

# WR-6161-xx - Mechanical Latching Relay 1-Pole HID relay



Project Name: \_\_\_\_\_

Part Numbers: \_\_\_\_\_ Date: \_\_\_\_\_

## Features

- Mechanical Latching Relays
- Status Indicator
- Manual Override Lever
- Option for Auxiliary Contact Relay

The Most Reliable Relays for Modern Lighting Solutions

The core of our panel systems is the HID (High In-Rush Duty) relay. These Universal Douglas relays have been the industry standard for decades because durable design provides reliable control for lighting and plugs loads and makes safety a priority. These mechanically latching relays require only a momentary pulse to change the state and requires **no energy** to maintain the state. They are available with an auxiliary contact output for low voltage status feedback to systems by others.

High “in-rush” currents can be 50 to 100 times the normal operating current and will damage any connected switching component not designed for that current. Our relays are rigorously tested, and UL certified to withstand excess in-rush currents.

**Typical Applications:** upto 20A lighting load ON/OFF switching

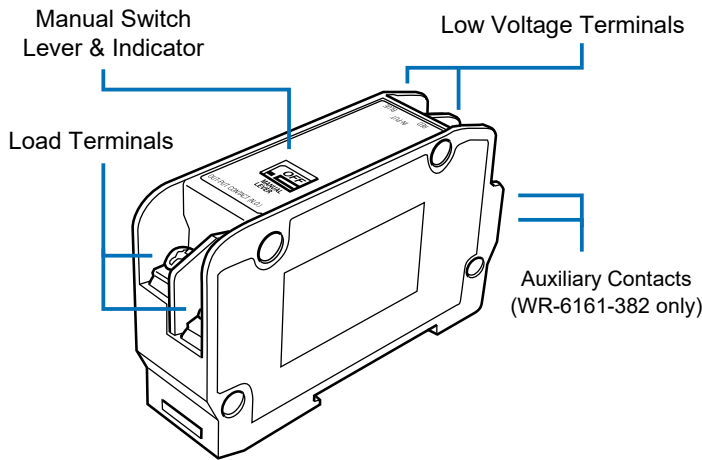
PART NUMBER	DESCRIPTION
WR-6161	1-pole HID relay 20A: 120/277/347VAC
WR-6161-382	1-pole HID relay (auxiliary contact) 20A: 120/277/347VAC, Auxiliary contact: 1A, 125VAC


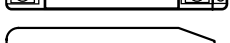

## WR-6161 HID Relay

## Dimensions

Inches [mm]

Relays mount to a snap rail built into Douglas PWEx series relay panels



WR-6161		0.98"
WR-6161-382		(25)
WR-6161		2.4"
WR-6161-382		(60)

\*Patent Pending

Rev 8/1/2022

Douglas Lighting Controls

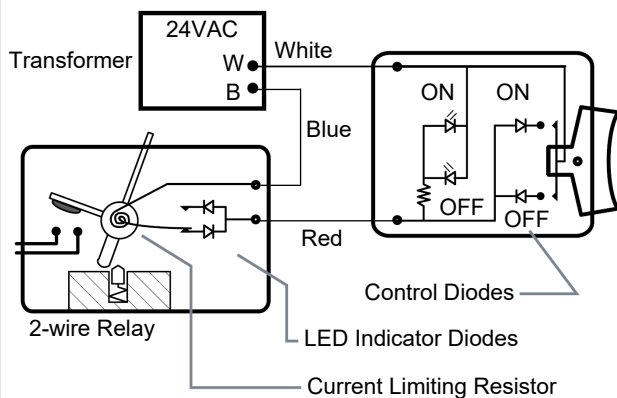
## RELAY TECHNOLOGY

Panasonic relays utilize an ingenious control method that permits simple and minimal wiring. All functions for low voltage control: ON, OFF, indication and location are provided with only a 2-wire connection of which one is often a common.

