

# WRL SERIES PHASE CONTROL RELAY

UL listed CSA recognized



- **Monitors**
  - Phase Sequence**
  - Loss of Any Phase even if Induced Voltage reaches 95% of Nominal Voltage**
- **Under Voltage Detection**
- **Trip Delay Timer Built-in**
- **LED Relay Status Indicator**



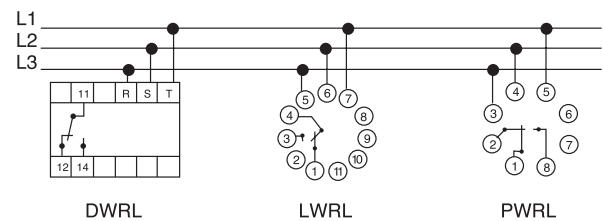
## MODE OF OPERATION:

The WRL Phase Control Relay monitors the sequence loss or reversal of three phase power supplies. The output relay is energized when the phase sequence is correct and the phase voltage is above the voltage threshold set by the front knob. The output relay will de-energize after 2 seconds (built-in timer) when the phase voltage drops under the voltage threshold or when phase sequence is lost. The WRL Series is available in three voltage ranges: 230 VAC, 380 VAC and 480 VAC.

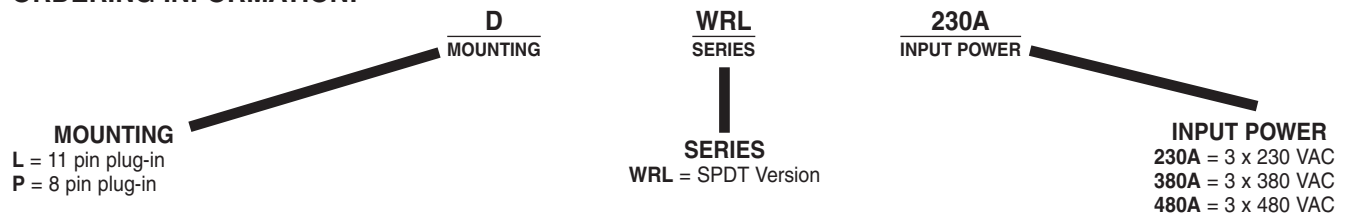
## SPECIFICATIONS:

<b>Input Power</b> .....	3 x 230 (50/60 Hz)
	3 x 380 (50/60 Hz)
	3 x 480 (50/60 Hz)
<b>Maximum voltage</b> .....	3 x 280 VAC
	3 x 420 VAC
	3 x 530 VAC
<b>Minimum voltage</b> .....	3 x 160 VAC
	3 x 260 VAC
	3 x 340 VAC
<b>Threshold adjustment range</b> .....	160 to 230 VAC
	260 to 380 VAC
	340 to 480 VAC
<b>Max power consumption</b> .....	2 VA
<b>Dial accuracy</b> .....	±10%
<b>Temperature De-rating</b> .....	±0.04%/°C
<b>Dead Band</b> .....	4% of 480 VAC
<b>Response Time</b> .....	300 ms on Make
	2 sec on Break
<b>Output</b>	
SPDT Version (WRL) Series) .....	10 Amp 250 VAC
<b>Max. power consumption</b> .....	2000 VA
<b>Max. voltage</b> .....	250 VAC
<b>Electrical life</b> .....	2 x 10 <sup>7</sup> operations
<b>Mechanical life</b> .....	1 x 10 <sup>6</sup> operations
<b>Operating temperature</b> .....	-10°C to +60°C
<b>Weight</b> .....	3.5 oz. (100g)

## WIRING DIAGRAM:



## ORDERING INFORMATION:

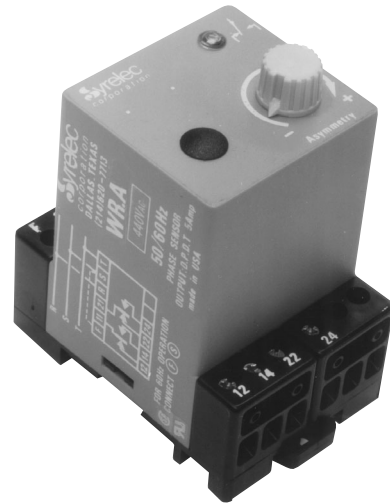


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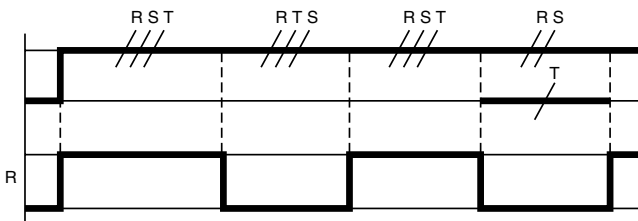
# WRA SERIES PHASE CONTROL RELAY

