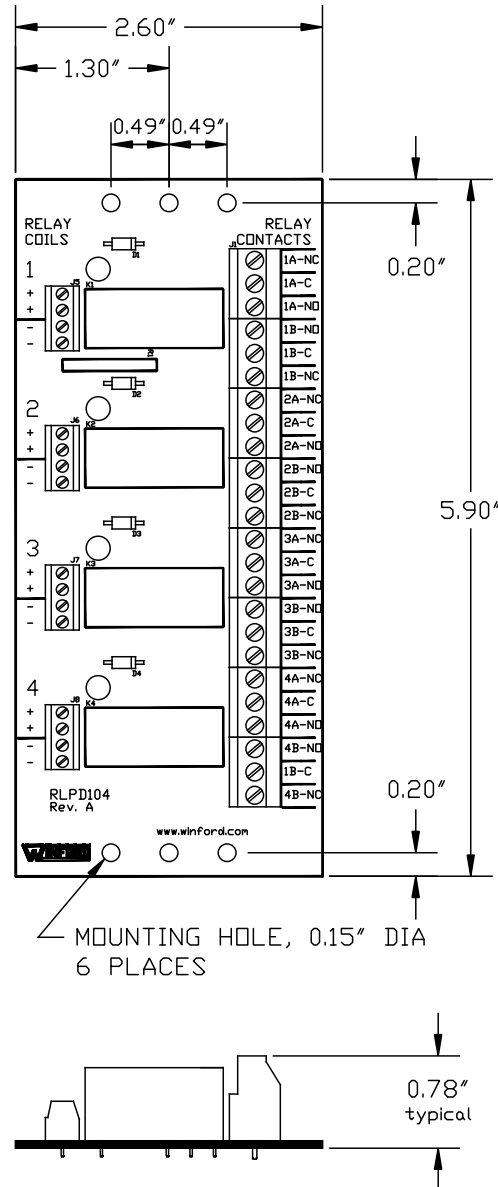


RLPD104 Rev A Relay Board Data Sheet



Overview

The RLPD104 contains four (4) DPDT relays and provides convenient screw terminal connections for the coils and contacts. The input screw terminals are wired directly to the relay coils with no active driver circuitry, and each relay channel is independent and electrically isolated. Clamping diodes are included on the relay coils to clamp the inductive spike generated when a relay is turned off. LEDs provide visual indication of the status of each relay.

Connection Reference

The external connections to the RLPD104 are described below. Only the connections for Relay #1 are listed. The remaining three relays follow the same convention.

<i>Label</i>	<i>Description</i>
(1) +	Relay #1 coil connection, positive leg; for convenience, two screw terminal connections are available (connected as a bus)
(1) -	Relay #1 coil connection, negative leg; for convenience, two screw terminal connections are available (connected as a bus)
1A-NC	Relay #1, Pole A, Normally Closed contact
1A-C	Relay #1, Pole A, Common contact
1A-NO	Relay #1, Pole A, Normally Open contact
1B-NC	Relay #1, Pole B, Normally Closed contact
1B-C	Relay #1, Pole B, Common contact
1B-NO	Relay #1, Pole B, Normally Open contact

Part Number Ordering Information

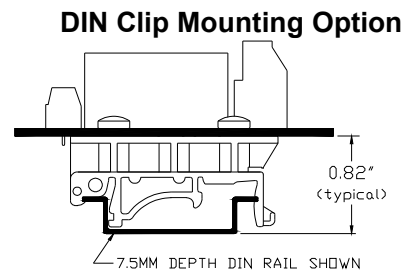
RLPD104 - -
 1 2

1. Relay Coil Voltage (DC)

- 12V
- 24V

2. Mounting Option

- FT Rubber Feet on bottom side of PCB
- DIN DIN Rail Mounting Clips



RLPD104 Stocked Part Numbers

The following part numbers represent standard options and are stocked:

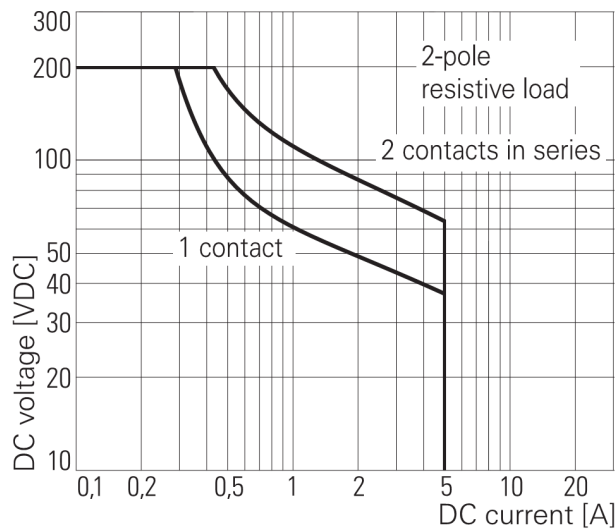
- RLPD104-12V-DIN
- RLPD104-12V-FT
- RLPD104-24V-DIN
- RLPD104-24V-FT

Specifications

Electrical Characteristics

Specification	RLPD104-12V	RLPD104-24V	Unit
Relay coil acceptable DC voltage range <i>Note: specified at 25 °C</i>	11.0 – 14.5	22.0 – 28.0	V
Nominal current per active relay <i>Note: specified at 25 °C</i>	37	19	mA
Relay contact rating for 200 VAC _{peak} (140 VAC _{rms}) <i>Note: For contact DC current rating, see the 'Maximum DC Load Breaking Capacity of Relay Contacts' chart below.</i>	5	5	A
Relay contact voltage rating	200V	200V	V (DC, or AC _{peak})

Maximum DC Load Breaking Capacity of Relay Contacts



Conductor Sizing

Relay Coil: Screw terminal wire gauge range	16-26 AWG
Relay Contacts: Screw terminal wire gauge range	12-24 AWG
Relay Contacts: Minimum wire size for full current rating <i>Note: Larger cross-sectional area is acceptable. Current rating of the screw terminals should be derated as wire size decreases.</i>	18 AWG

Operating Conditions

Ambient Temperature Range	-20°C to 70°C
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Component Part Numbers

Relays: TE Connectivity RTE24012 (12V option), RTE24024 (24V option)

Relay Venting for Full Performance

The relays on this product are shipped with a closed vent hole on top of each relay cover. By keeping the vent hole closed, the relay resists the influx of liquids. To realize the full electrical endurance of the relay, the relay manufacturer advises the removal of the vent hole nip-off pin. The paragraph below is from the relay manufacturer's documentation:

“Inside a sealed relay certain load conditions (e.g. heavy loads with generation of pronounced arcing) and/or extreme ambient conditions can generate aggressive atmosphere (diffusion, arc ionization), corrosive condensate or overpressure. To avoid such conditions and a possible reduction of electrical endurance a gas exchange with the atmosphere is advised. To allow the gas exchange, break off the vent hole or nip-off pin.”

Source: TE Connectivity document *Automotive, General Purpose and Signal Relays – Definitions*, p.19 (ENG_SS_Definitions_Relays_0712.pdf)

Note About Inductive Loads

If the relay board is used to switch an inductive load, such as a solenoid coil or a larger relay, it is recommended that a "snubber" circuit be implemented to reduce electromagnetic interference with nearby electronics and reduce possible arcing across the relay contacts as they open. For example, if a DC solenoid coil is being controlled, each time the coil is switched off, the magnetic field around the coil collapses and creates a high-voltage reverse-polarity spike. If this is not absorbed, it may cause arcing as the relay contacts open as well as create an electromagnetic pulse that could interfere with nearby electronics. The appropriate snubber circuit will vary widely depending on the type of load and supply current utilized. In order to remain general-purpose, no load snubber circuits are included on the relay board. For a DC inductive load, typically a diode is placed across the load such that the reverse-polarity spike is conducted and absorbed. Care should be taken to research and select an appropriate snubber circuit for each situation.

*Note that the above paragraph applies to the **loads** connected through the relay **contacts**. The RLPD104 **does** include a clamping diode to absorb the reverse spike generated by the **relay coils** themselves.*

Notices

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