

# VOLTAGE MONITOR RELAYS

## VAKPU Series

Universal Voltage/True RMS Sensing  
Over/Under voltage Relay



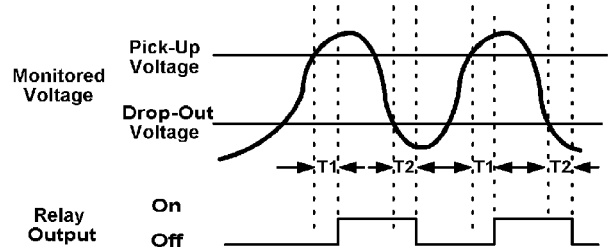
- u Monitors 208-240VAC single phase voltages
- u Wide range of user-adjustable pick-up and drop-out settings
- u Adjustable time delay on both drop-out & pick-up of 0.1 - 10 seconds
- u LED indicates output relay status
- u Compact plug-in case utilizing industry standard 8 pin octal socket
- u 10A SPDT output contacts



(with appropriate socket-Listing Pending)

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 Series can be used to monitor any 208-240VAC 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 (T1) 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 (T2), which is adjustable from 0.1-10 seconds.



Adjustable Nominal Voltage Setting 208 to 240VAC  
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
208-240VAC	85-115% of Nominal Voltage Setting	80-95% of Pick-Up Setting	VAKPU	8 Pin Octal 70169-D  <b>DIAGRAM 150</b>



# VOLTAGE MONITOR RELAYS

## VAKPU Series Over/Undervoltage Application Data & Dimensions

### 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:

-28° to 65° C (-20° to 150° F)

#### Output Contacts:

SPDT:10A Resistive @ 240V AC/30V DC,  
1/2HP @ 120/240V AC

#### Life:

Mechanical: 10,000,000 operations

Full Load: 100,000 operations

#### Approvals:



When used with  
with Macromatic  
Socket 70169-D  
(Pending)

File #E109466

#### Response Times:

Power Up: 2 seconds fixed delay

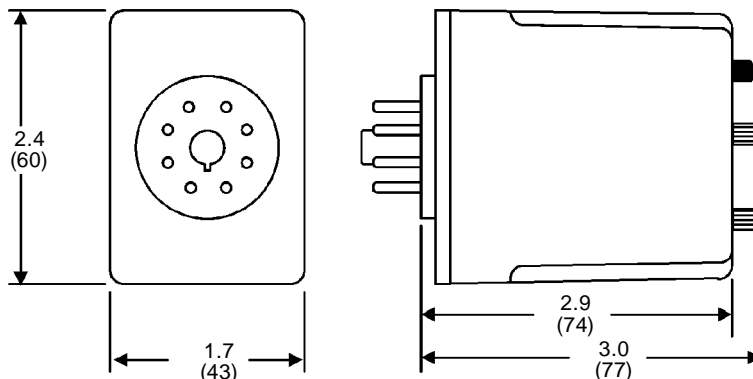
Operate: 0.1 - 10 seconds adjustable

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: As standard, reset is automatic upon correction of a fault.

### Dimensions



All Dimensions in  
Inches (Millimeters)