## OPERATION

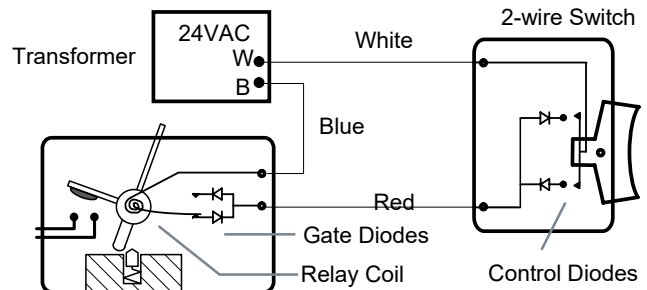
- A negative pulse turns the relay ON and a positive pulse turns it OFF. Using a diode, an AC signal can be rectified to turn the relay either ON or OFF. Douglas switches have 2 diodes built into the switch to provide the ON and OFF signals.
- The relay has 2 similar diodes built inside that are in series with the relay coil. The diodes in the relay act as gates for the switch signal.
- To turn the relay ON or OFF, the rocker switch completes the circuit by selecting the ON or OFF diode. If the diode selected is in the same direction as the gate diode in the relay, the relay will switch. If the gate diode is not in the correct direction, then nothing will happen since the relay is already in the correct state for the action selected by the switch. When the switch is released, a spring returns it to the central neutral position.
- Indication (ON state) and location (OFF state) are obtained by utilizing LED diodes built into the switch. Only the LED which is connected in the same direction as the gate diode in the relay will light. Although the LED current passes through the relay coil, it is not large enough to cause the relay to trip. However, there is a limit: the maximum number of LED switches that can be connected to the same relay is 6.
- For additional convenience (especially during installation) all standard models have a manual control lever and indicator permitting a nonelectrical method of switching and status check at the panel.

### Detailed Relay / Switch Circuit\*

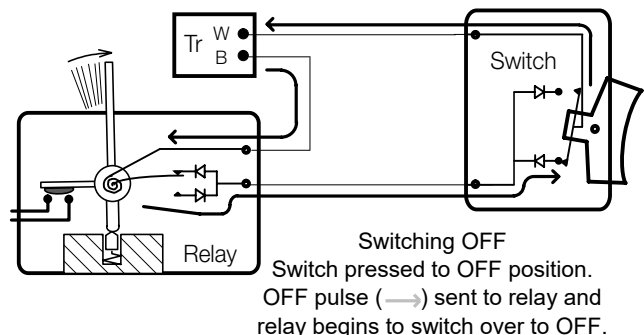
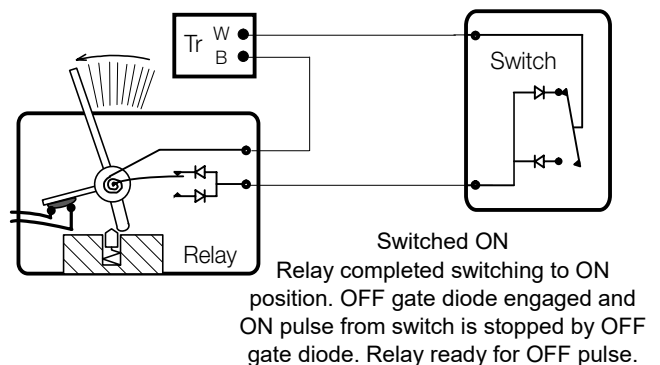
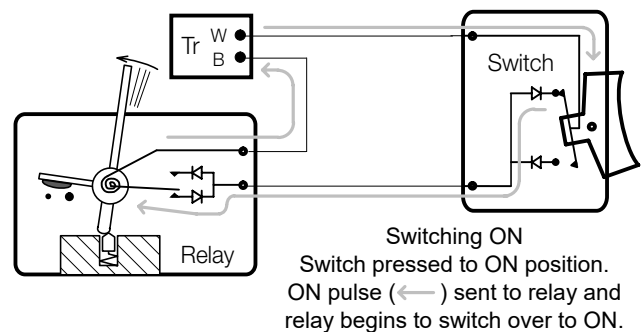


\* LED Switch circuit actually not as shown. Switch is functionally similar except rocker switch is replaced with single push button.

