

# VOLTAGE BAND (WINDOW)

## 12-480V | VWKP SERIES



12-120V

240-480V

- ◆ Monitors AC single phase and DC voltages
- ◆ Provides voltage band (window) protection
- ◆ True RMS voltage measurement ensures more accurate sensing
- ◆ Wide range of user-adjustable Over Voltage and Under Voltage settings
- ◆ Adjustable time delay on drop-out of 0.1-10 seconds
- ◆ LED indicates output relay status
- ◆ Compact plug-in case utilizing industry standard 8 pin octal socket
- ◆ Pilot duty rating
- ◆ 10A output contacts



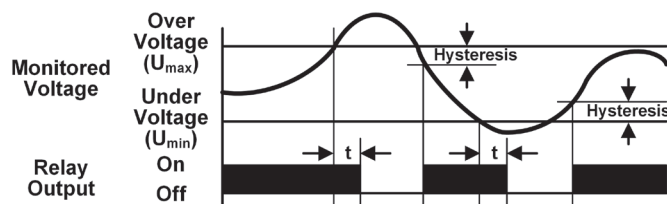
with appropriate socket



Better. By Design.

Voltage Band Relays provide protection to equipment that is required to operate within an upper and lower voltage limit. As long as the operating voltage remains within an Over and Under Voltage range, the internal relay stays energized. If the operating voltage falls outside this range, the relay will drop-out.

The over voltage setting ( $U_{max}$ ) is adjustable across the full range as shown in the table below. The under voltage setting ( $U_{min}$ ) is adjustable from 75-95% of the over voltage setting ( $U_{max}$ ). The relay energizes (and the LED is Red) when the monitored voltage is between the over and under voltage settings. The relay de-energizes (and the LED is Green) when the monitored voltage falls outside the over or under voltage settings for a period longer than the drop-out time delay ( $t$ ), which is adjustable from 0.1-10 seconds. The relay re-energizes when the monitored voltage returns to a value between the over and under voltage settings for a period longer than the pick-up time delay, which is fixed at 0.5 seconds.



Adjustable Overvoltage & Undervoltage Settings  
Adjustable Time Delay on Drop-Out of 0.1 - 10 Seconds

NOMINAL VOLTAGE	OVER VOLTAGE ( $U_{MAX}$ )	UNDER VOLTAGE ( $U_{MIN}$ )	PRODUCT NUMBER	WIRING/SOCKET
12V DC 24V DC 48V DC 110V DC	9-15V DC 18-30V DC 36-60V DC 83-138V DC	7-14V DC 14-28V DC 27-57V DC 62-130V DC	VWKP012D VWKP024D VWKP048D VWKP110D	8 Pin Octal <b>70169-D</b>  MONITORED VOLTAGE <b>DIAGRAM 214</b>
120V AC	90-150V AC	68-142V AC	VWKP120A	8 Pin Octal <b>70169-D</b>  MONITORED VOLTAGE <b>DIAGRAM 213</b>
240V AC 480V AC	180-300V AC 360-600V AC	135-285V AC 270-570V AC	VWKP240A VWKP480A▲	8 Pin Octal <b>70169-D</b>  MONITORED VOLTAGE <b>DIAGRAM 150</b>

▲ Requires a 600V-rated socket

Sockets & Accessories available

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### APPLICATION DATA

**Voltage Tolerance:**

±50% of nominal AC (50-60Hz, ±5%) or DC voltage  
No separate input voltage required since unit is powered by monitored voltage.

**Load (Burden):** Less than 2VA (12-120V); 30VA (240V & 480V)

**Voltage Settings:**

Over Voltage ( $U_{max}$ ): Across full range as shown in the product selection table

Under Voltage ( $U_{min}$ ): 75-95% of Over/Under Voltage Setting

**Setting Accuracy:** Maximum Setting (Adjustable): +5%, -0%  
Minimum Setting (Adjustable): +0%, -50%  
Fixed Voltage Setting: ±2%

**Repeatability:** <1%

**Sensing Accuracy:** Constant conditions within specifications: ±2%  
Variable conditions within specifications: ±5%  
(percent base on nominal voltage)

**Temperature:** Operating: -28° to 65°C (-18° to 149°F)  
Storage: -40° to 85°C (-40° to 185°F)

**Indicator LED:** Red when Relay is energized; Green when Relay is Off.

**Reset:** Automatic

**Response Times:**

Restart: 1 second (240 & 480V only)

Pick-up: 0.5 Seconds

Drop-out (t): Adjustable 0.1 -10 Seconds

**Output Contacts:**

10A @ 240V AC, 7A @ 30V DC, 1/4HP @ 120/240V AC, C300

**Life:**

Mechanical: 10,000,000 operations

Full Load: 100,000 operations

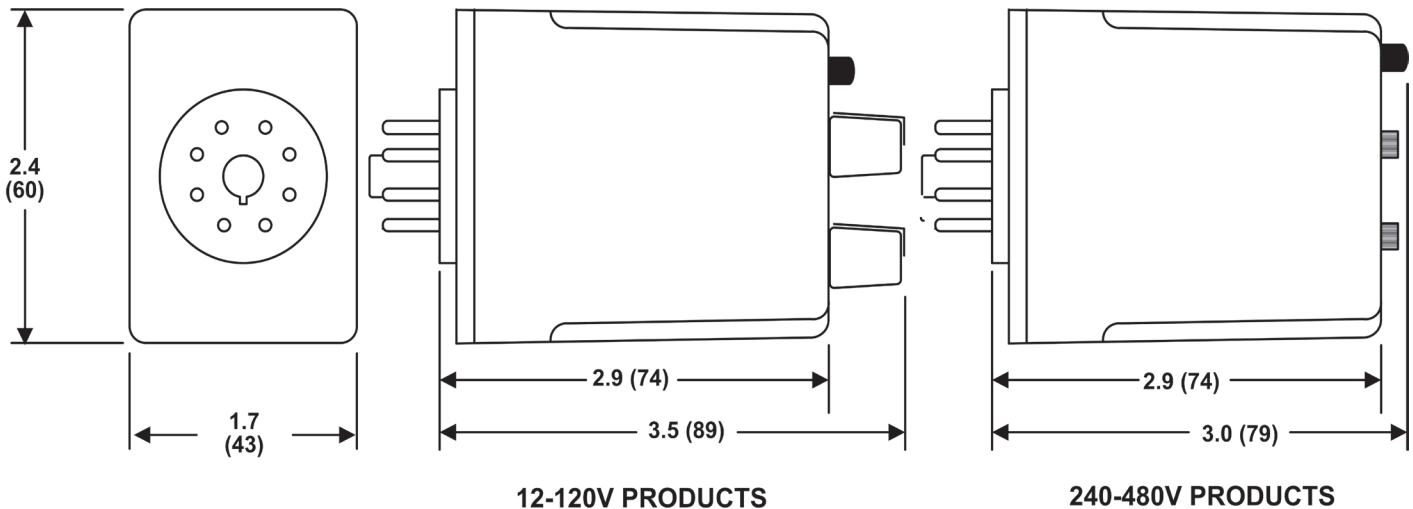
**Transient Protection:**

2000V per IEC 61000-4-5 Level 3 (±2kV)

**Approvals:**

with appropriate socket  
File #E109466

### DIMENSIONS



All Dimensions in  
Inches (Millimeters)