relays on)
<b>Minimum Load</b>	10mA @ 5VDC	<b>Pick Up Current Max. per Coil</b>	15mA
<b>Contact Resistance</b>	100mΩ Max @ 1A, 6VDC	<b>Drop-Out Voltage Min.</b>	1.2 VDC
<b>Contact Material</b>	AgNi (Silver Nickel Alloy)	<b>Pick-Up Voltage Max.</b>	19.2 VDC
<b>Vibration Resistance</b>	10 to 55 Hz dual amplitude width 1.5 mm	<b>Off to On/On to Off Response Time</b>	12ms / 8ms
<b>Shock Resistances</b>	1000m/s <sup>2</sup> endurance, 100m/s <sup>2</sup> operation		
<b>Service Life</b>	Mechanical: 10,000,000 Operations at no load condition; Electrical: 100,000 Operations at rated resistive load		

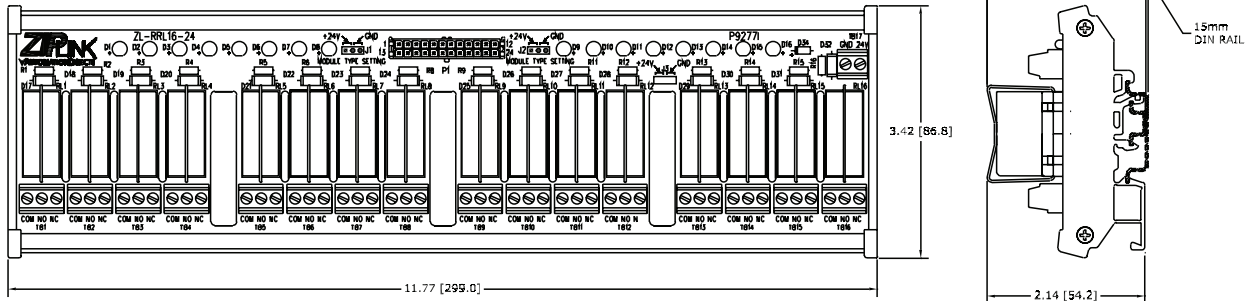
\* Use conductors rated for 60°/75°C for relay outputs.

\*\* Relay modules are reverse polarity protected and will not operate if reverse voltage is connected.

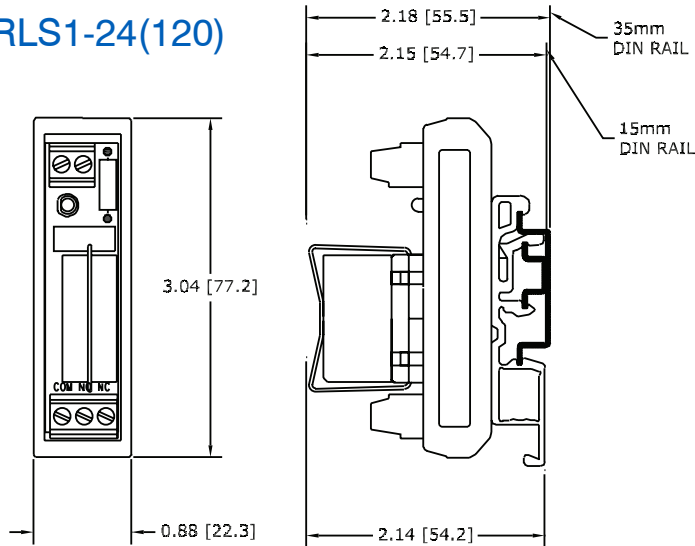
 NOTE: SEE WIRING DETAILS AND DIMENSIONAL DRAWINGS ON OUR WEB SITE AT: <http://static/manuals/ziplinks/ziplinks.html>.

