



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

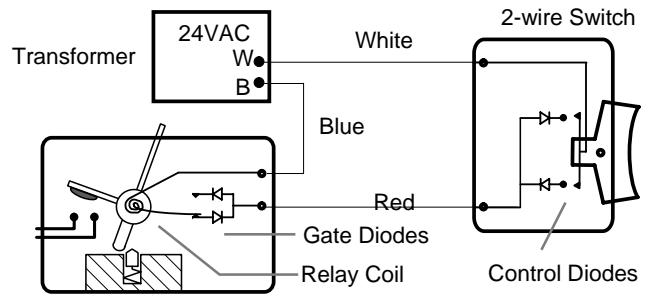
## RELAY TECHNOLOGY

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.

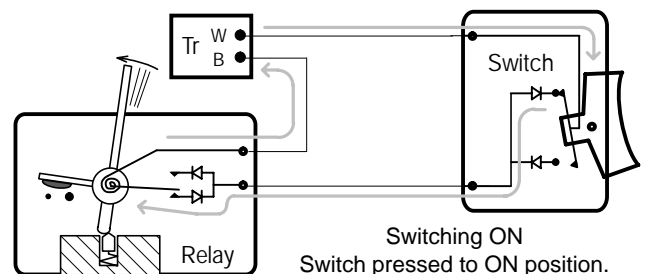
## OPERATION

- x 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.
- x 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.
- x 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.
- x 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.
- x 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.

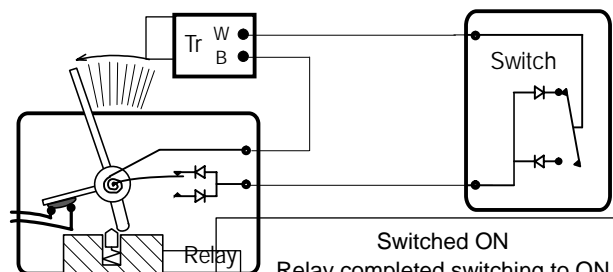
## Detailed Relay / Switch Circuit



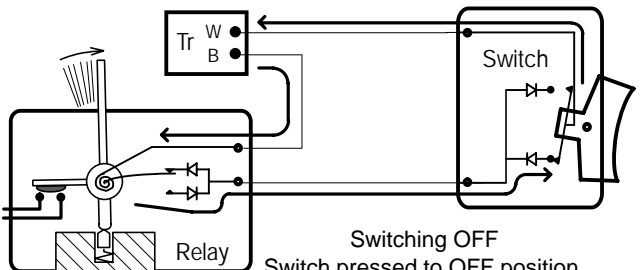
Latch to lock relay ON or OFF (actually done with magnetics)



Switching ON  
Switch pressed to ON position.  
ON pulse (←) sent to relay and relay begins to switch over to ON.

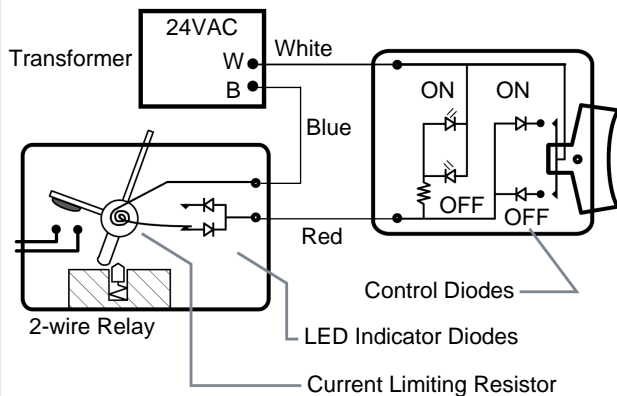


Switched ON  
Relay completed switching to ON position. OFF gate diode engaged and ON pulse from switch is stopped by OFF gate diode. Relay ready for OFF pulse.



Switching OFF  
Switch pressed to OFF position.  
OFF pulse (→) sent to relay and relay begins to switch over to OFF.

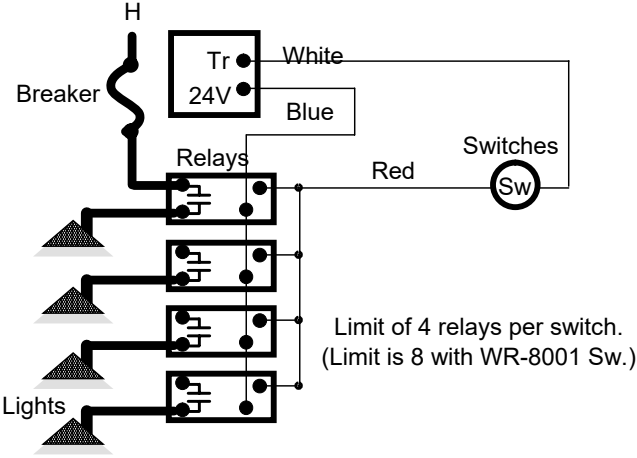
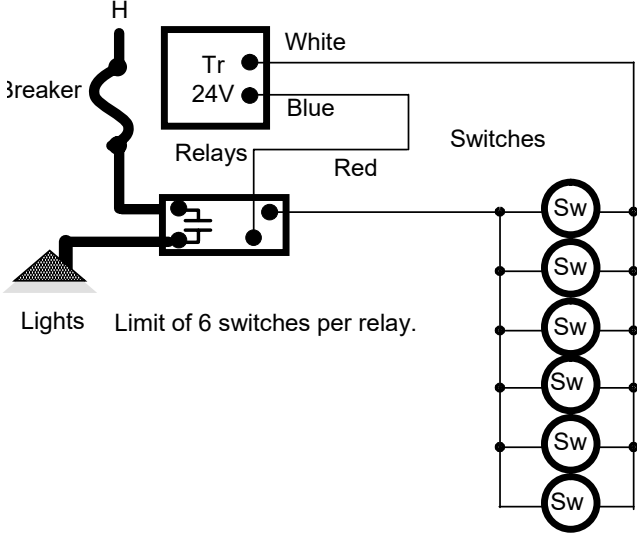
## Detailed Relay / Switch Circuit\*



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

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CONNECTIONS



Technical Details

<b>CONTROL INPUT</b>	<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>
<b>LISTINGS</b>	<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>
<b>OUTPUT</b>	<ul style="list-style-type: none"> <li>60,000 operations with 20A load, 2000A inrush @20 times / min. switch speed</li> </ul>	
<b>ENVIRONMENT</b>	<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>	
<b>WARRANTY</b>	<ul style="list-style-type: none"> <li>Standard 5-years</li> </ul>	

\*Patent Pending

Rev 8/24/2022

Douglas Lighting Controls