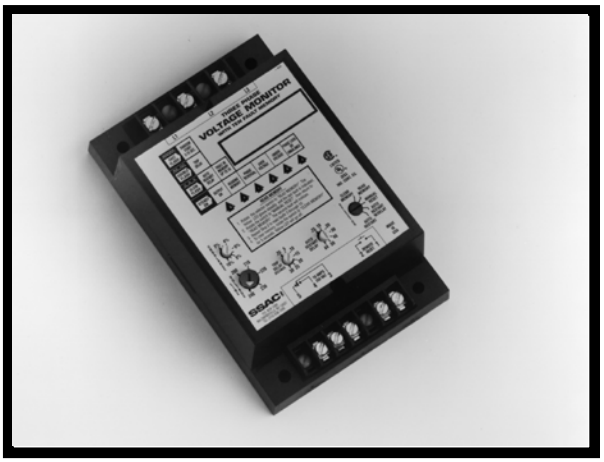
WVM Series

(3 Phase Voltage Monitor with 10 Fault Memory)



Protects Against: ☐ Phase Loss ☐ Low Voltage ☐ Unbalanced Voltages ☐ Phase Reversal ☐ High Voltage

- ☐ 10 Fault Memory and Status Displayed on 6 LED Readout
- ☐ Switch Selectable Automatic Restart, Delayed Automatic Restart, and Manual Reset (with Remote Reset Option)
- ☐ True 3 to 15 sec Random Start Delay
- ☐ Restart Delays from 0.25 Seconds to 64 Minutes
- ☐ Isolated 10 Amp SPDT Relay Contacts
- ☐ IEEE 587 Level B Surge Protection
- ☐ UL Listed and CSA Approved

DESCRIPTION

The WVM Series provides protection against premature equipment failure caused by voltage faults on the 3 Phase Line. The WVM's microcomputer design provides reliable protection even if regenerated voltages are present. The WVM is the first unit to combine dependable fault sensing with a 10 fault memory. Part control, part instrument, the WVM Series protects your investment when you're not there and displays what happened when you return. If you are experiencing unexplained motor failures, the WVM Series is the answer.

SPECIFICATIONS

1. Line Voltage

1.1 Type: Three phase Delta or Wye with no connection to neutral.

1.2 Operating Voltage

NOMINAL 50/60 Hz	ADJUSTMENT RANGE
240 VAC	200 TO 240 VOLTS
380 VAC	355 TO 425 VOLTS
480 VAC	400 TO 480 VOLTS
600 VAC	500 TO 600 VOLTS

2. High/Low Voltage and Voltage Unbalance

2.1 High/Low Voltage

	TRIP POINT	RESET
HIGH	109% to 113% of Adjusted Voltage	-2% of Trip Point
LOW	88% to 92% of of Adjusted Voltage	+2% of Trip Point

2.2 Voltage Unbalance: Trip Point is adjustable from 2% to 10%. (Fixed models are available. Consult Factory.)

2.3 Trip Delay: Adjustable from 0.25 to 30 seconds ± 15%. (Fixed models are available. Consult Factory.)

3. Phase Loss and Phase Reversal

3.1 Response Time: 200 milliseconds maximum

4. Random Start Delay

4.1 Operation: A random delay is selected by the microcomputer when a fault is corrected and when the WVM is powered up. There is no random start delay when reset is manual.

4.2 Random Delay Range: 3 to 15 seconds

5. Reset (Restart)

5.1 Automatic Restart: When a fault is corrected, the output will re-energize after a random start delay (see 4).

5.2 Automatic Restart with Restart Delay: When the WVM senses a fault, the output de-energizes and a restart delay is initiated. This delay locks out the output for the delay period. Should the fault be corrected at the end of the restart delay, the output will re-energize after a random start delay (see 4). NOTE: A restart delay will also occur when the WVM is powered up.

5.2.1 Restart Delay: Low Range: 0.25 to 64 Seconds ± 15%
High Range: 0.25 to 64 Minutes ± 15%

5.3 Manual Reset: After a fault condition is corrected, the WVM can be manually reset. There are two methods—on the unit or remote.

