VOLTAGE MONITOR RELAYS

VA Series Over/Undervoltage

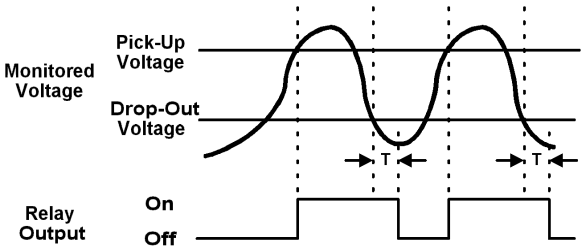
Adjustable Time Delay on Drop-Out

- Monitors AC single phase and DC voltages
- Wide range of user-adjustable pick-up and drop-out settings
- Adjustable time delay on drop-out of 0.5 - 10 seconds
- LED indicates output relay status
- Compact plug-in case utilizing industry standard 8 pin octal socket
- 10A DPDT output contacts
- c UL us CE

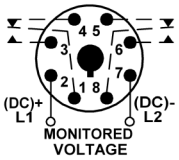
UL LISTED
(with appropriate socket)

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 pick-up voltage setting is user-adjustable from 85-115% of the nominal voltage rating. As standard, the VAP Series has a drop-out voltage setting fixed at 95% of the pick-up voltage setting. An adjustable drop-out setting of 75-95% of the pick-up setting is available on the VAKP Series. The relay energizes when the monitored voltage is above the pick-up setting. 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), which is adjustable from 0.5-10 seconds for VA Series products. A time delay on drop-out fixed at 500ms is available (see Page 25).

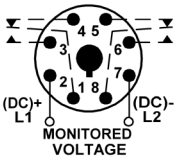


Adjustable Pick-Up, Fixed Drop-Out Settings *
Adjustable Time Delay on Drop-out from 0.5 - 10 Seconds

NOMINAL VOLTAGE●	PICK-UP VOLTAGE RANGE	DROP-OUT VOLTAGE RANGE*	PRODUCT NUMBER	WIRING/ SOCKET
24V AC 120V AC	21-27V AC 102-138V AC	20-26V AC 97-131V AC	VAP024A VAP120A	8 Pin Octal **70169-D**  **DIAGRAM 20**
12V DC 24V DC 48V DC 110V DC	10-14V DC 21-27V DC 41-55V DC 94-126V DC	9-13V DC 20-26V DC 39-53V DC 89-121V DC	VAP012D VAP024D VAP048D VAP110D	

* Drop-out Voltage is fixed at 95% of the adjusted Pick-up Setting.

Adjustable Pick-Up & Drop-Out Settings **
Adjustable Time Delay on Drop-out from 0.5 - 10 Seconds

NOMINAL VOLTAGE●	PICK-UP VOLTAGE RANGE	DROP-OUT VOLTAGE RANGE	PRODUCT NUMBER	WIRING/ SOCKET
24V AC 120V AC	21-27V AC 102-138V AC	16-26V AC 77-131V AC	VAKP024A VAKP120A	8 Pin Octal **70169-D**  **DIAGRAM 20**
12V DC 24V DC 48V DC 110V DC	10-14V DC 21-27V DC 41-55V DC 94-126V DC	8-13V DC 16-26V DC 32-52V DC 71-121V DC	VAKP012D VAKP024D VAKP048D VAKP110D	

** Drop-out Voltage is adjustable from 75-95% of the adjusted Pick-up Setting.

● Contact Macromatic for information on units above 120V.

Sockets & Accessories–Page 16 **Application Data/Dimensions**–Page 27

VOLTAGE MONITOR RELAYS

VM & VA 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:
+25%/-50% of nominal voltage; AC voltages are 50-60Hz;
No separate supply (input) voltage is required.

Load (Burden): Less than 3VA

Voltage Settings:
Pick-up: Adjustable from 85-115% of nominal voltage
Drop-out: Fixed at 95% of the pick-up setting (VMP & VAP Series)
Adjustable from 75-95% of pick-up setting (VMKP & VAKP Series)

Temperature:
-28° to 55° C (-20° to 131° F)

Output Contacts:
10A Resistive @ 240V AC/30V DC, 1/2HP @ 240V AC (N.O.), 1/3HP @ 240V AC (N.C.)

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

Response Times:
Operate: 500ms
Release: Fixed 500 ms (VMP & VMKP Series)
Adjustable 0.5 - 10 Seconds (VAP & VAKP Series)

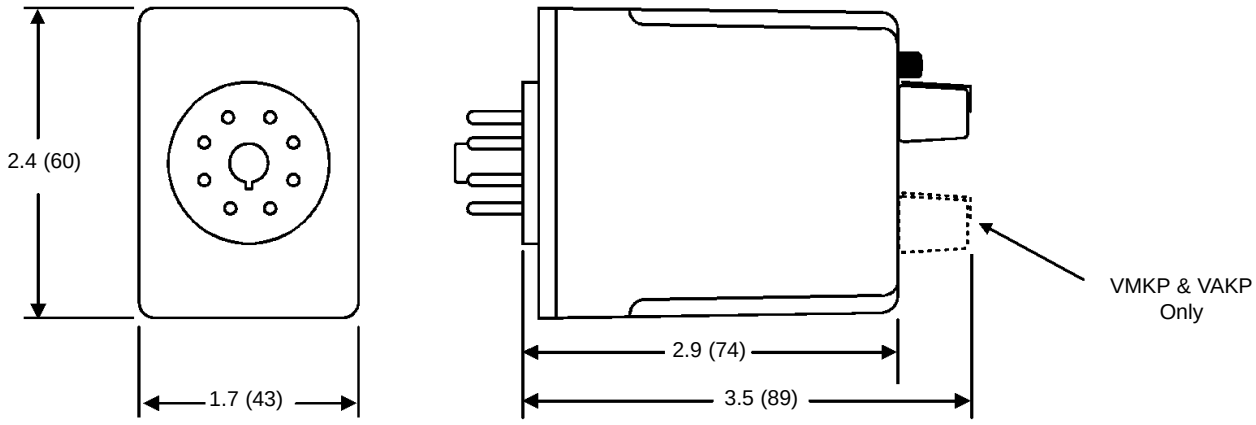
Indicator LED: Red Steady when Relay is energized; Green when Relay is Off.

Transient Protection:
10,000 volts for 20 microseconds

Reset: Automatic. Contact Macromatic for information on how to order a unit with Manual Reset.

Approvals:
c UL us — File #E109466
UL LISTED IND. CONT. EQUIP. 50U7 — with appropriate Macromatic socket
File #E109466
CE

Dimensions



All Dimensions in Inches (Millimeters)