



# 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) |
|                                               | <a href="#">ZL-RRL16-24-1</a>                                                                                                       | 1       | \$216.00  | 1.45         | <a href="#">ZL-RRL16-24-2</a>                           | 1       | \$216.00  | 1.45         |
| Description                                   | 16 Output Relay module, sinking, with LEDs, 24VDC coil                                                                              |         |           |              | 16 Output Relay module, sourcing, with LEDs, 24VDC 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                                                                                      |         |           |              | ON = relay de-energized, OFF = relay 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 *                                  | 12–24 AWG Solid or Stranded Conductor                                                                                               |         |           |              |                                                         |         |           |              |
| Wire Strip Length                             | 0.24–0.27 in (6–7 mm)                                                                                                               |         |           |              |                                                         |         |           |              |
| Screw Torque                                  | 4.4 in-lbs (0.5 N·m)                                                                                                                |         |           |              |                                                         |         |           |              |
| Connector Type                                | Molex Micro-Fit 3.0, 24 pin connector, example receptacle 43020-2400, Pins 43031 Series, Male                                       |         |           |              |                                                         |         |           |              |
| Connecting Cables (Sold Separately)           | Click on link: <a href="#">Wiring Selection Guides</a> .<br>Click on link: <a href="#">Connection Cable Specifications Tables</a> . |         |           |              |                                                         |         |           |              |
| Replacement Relays                            | <a href="#">ZL-RELAY-24X4</a> , Qty. 4/pkg                                                                                          |         |           |              |                                                         |         |           |              |
| Cable/Wire Clearance                          | 0.5 in (12.7 mm) required                                                                                                           |         |           |              |                                                         |         |           |              |
| Mounting Restrictions                         | Horizontal mounting only, non-corrosive environment                                                                                 |         |           |              |                                                         |         |           |              |
| Approvals                                     | File # E157382 UL, cUL 508                                                                                                          |         |           |              |                                                         |         |           |              |

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

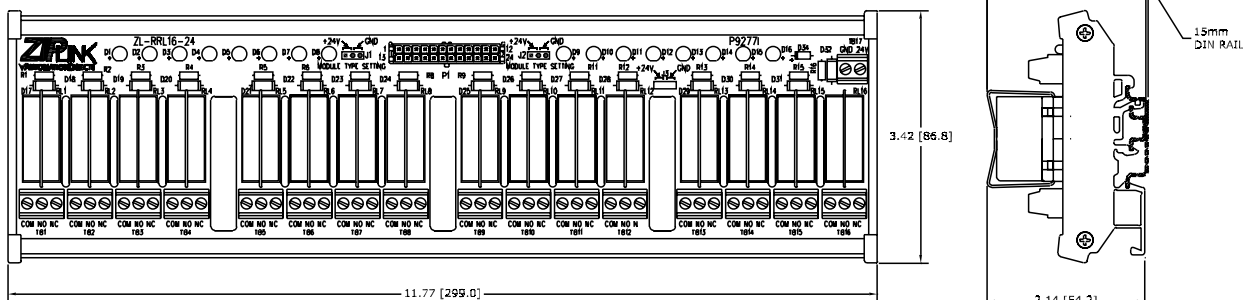


**Note:** See wiring details and dimensional drawings on our Web site at:  
<http://www.automationdirect.com/static/manuals/ziplinks/ziplinks.html>.

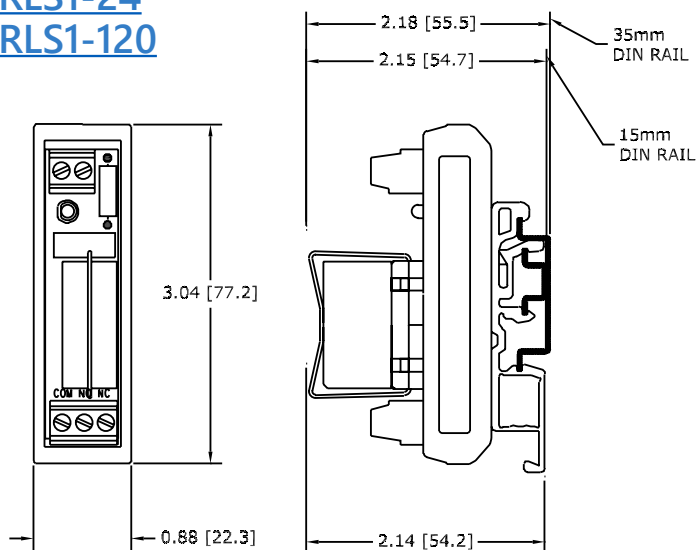


# Module Dimensions

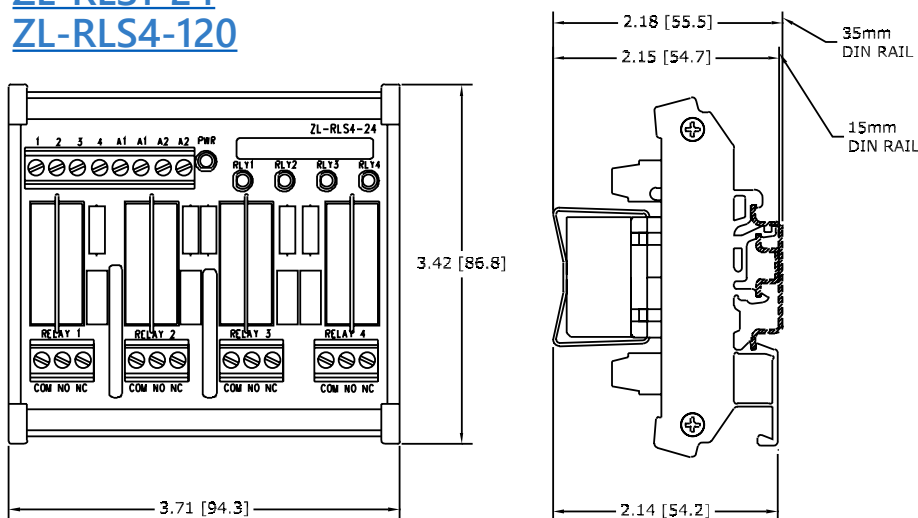
## ZL-RRL16-24-1 ZL-RRL16-24-2



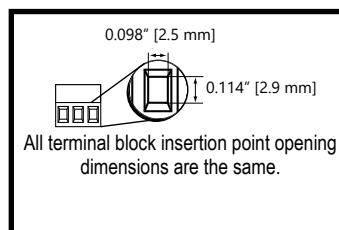
## ZL-RLS1-24 ZL-RLS1-120



## ZL-RLS1-24 ZL-RLS4-120



Note: Dimensions shown in Inches [mm]





# Accessories

## 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**  
\$21.50



**ZL-RELAY-120X4**  
\$29.00

| 24VDC Relay Specifications         |                                           |                                            |                                 |
|------------------------------------|-------------------------------------------|--------------------------------------------|---------------------------------|
| Contact                            |                                           | Coil                                       |                                 |
| <b>Current Rating</b>              | 30VDC @ 10A<br>250VAC @ 8A<br>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 300W                        | <b>Pick Up Current Max. per Coil</b>       | 15mA                            |
| <b>Maximum Switching Voltage</b>   | 250VAC, 110VDC                            | <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                            |
| 120VAC Relay Specifications        |                                           |                                            |                                 |
| Contact                            |                                           | Coil                                       |                                 |
| <b>Current Rating</b>              | 30VDC @ 10A<br>250VAC @ 8A<br>General Use | <b>Input Voltage Range</b>                 | 115VAC (-20%/+30%),<br>50–60Hz  |
|                                    |                                           | <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<br>50Hz |
|                                    |                                           |                                            | 6.30 mA (±10%) @ 115VAC<br>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<br>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      | \$39.00   |
| <b>Angled Support Bracket</b> | <a href="#">DN-ASB1</a> | 50      | \$107.00  |
| <b>End Bracket</b>            | <a href="#">DN-EB35</a> | 50      | \$67.00   |



# Accessories

## Replacement Relays

Replacement 24VDC relays are offered for use with the **ZIPLink** relay modules [ZL-RRL16F-24-1/-2](#).

Sold in packages of 4.



**ZL-RELAY-F24X4**  
**\$24.00**

| ZL-RELAY-F24x4 24VDC Relay Specifications |                                          |                                          |                        |
|-------------------------------------------|------------------------------------------|------------------------------------------|------------------------|
| Contact                                   |                                          | Coil                                     |                        |
| <b>Current Rating</b>                     | 30VDC @ 8A<br>250VAC @ 8A<br>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                   |