A. On-Board: Rotate selector switch from the Manual Reset position to Auto Restart with Delay then back again to Manual Reset within 3 seconds. Output will immediately energize (no delays). When a manual only reset is ordered, a momentary push button is provided.

B. Remote: Reset (Restart) is accomplished by a momentary contact closure across terminals 1 and 2. The output will immediately energize (no delays).

NOTES: 1. Switch requirement is 10MA at 20VDC and is not isolated from line voltage.
2. A resistance of less than 20,000 ohms across terminals 1 and 2 will cause automatic restart.

6. Fault Memory

6.1 Type: Nonvolatile RAM

6.2 Capacity: Stores last 10 faults

6.3 Status Indicators: Six LED indicators provide existing status and memory readout. (See cover diagram on next page.)
NOTE: 50% (minimum) of Nominal Line Voltage must be applied to L1 and L2 for operation of Status Indicators.

6.4 Read Memory: Fault(s) stored in the memory are indicated when the yellow LED is flashing. To read memory, rotate selector from Manual to Read Memory. The last fault will be displayed. Repeat this operation to read the second to the last fault. Repeat until up to 10 faults are noted.

6.5 Memory Reset: To clear the memory of all faults stored, rotate selector to Memory Reset for 5 seconds. The yellow LED will turn off.

6.6 Memory Overload: The 11th fault causes the first to be removed from memory. Only the 10 most recent faults are retained.
NOTE: Power is not required to maintain memory.

7. Output

7.1 Type: Electromechanical (energized when all conditions are acceptable and the WVM is reset).

7.2 Form: Single pole double throw

7.3 Rating: 10 amperes resistive at 250 VAC
6 amperes inductive at 250 VAC (0.4 PF)

8. Protection

8.1 Transient: 120 Joule MOV (220 Joule MOV on 600 VAC models) provided on all line inputs.
CAUTION: 2 amp max fast acting fuses must be installed externally in each input line (3). (Bussman KTK-2 or equivalent.)

8.2 Surge tested to IEEE/587 Level B.

8.3 Dielectric: 2500 Volts RMS minimum.

9. Mechanical

9.1 Mounting: Surface mount with two or four #8 screws.

9.2 Termination: Screw terminals with captive wire clamps for up to No. 12 AWG wire.

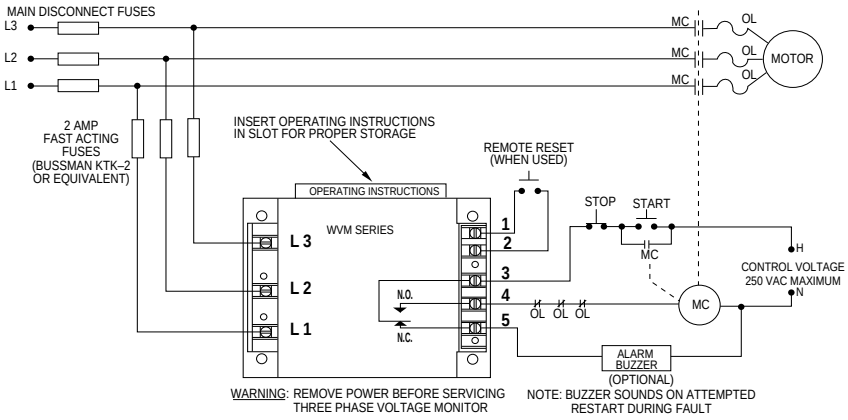
10. Environmental

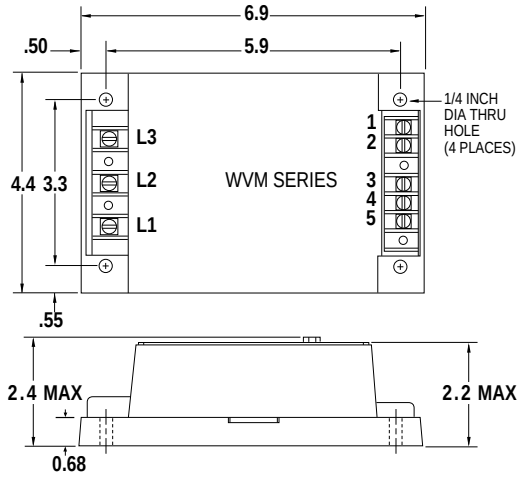
10.1 Operating temperature: -40° to +65°C

