

K8AK-VW Application Note

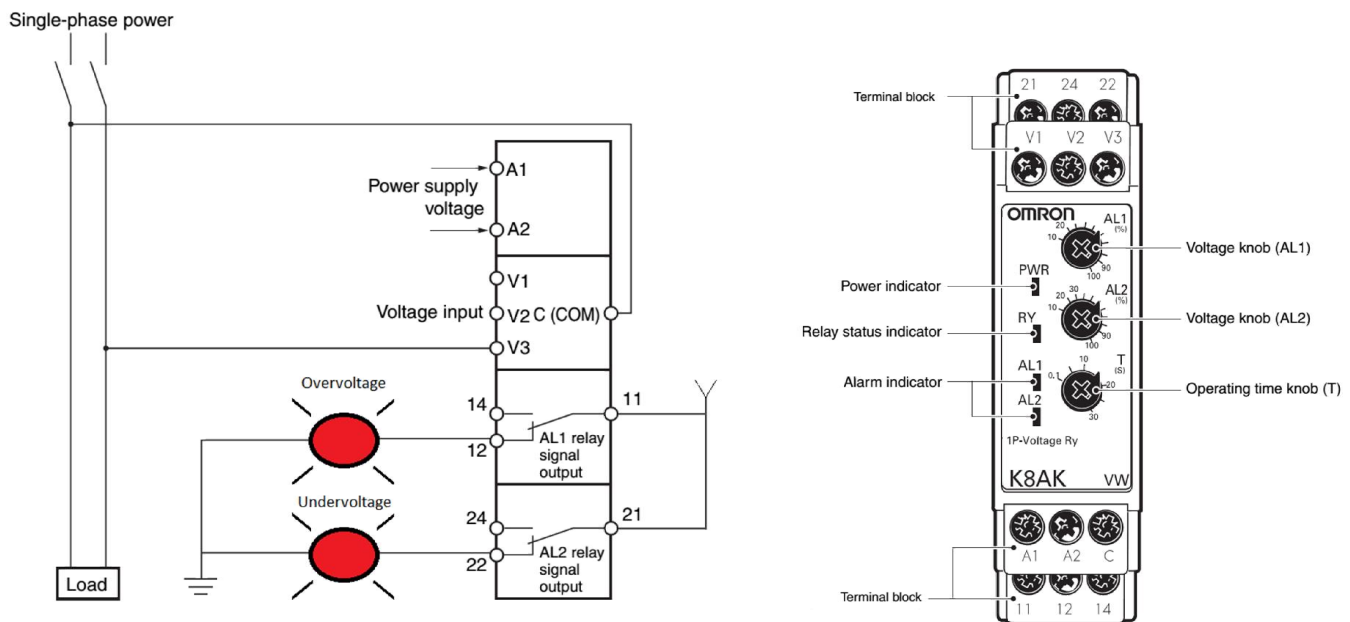
Application:

Voltage monitoring in control panels for precision equipment:

Local voltage fluctuations can cause power outages that adversely affect your products. You can monitor fluctuation on the primary power supply to the equipment to activate a trigger to switch to an alternate power supply, stop the process or notify a corrective shut down of process.

With the K8AK-VW it will monitor overvoltage and undervoltage with a single unit. It can also provide individual outputs for both overvoltage and undervoltage alarms (SPDT). The K8AK-VW provides switch selectable manual or automatic reset. The K8AK-VW can monitor both AC or DC input voltages.

Below shows a wiring example of a K8AK-VW2 100-240 VAC sensing a 120 VAC signal. The unit will provide an overvoltage indication at 130VAC, as well as an undervoltage indication at 90VAC. The operation time is set for 10 sec, power ON lock time set for 5 sec, and is in an automatic reset operation:



To determine the AL1 and AL2 knob settings:

For input V3 on the K8AK-VW2 the range is 0 to 150 VAC. So adjusting the limits for the overvoltage and undervoltage knobs will provide a sensing range of 10% = 15 VAC/VDC to 100% = 150 VAC/VDC.

To determine the above application we can then calculate the values for the 130 VAC (High Limit) using a ratio:

$$\frac{150 \text{ VAC}}{100 \%} = \frac{130 \text{ VAC}}{X} \rightarrow \frac{13000}{150X}$$

$$X = \frac{13000}{150} \text{ or } 86.66\%$$

Voltage Knob (AL1) setting: 86.66%*

To determine the above application we can then calculate the values for the 90 VAC (Low Limit) using a ratio:

$$\frac{150 \text{ VAC}}{100 \%} = \frac{90 \text{ VAC}}{X} \rightarrow \frac{9000}{150X}$$

$$X = \frac{9000}{150} \text{ or } 60.0\%$$

Voltage Knob (AL2) setting: 60.0%*

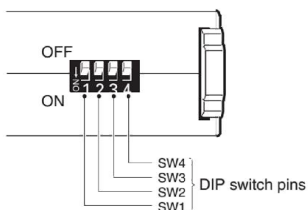
***Note:** The above calculations will provide an approximate setting value. It is recommended to test the application to verify the accuracy of the setting Knobs. To reduce the error in the setting knob, always turn the setting knob from the minimum setting toward the maximum setting.

Setting Operating Time Knob:

Set Operating time knob to 10 Sec.

Setting the dip switches

For the above application the dip switches located on the bottom of the unit will be set for the following:



SW1 **“Power ON lock time”**: ON (5 sec.)

SW2 **“Resetting Method”**: ON (Automatic Reset)

SW3 **“Operating Mode 1”**: OFF

SW4 **“Operating Mode 2”**: OFF (SW3 & SW4 =AL1 Overvoltage/AL2 Undervoltage)

Below shows the timing chart for the above application:

