

# OVER/UNDER VOLTAGE | ADJUSTABLE TIME DELAY ON PICK-UP & DROP-OUT

## 208-240V | VAKPU SERIES



- ◆ Monitors 208-240V AC single phase voltage
- ◆ Provides over/under voltage protection
- ◆ Wide range of user-adjustable Pick-Up and Drop-Out settings
- ◆ Independantly adjustable time delay on Pick-Up and Drop-Out
- ◆ LED indicates output relay status
- ◆ Compact plug-in case utilizing industry standard 8 pin octal socket
- ◆ 10A SPDT output contacts

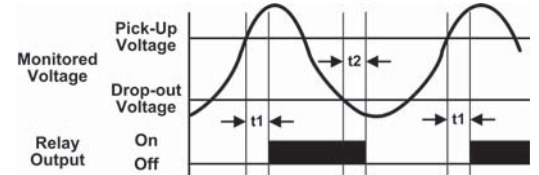


with appropriate socket

Over/Under Voltage Relays provide protection to equipment where an over or under voltage condition is potentially damaging. They are designed to operate when the operating voltage reaches a preset value and drop-out when the operating voltage drops to a level below the preset value.

The VAKPU can be used to monitor any 208, 220 or 240V AC single phase voltage.

The pick-up voltage setting is user-adjustable from 85-115% of the nominal voltage setting. The drop-out setting is adjustable from 80-95% of the pick-up setting. The relay energizes when the monitored voltage is above the pick-up setting for a period longer than the adjustable pick-up time delay ( $t_1$ ) of 0.1-10 seconds. The relay de-energizes when the monitored voltage is below the drop-out setting for a period longer than the drop-out time delay ( $t_2$ ), which is adjustable from 0.1-10 seconds. The pick-up time ( $t_1$ ) and drop-out time ( $t_2$ ) are independently adjustable.



### Adjustable Nominal Voltage Setting 208 to 240V AC Adjustable Time Delay on Pick-up & Drop-out from 0.1 - 10 Seconds

NOMINAL VOLTAGE	PICK-UP VOLTAGE RANGE	DROP-OUT VOLTAGE RANGE	PRODUCT NUMBER	WIRING/SOCKET
208, 220 & 240V AC	85-115% of Nominal Voltage Setting	80-95% of Pick-Up Setting	VAKPU	8 PIN OCTAL <b>70169-D</b>  MONITORED VOLTAGE <b>DIAGRAM 150</b>

Sockets & Accessories available



Better. By Design.

**800.238.7474**

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### OPERATING MODES

These relays can be used as either overvoltage or undervoltage relays, depending on the output contact used:

#### Overvoltage Relay

Provides protection to equipment that cannot handle excess voltages. Uses a normally closed contact (N.C.). As long as the monitored voltage remains below the maximum voltage the equipment can withstand (Pick-Up Setting), the relay remains de-energized and the N.C. contact remains closed, keeping the load energized. If the operating voltage increases beyond the maximum rating of the equipment, the relay energizes and the N.C. contact opens, turning off the load. When the voltage falls below the Drop-Out Setting (hysteresis), the relay de-energizes and the N.C. contact re-closes, turning on the load.

#### Undervoltage Relay

Provides protection to equipment that is required to operate above a certain minimum voltage. Uses a normally open contact (N.O.). As long as the monitored voltage is above the minimum value required (Pick-Up Setting), the relay will energize and the N.O. contact closes, turning on the load. If the voltage drops below the Drop-out Setting (the minimum voltage required minus the hysteresis), the relay will de-energize and the N.O. contact will re-open, turning off the load.

### APPLICATION DATA

#### Voltage Tolerance:

+50%/-40% of nominal voltage; AC voltages are 50-60Hz;  
No supply (input) voltage is required.

**Load (Burden):** Less than 3VA

#### Voltage Settings:

Pick-up: Adjustable from 85-115% of nominal voltage  
Drop-out: Adjustable from 80-95% of pick-up setting

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

#### Output Contacts:

SPDT: 10A @ 240V AC/30V DC, 1/2HP @ 240V AC

#### Life:

Mechanical: 10,000,000 operations  
Full Load: 100,000 operations

#### Response Times:

Power Up: 2 seconds fixed delay  
Operate: 0.1 - 10 seconds adjustable  
Release: 0.1 - 10 seconds adjustable

**Indicator LED:** Red steady when relay is energized; Green steady when relay is off; and Green rapid flash when in power-up mode.

**Reset:** Automatic

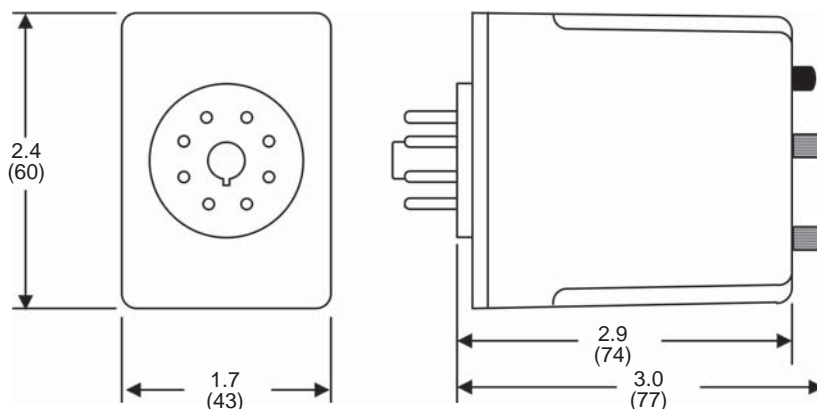
#### Approvals:



Low Voltage & EMC Directives  
EN60947-1, EN60947-5-1

with appropriate socket  
File #E109466

### DIMENSIONS



All Dimensions in Inches (Millimeters)