# Module Dimensions

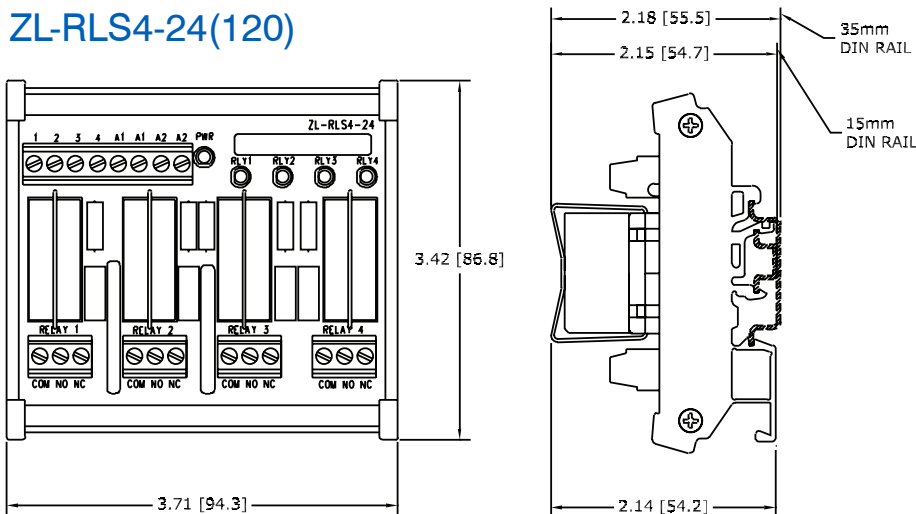
## ZL-RRL16-24-1 ZL-RRL16-24-2



## ZL-RLS1-24(120)



## ZL-RLS4-24(120)



0.098" [2.5 mm]  
0.114" [2.9 mm]

All terminal block insertion point opening dimensions are the same.

Note: Dimensions shown in Inches [mm]

## Replacement Relays

Replacement relays are offered with a 24VDC coil or 120VAC coil and are for use with the ZIPLink relay modules.

Sold in packages of 4.



ZL-RELAY-24X4



ZL-RELAY-120X4

24VDC Relay Specifications			
Contact		Coil	
<b>Current Rating</b>	30VDC @ 10A 250VAC @ 8A General Use	<b>Input Voltage Range</b>	24VDC (-20%/+30%)
<b>Contact Type</b>	1 Form C (SPDT)	<b>Maximum Continuous Coil Voltage</b>	31.2 VDC
<b>Contact Voltage (per point)</b>	250VAC/30VDC	<b>Rated Current per Coil</b>	16.7 mA (±10%) @ 24VDC
<b>Maximum Power Inductive</b>	2000VA General Use	<b>Coil Resistance</b>	1440Ω (±10%)
<b>Maximum Power Resistive</b>	AC 2000VA, DC 300W	<b>Power Consumption per Coil</b>	0.4 W
<b>Maximum Switching Voltage</b>	250VAC, 110VDC	<b>Pick Up Current Max. per Coil</b>	15mA
<b>Minimum Load</b>	10mA @ 5VDC	<b>Drop-Out Voltage Min.</b>	1.2 VDC
<b>Contact Resistance</b>	100mΩ Max @ 1A, 6VDC	<b>Pick-Up Voltage Max.</b>	19.2 VDC
<b>Contact Material</b>	AgNi (Silver Nickel Alloy)	<b>Off to On/On to Off Response Time</b>	12ms/8ms
		<b>Weight (lbs)</b>	0.11
120VAC Relay Specifications			
Contact		Coil	
<b>Current Rating</b>	30VDC @ 10A 250VAC @ 8A General Use	<b>Input Voltage Range</b>	115VAC (-20%/+30%), 50–60Hz
<b>Contact Type</b>	1 Form C (SPDT)	<b>Maximum Continuous Coil Voltage</b>	150VAC
<b>Contact Voltage (per point)</b>	250VAC/30VDC	<b>Rated Current per Coil</b>	7.65 mA (±10%) @ 115VAC 50Hz 6.30 mA (±10%) @ 115VAC 60Hz
<b>Maximum Power Inductive</b>	2000VA General Use	<b>Coil Resistance</b>	8100Ω (±10%)
<b>Maximum Power Resistive</b>	AC 2000VA, DC 300W	<b>Power Consumption per Coil</b>	0.88 W @ 50Hz 0.73 W @ 60Hz
<b>Maximum Switching Voltage</b>	250VAC, 110VDC	<b>Drop-Out Voltage Min.</b>	34.5 VAC
<b>Minimum Load</b>	10mA @ 5VDC	<b>Pick-Up Voltage Max.</b>	92VAC
<b>Contact Resistance</b>	100mΩ Max @ 1A, 6VDC	<b>Off to On / On to Off Response Time</b>	12ms/8ms
<b>Contact Material</b>	AgNi (Silver Nickel Alloy)	<b>Weight (lbs)</b>	0.11