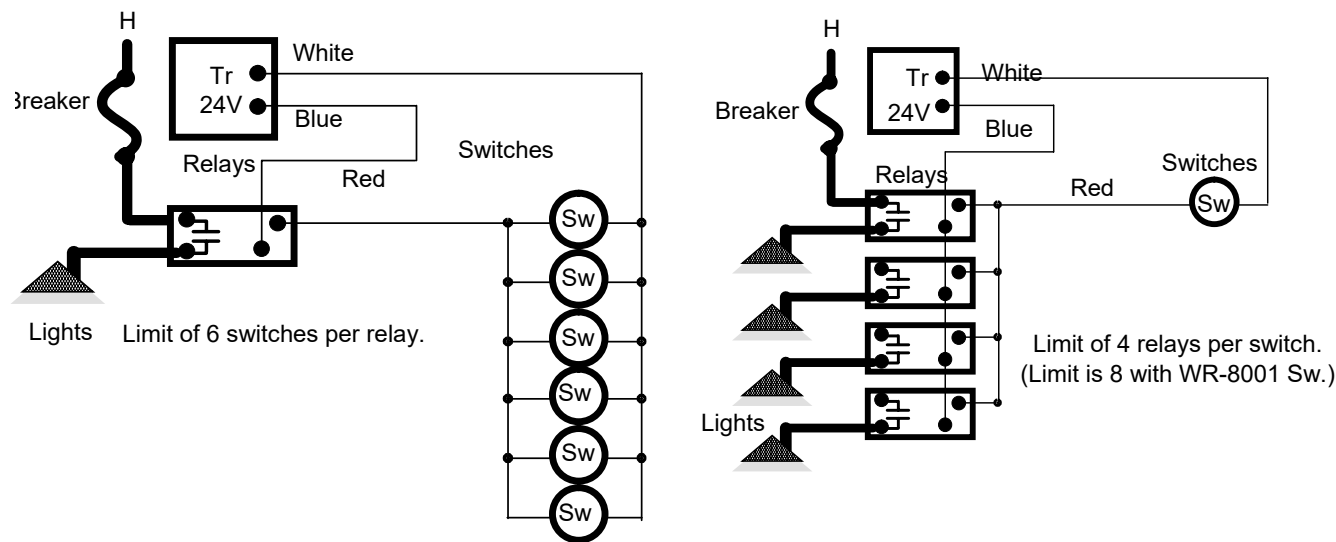
### Detailed Relay / Switch Circuit



Latch to lock relay ON or OFF (actually done with magnetics)



CONNECTIONS



Technical Details

CONTROL INPUT	<ul style="list-style-type: none"><li>• Class 2 circuit</li><li>• 0.350A (350mA)</li><li>• 24V reversible polarity pulse</li></ul>	<ul style="list-style-type: none"><li>• Input terminals: #16 - #20AWG</li><li>• Output terminals: #10 - #14AWG</li></ul>
LISTINGS	<p>UL</p> <ul style="list-style-type: none"><li>• 30A 300VAC General Use</li><li>• 20A 300 VAC Standard Ballast</li><li>• 16A 277VAC Electronic Ballast</li><li>• 2400W 120VAC Tungsten</li><li>• 1/2HP at 110-125VAC</li><li>• 1-1/2HP at 220-277VAC</li><li>• SCCR 18,000A 277VAC</li></ul>	<p>CSA</p> <ul style="list-style-type: none"><li>• 347VAC General Use</li><li>• 2400W 120VAC Tungsten</li><li>• 20A 347VAC Ballast</li></ul>
OUTPUT	<ul style="list-style-type: none"><li>• 60,000 operations with 20A load, 2000A inrush @20 times / min. switch speed</li></ul>	
ENVIRONMENT	<ul style="list-style-type: none"><li>• Indoors, stationary, non-vibrating, non-corrosive atmosphere and non-condensing humidity</li><li>• Ambient temperature: 15°F to 120°F (-10°C to 50°C)</li></ul>	
WARRANTY	<ul style="list-style-type: none"><li>• Standard 5-years</li></ul>	