UL listed CSA recognized (220 VAC Version Only)



- **Monitors**
  - Phase Sequence**
  - Loss of Any Phase even if Induced Voltage reaches 95% of Nominal Voltage**
- **LED Relay Status Indicator**
- **SPDT 10 Amp Relay Output**

**MODE OF OPERATION:**



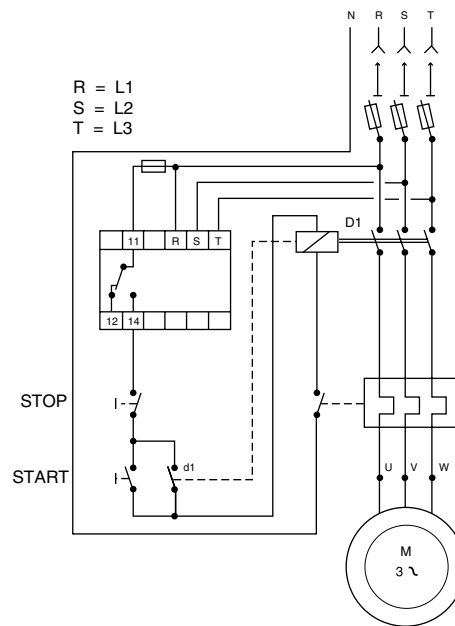
The WRL Phase Control Relay monitors the sequence loss or reversal of three phase power supplies. The output relay is energized when the phase sequence is correct and is de-energize when the phase sequence is wrong or one phase is lost. It monitors the symmetry of 3 voltages and a loss of phase even when the voltage is reinjected through a machine. The rate of asymmetry is controlled between 5% and 15% by a top mounted potentiometer.

**SPECIFICATIONS:**

<b>Input Power Directly</b> .....	3 x 220 60 Hz	
<b>from controlled voltage ±15%</b> .....	3 x 380 60 Hz	
	3 x 440 60 Hz	
<b>Power consumption</b> .....	3 VA at 220 V	
<b>Output</b> .....	SPDT relay	
<b>Contact material</b> .....	AgCdO	
<b>Maximum Loading</b> .....	10 AC resistive	8A DC inductive
<b>Maximum switching voltage</b> ..	250 VAC	250 VDC
<b>Relay max. power rating</b> .....	220 VA	80 W
<b>Mechanical life of relay</b> .....	30 x 10 <sup>6</sup> operations	
<b>Electrical life of relay</b> .....	2 x 10 <sup>6</sup> operations at 2200VA resistive load	
<b>Operating temperature</b> .....	+14°F to +140°F	-10°C to +60°C
<b>Weight</b> .....	7 oz. (200g)	

**Note:** The alarm threshold adjustment is 5% to 15% of asymmetry between the phases. The initial response time is .1 seconds at 5% asymmetry and 1 second at 15% after input power is applied. When a phase loss or failure occurs, the "off delay" response time is 100 ms.

**WIRING DIAGRAM:**



DWRA	11	12	14	R	S	T
LWRA	1	4	3	5	6	7
PWRA	1	2	8	3	4	5

**ORDERING INFORMATION:**

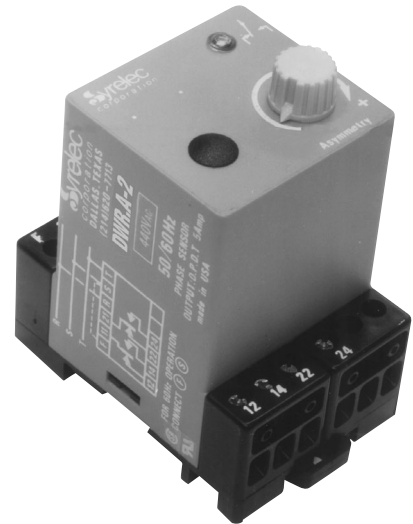


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# WRA 2 SERIES PHASE CONTROL RELAY