10.2 Storage temperature: -40° to +85°C

10.3 The WVM package is not waterproof. Mount in a suitable location away from rain, spray, and condensation.

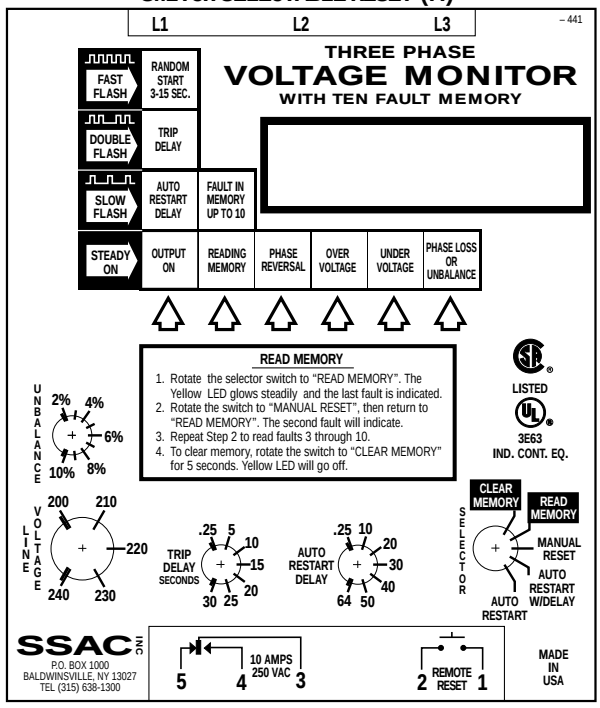
CONNECTION



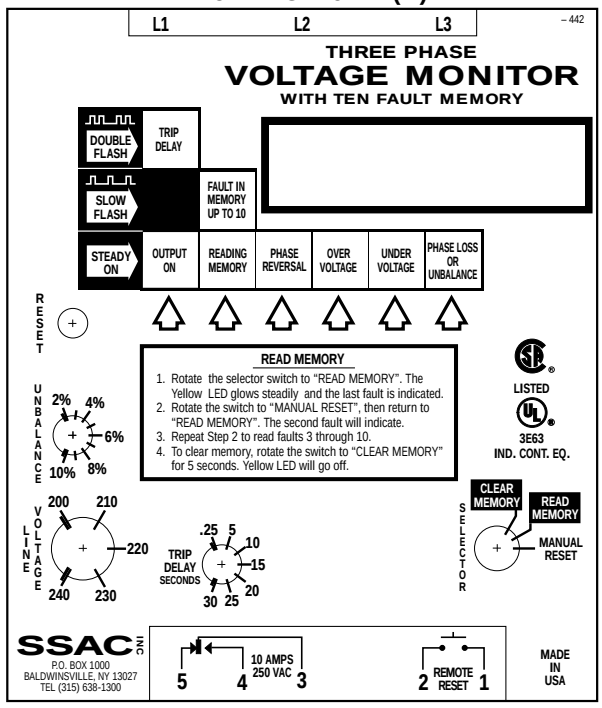


COVER DIAGRAM

SWITCH SELECTABLE RESET (A)



MANUAL RESET ONLY (M)



ORDERING INFORMATION

Part Number	Three Phase Voltage (Adjustable)	Restart Delay (Adjustable)	Reset Method
WVM611AL	200 to 240 volts	0.25 to 64 seconds	SWITCH SELECTABLE Automatic Delayed Automatic or Manual (On Board or Remote)
WVM611AH	200 to 240 volts	0.25 to 64 minutes	
WVM911AL	400 to 480 volts	0.25 to 64 seconds	
WVM911AH	400 to 480 volts	0.25 to 64 minutes	
WVM011AL	500 to 600 volts	0.25 to 64 seconds	
WVM011AH	500 to 600 volts	0.25 to 64 minutes	
WVM611M	200 to 240 volts	NONE	MANUAL RESET (On Board or Remote)
WVM911M	400 to 480 volts	NONE	
WVM011M	500 to 600 volts	NONE	