

CE

WVM SERIES



Wiring Diagram



Ordering Information

MODEL

WVM011AL WVM611AH

WVM611AL WVM611BL

WVM811AH

WVM811RL

WVM911AH

WVM911AL WVM911AL-60

WVM911AN

WVM911RH

WVM911RL

WVM911RN-60

F = Fuses NO = Normally Open NC = Normally Closed RS = Optional Remote Reset Switch

Relay contacts are isolated.

CAUTION: 2 amp max fast acting fuses must be installed externally in series with each input. (3)

Description

The WVM Series provides protection against premature equipment (motor) failure caused by voltage faults on the 3-phase line. The WVM's microcontroller design provides reliable protection even if regenerated voltages are present. It combines dependable fault sensing with a 10 fault memory and a 6 LED status display. Part instrument, part control, the WVM protects your equipment when you're not there and displays what happened when you return. The WVM is fully adjustable and includes time delays to prevent nuisance tripping and improve system operation. Time delays include a 0.25 to 30s adjustable trip delay, an adjustable 0.25 to 64m (in 3 ranges) restart delay, plus a unique 3 to 15s true random start delay. The random start delay prevents voltage sags caused by simultaneous restarting of numerous motor loads after a power outage.

Features & Benefits

FEATURES	BENEFITS
Proprietary microcontroller based circuitry	Constant monitoring to protect against phase loss, phase reversal, over voltage, under voltage, unbalance, and short cycling
Fault memory	Stores the 10 most recent faults, which provides diagnostics for troubleshooting
LED indication	Provides visual indictation of existing relay/fault status or faults stored in memory.
Switch selectable automatic restart, delayed automatic restart, and manual reset	Allows user adjustment to handle unique application requirements
Random start delay	Prevents voltage sags caused by simultaneous restarting of multiple motor loads after a power outage

Operation

The output relay is energized when all conditions are acceptable and the WVM is reset. A restart and/or random start delay may occur before the output relay is energized.

Field Adjustment: Select the line voltage listed on the motor's name plate. This automatically sets the over and undervoltage trip points. No further adjustment should be required to achieve maximum equipment protection.

LINE VOLTAGE	UNBALANCE	TRIP DELAY	SWITCH SELECTABLE RESET METHOD	RESTART DELAY
500 to 600VAC	2 - 10%	0.25 - 30s	Auto restart upon fault trip	0.25 - 64s
200 to 240VAC	2 - 10%	0.25 - 30s	Auto restart upon fault trip	0.25 - 64m
200 to 240VAC	2 - 10%	0.25 - 30s	Auto restart upon fault trip	0.25 - 64s
200 to 240VAC	2 - 10%	0.25 - 30s	Auto restart upon fault correction	0.25 - 64s
355 to 425VAC	2 - 10%	0.25 - 30s	Auto restart upon fault trip	0.25 - 64m
355 to 425VAC	2 - 10%	0.25 - 30s	Auto restart upon fault correction	0.25 - 64s
400 to 480VAC	2 - 10%	0.25 - 30s	Auto restart upon fault trip	0.25 - 64m
400 to 480VAC	2 - 10%	0.25 - 30s	Auto restart upon fault trip	0.25 - 64s
400 to 480VAC	2 - 10%	0.25 - 30s	Auto restart upon fault trip	0.25 - 64s, no random start delay
400 to 480VAC	2 - 10%	0.25 - 30s	Auto restart upon fault trip	6 - 300s
400 to 480VAC	2 - 10%	0.25 - 30s	Auto restart upon fault correction	0.25 - 64m
400 to 480VAC	2 - 10%	0.25 - 30s	Auto restart upon fault correction	0.25 - 64s
400 to 480VAC	2 - 10%	0.25 - 30s	Auto restart upon fault correction	6 - 300s, no random start delay

If you don't find the part you need, call us for a custom product 800-843-8848

WVM SERIES



Read Memory: Fault(s) stored in the memory are indicated when the yellow LED is flashing, up to 10 faults are noted.

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

Memory Overload: Only the 10 most recent faults are retained.