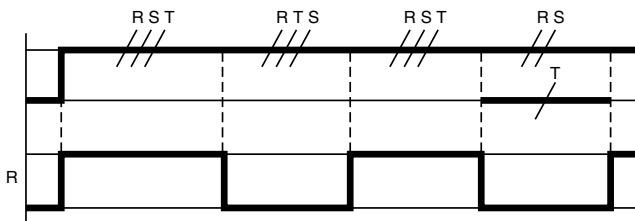
UL listed CSA recognized (220 VAC Version Only)



- **Monitors**  
**Phase Sequence**  
**Loss of Any Phase even if Induced Voltage reaches 95% of Nominal Voltage**
- **LED Relay Status Indicator**
- **DPDT 5 Amp Relay Output**

2

**MODE OF OPERATION:**



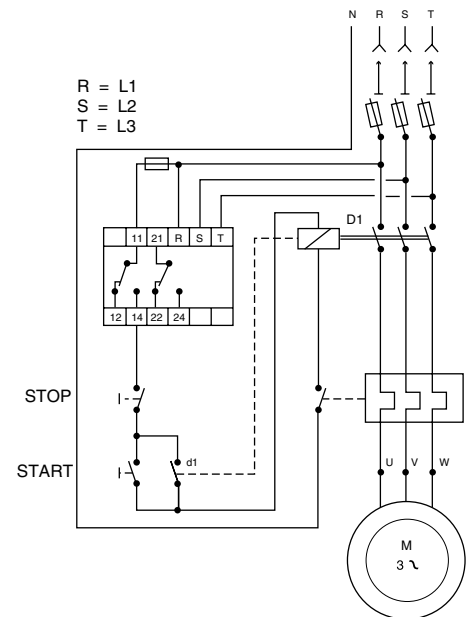
The WRA 2 Phase Control Relay monitors the sequence loss or reversal of three phase power supplies. The output relay is energized when the phase sequence is correct and is de-energize when the phase sequence is wrong or one phase is lost. It monitors the symmetry of 3 voltages and a loss of phase even when the voltage is reinjected through a machine. The rate of asymmetry is controlled between 5% and 15% by a top mounted potentiometer.

**SPECIFICATIONS:**

- Power consumption** ..... 3 VA at 220 V
- Output** ..... DPDT relay
- Contact material** ..... AgCdO
- Maximum Loading** ..... 5 A AC resistive      1 A DC inductive
- Maximum switching voltage** .. 250 VAC                      250 VDC
- Relay max. power rating** ..... 1250 VA                      30 W
- Mechanical life of relay** ..... 30 x 10<sup>6</sup> operations
- Electrical life of relay** ..... 2 x 10<sup>6</sup> operations at 2200 VA resistive load
- Operating temperature** ..... +14°F to +140°F      -10°C to +60°C
- Weight** ..... 7 oz. (200g)

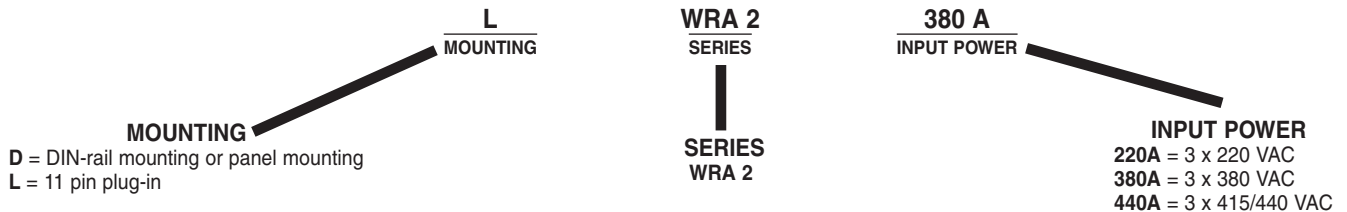
**Note:** The alarm threshold adjustment is 5% to 15% of asymmetry between the phases. The initial response time is .1 seconds at 5% asymmetry and 1 second at 15% after input power is applied. When a phase loss or failure occurs, the "off delay" response time is 100 ms.

