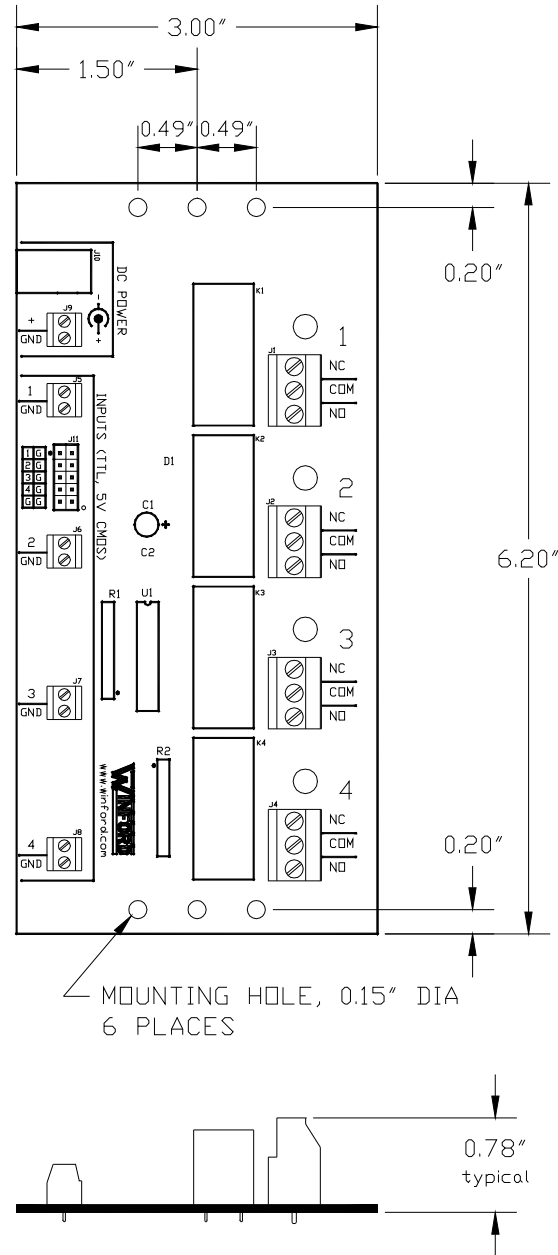


**RLY104 Datasheet**

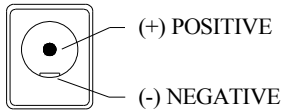


**Overview**

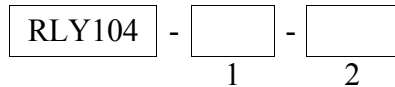
The RLY104 provides four SPDT relays with convenient screw terminal connections for the inputs and contacts. It includes active driver circuitry allowing lower current input signals (such as 5V TTL) to be used (in contrast to the RLP104 which does not include driver circuitry). LEDs provide visual indication on the status of each relay.

## DC Power Jack

The DC power jack accepts connectors with a 2.1mm inside diameter and 5.5mm outside diameter. The jack requires a center-positive supply.



## Part Number Ordering Information

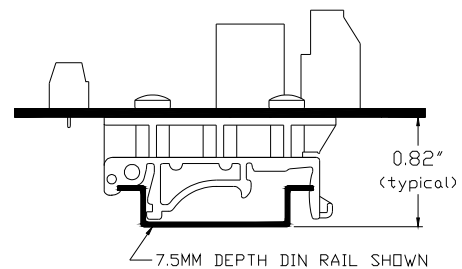


### 1. Relay Coil Voltage (DC)

- 5V
- 12V
- 24V

### 2. Mounting Option

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



**DIN Clip Mounting Option**

## RLY104 Stocked Part Numbers

The following part numbers represent standard options and are stocked:

- RLY104-5V-FT      • RLY104-12V-FT      • RLY104-24V-FT
- RLY104-5V-DIN    • RLY104-12V-DIN    • RLY104-24V-DIN

For parts other than RLY104-\*, please see the other datasheets for a list of stocked part numbers.

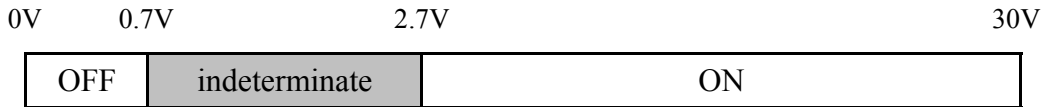
## Electrical Characteristics

Specifications at 25°C

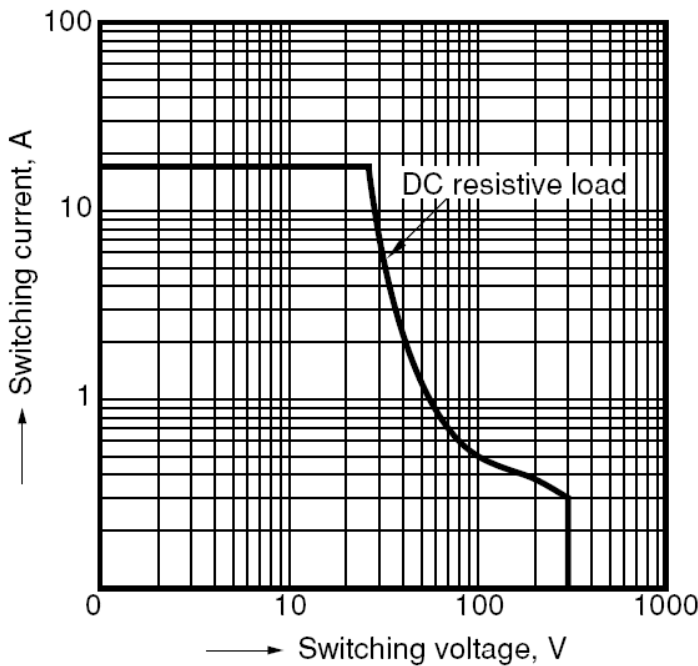
<i>Specification</i>	<i>RLY104-5V</i>	<i>RLY104-12V</i>	<i>RLY104-24V</i>	<i>Unit</i>
DC Power Supply Input Range	4.8 - 7.5	11 - 16	20 - 28	V
Nominal relay coil current per activated relay (Power supply: RLY104-5V=5.0V, RLY104-12V=12.0V, RLY104-24V=24.0V)	65	37	21	mA
Maximum leakage current (power supply current with no relays activated)	0.1			mA
Minimum turn-off threshold for input control signals (see diagram)	0.7			V

<i>Specification</i>	<i>RLY104-5V</i>	<i>RLY104-12V</i>	<i>RLY104-24V</i>	<i>Unit</i>
Maximum turn-on threshold for input control signals (see diagram)	2.7			V
Maximum allowable input control signal voltage	30			V
Input control signal current requirement, typical (per channel) Input signal @ 2.7V Input signal @ 5.0V	0.78 1.95			mA
Relay contact rating @ 250 V AC	15			A

### Input Control Signal Thresholds Diagram



### DC Breaking Capacity of Relay Contacts



### Operating Conditions

Ambient Temperature Range	-25°C to 75°C
Relative Humidity Range - not freezing or condensing	5% to 85% RH

### Screw Terminal Wire Sizes

- Input control signals and Power: 16-26 AWG
- Relay contacts: 12-24 AWG

## Component Part Numbers

- Relays: Panasonic Electric Works ALZ12Fxx (xx=voltage)
- Relay driver: ULN2803A

## 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 snubber circuits are included on the relay board for the loads. 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.

## Notice

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