Random Start Delay: A new 3 to 15s random start delay is selected by the microcontroller when a fault is corrected and when the operating voltage (L1, L2, L3) is applied to the WVM. A random start delay does not occur when the reset is manual.

Automatic Restart: Upon fault correction, the output will re-energize after a random start delay.

Automatic Restart Upon Fault Trip: When a fault is sensed for the full trip delay, 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 by the end of the restart delay, the output will re-energize after a random start delay. A restart delay will also occur when operating voltage (L1, L2, L3) is applied to the WVM.

Manual Reset: After a fault condition is corrected, the WVM can be manually reset. There are two methods; a customer supplied remote switch, or the onboard selector switch.

Manual Reset (Onboard): Rotate selector switch from the Manual Reset position to Auto Restart w/Delay then back again to Manual Reset within 3 seconds. The output will immediately energize.

Remote Reset: Reset (Restart) is accomplished by a momentary contact closure across terminals 1 & 2. The output will immediately energize. Remote switch requirements are ≥ 10 mA @ 20VDC and the reset terminals are not isolated from line voltage. A resistance of ≤ 20 K Ω across terminals 1 & 2 will cause immediate automatic restart.

Automatic Restart Upon Fault Correction: (P/N includes an R) When a fault is sensed for the full trip delay, the output relay de-energizes. Upon correction of the fault, a restart delay begins. At the end of this delay, the output will re-energize after a random start delay. If a fault occurs during restart timing, the restart time delay will be reset to zero, and the output will not energize until the restart delay is completed.

Accessories



LPSM003ZXID (Indicating), LPSM003Z (Non-indicating) Fuse Holders

Littelfuse POWR-SAFE Dead Front holders provide optimum protection to personnel for Class CC and Midget-Style fuses. 600 VAC/DC



0KLK002.T Midget Fuse (2 Amp)

 10×38 fast acting, high-interrupting capacity, current-limiting type fuse. 600 Vac/500 Vdc



C103PM (AL) DIN Rail

35 mm aluminum DIN rail available in a 36 in. (91.4 cm) length.

Specifications

Line Voltage Type

Operating Voltage

AC Line Frequency Overvoltage, Undervoltage, & Voltage Unbalance **Overvoltage Trip Point Reset Voltage Undervoltage Trip Point Reset Voltage Voltage Unbalance Trip Delay** Phase Loss **Response Time Random Start Delay Range Reset (Restart) Delay** Low Range **Normal Range High Range Fault Memory**

Type Capacity Status Indicators

Output

Type Form Rating

Life Protection

Phase Reversal/Failure Motors and Generators Surge Isolation Voltage Mechanical Mounting Dimensions

Termination

Environmental

Operating/Storage Temperature Weight 3-phase delta or wye with no connection to neutral

Adj. Line Voltage Range
200-240VAC
355-425VAC
400-480VAC
500-600VAC

109-113% of adjusted voltage -2% of trip point 88-92% of adjusted voltage +2% of trip point Adjustable from 2-10%* Adjustable from 0.25 - $30s \pm 15\%$ $\geq 15\%$ unbalance ≤ 200 ms 3 - 15s

0.25-64s ±15% 6-300s ±15% 0.25-64m ±15%

Model

240

380

480

600

50/60 Hz

Nonvolatile RAM Stores last 10 faults 6 LEDs provide existing status & memory readout *Note: 50% of operating line voltage must be applied to L1 & L2 for operation of status indicators*

Electromechanical relay Isolated, SPDT 10A resistive @ 250VAC; 6A inductive (0.4 PF) @ 250VAC Mechanical - 1 x 10⁷

ASME A17.1 Rule 210.6 NEMA MG1 14:30, 14:35 IEEE 62.41-1991 Level B \geq 2500V RMS input to output

Surface with 2 or 4 #8 (M4 x 0.7) screws **H** 175.3 mm (6.9"); **W** 111.8 mm (4.4"); **D** 61.0 mm (2.4") Screw terminals with captive wire clamps for up to #12 AWG (3.2 mm²) wire

-40° to 65°C / -40° to 85°C ≅ 25 oz (709 g)

* Unbalance reset is 90% of the unbalance setting (i.e. VUB at 5% reset is 4.5%)