**WIRING DIAGRAM:**



DWRA 2	11	12	14	R	S	T	21	22	24
LWRA 2	1	4	3	5	6	7	11	8	9

**ORDERING INFORMATION:**

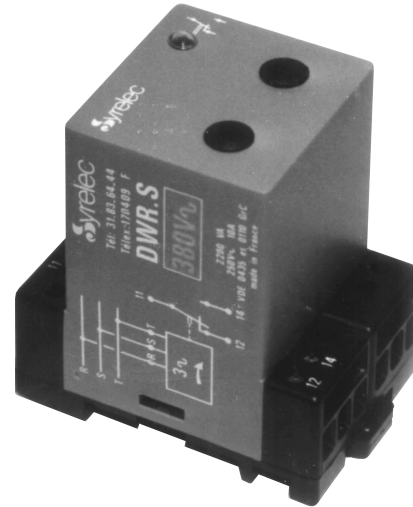


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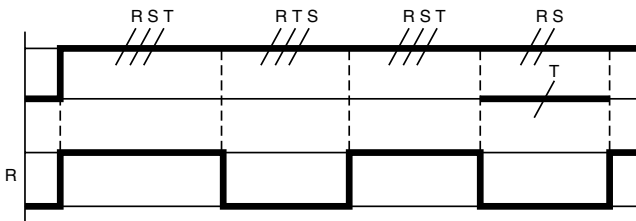
# WRS SERIES PHASE CONTROL RELAY

UL listed CSA recognized



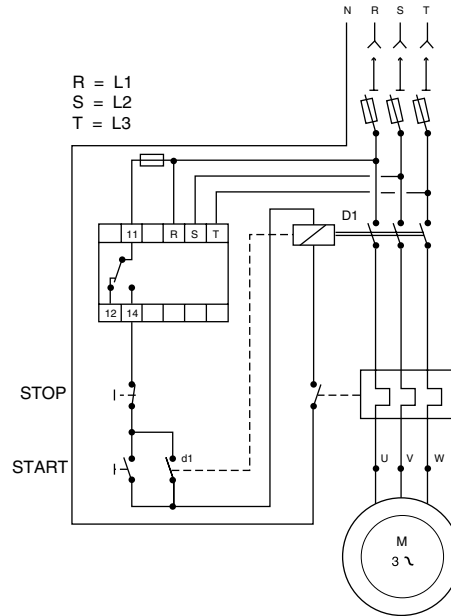
- **Monitors**  
    **Phase Sequence**  
    **Loss of Any Phase**
- **LED Indicator**
- **10 Amp SPDT Output**
- **Low Cost**

**MODE OF OPERATION:**



The WRS Phase Control Relay monitors the sequence loss or reversal of three phase power supplies. The output relay is energized when the phase sequence is correct and is de-energize when the phase sequence is wrong or one phase is lost.

**WIRING DIAGRAM:**



**SPECIFICATIONS:**

<b>Input Power Directly</b> . . . . .	3 x 220 60 Hz	
<b>from controlled voltage ±15%</b> . . . . .	3 x 380 60 Hz	
	3 x 440 60 Hz	
<b>Power consumption</b> . . . . .	3 VA at 220 V	
<b>Output</b> . . . . .	SPDT relay	
<b>Contact material</b> . . . . .	AgCdO	
<b>Maximum Loading</b> . . . . .	10 AC resistive	1 A SC inductive
<b>Maximum switching voltage</b> . . . . .	250 VAC	250 VDC
<b>Relay max. power rating</b> . . . . .	2200 VA	30 W
<b>Mechanical life of relay</b> . . . . .	30 x 10 <sup>6</sup> operations	
<b>Electrical life of relay</b> . . . . .	2 x 10 <sup>6</sup> operations at 2200 VA resistive load	
<b>Operating temperature</b> . . . . .	+14°F to +140°F	-10°C to +60°C
<b>Weight</b> . . . . .	7 oz. (200g)	

DWRS	11	12	14	R	S	T
LWRS	1	4	3	5	6	7
PWRS	1	2	8	3	4	5

**ORDERING INFORMATION:**



D = DIN-rail mounting or panel mounting  
L = 11 pin plug-in  
P = 8 pin plug-in

**INPUT POWER**  
220A = 3 x 220 VAC  
380A = 3 x 380 VAC  
440A = 3 x 415/440 VAC

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