## Installation Accessories

Accessories			
	Part #	Pcs/Pkg	Price/Pkg
<b>DIN Rail</b>	DN-R35S1	10	
<b>Angled Support Bracket</b>	DN-ASB1	50	
<b>End Bracket</b>	DN-EB35	50	

## Replacement Relays

Replacement 24VDC relays are offered for use with the ZIPLink relay modules ZL-RRL16F-24-1/-2 and ZL-RRL16HDF-24-1/-2.

Sold in packages of 4.



**ZL-RELAY-F24X4**



**ZL-RELAY-HDF24X4**

ZL-RELAY-F24x4 24VDC Relay Specifications			
Contact		Coil	
<b>Current Rating</b>	30VDC @ 8A 250VAC @ 8A General Use	<b>Input Voltage Range</b>	24VDC (-20%/+30%)
		<b>Maximum Continuous Coil Voltage</b>	31.2 VDC
<b>Contact Type</b>	1 Form C (SPDT)	<b>Rated Current per Coil</b>	16.7 mA (±10%) @ 24VDC
<b>Contact Voltage (per point)</b>	250VAC / 30VDC	<b>Coil Resistance</b>	1440Ω (±10%)
<b>Maximum Power Inductive</b>	2000VA General Use	<b>Power Consumption per Coil</b>	0.4 W
<b>Maximum Power Resistive</b>	AC 2000VA, DC 240W	<b>Pick Up Current Max. per Coil</b>	15mA
<b>Maximum Switching Voltage</b>	250VAC, 300VDC	<b>Drop-Out Voltage Min.</b>	1.2 VDC
<b>Minimum Load</b>	10mA @ 5VDC	<b>Pick-Up Voltage Max.</b>	19.2 VDC
<b>Contact Resistance</b>	100mΩ Max @ 1A, 6VDC	<b>Off to On/On to Off Response Time</b>	12ms/8ms
<b>Contact Material</b>	AgNi (Silver Nickel Alloy)	<b>Weight (lbs)</b>	0.11
ZL-RELAY-HDF24x4 24VDC Relay Specifications			
Contact		Coil	
<b>Current Rating</b>	30VDC @ 5A 250VAC @ 5A General Use	<b>Input Voltage Range</b>	24VDC (-20%/+30%)
		<b>Maximum Continuous Coil Voltage</b>	31.2 VDC
<b>Contact Type</b>	1 Form C (SPDT)	<b>Rated Current per Coil</b>	16.7 mA (±10%) @ 24VDC
<b>Contact Voltage (per point)</b>	250VAC / 30VDC	<b>Coil Resistance</b>	3388Ω (±10%)
<b>Maximum Power Inductive</b>	1250VA General Use	<b>Power Consumption per Coil</b>	0.17 W
<b>Maximum Power Resistive</b>	AC 1250VA; DC 150W	<b>Drop-Out Voltage Min.</b>	1.2 VDC (TBD)
<b>Maximum Switching Voltage</b>	250VAC, 30VDC	<b>Pick-Up Voltage Max.</b>	19.2 VDC
<b>Minimum Load</b>	10mA @ 5VDC	<b>Off to On/On to Off Response Time</b>	8ms/4ms
<b>Contact Resistance</b>	100mΩ Max @ 1A, 6VDC	<b>Weight (lbs)</b>	0.11
<b>Contact Capacity</b>	D300, 0.8 A/240VAC Pilot Duty FLA 2A @ 277VAC / 125VAC 1/8 HP @ 250VAC		
<b>Contact Material</b>	AgNi (Silver Nickel Alloy)		