

# MODEL 2002Y

## 3-Phase Voltage Unbalance Monitor

- Detects Unbalanced Voltages On Wye Connections
- Percent of Unbalance Adjustment
- Automatic Reset
- Can Energize Relay w/ Only 1 Phase and Neutral Connection



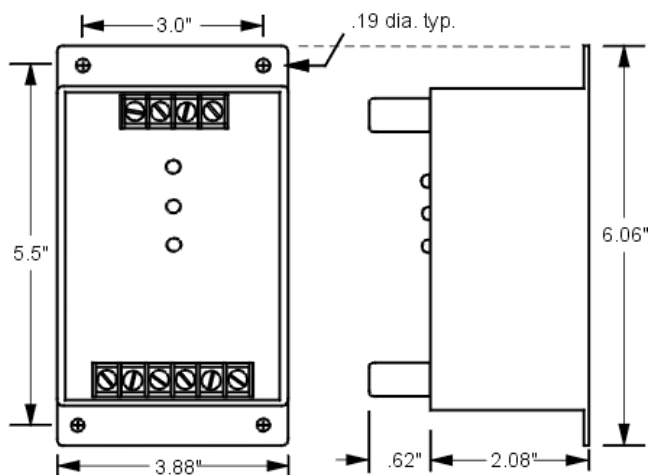
### DESCRIPTION

The Model 2002Y 3-Phase Voltage Unbalance Monitor is designed to continuously monitor a three-phase line with a neutral connection for unbalanced voltage conditions.

This device will only energize the relay if an unbalance exists. Zero volts on all three phases is considered a balanced condition. This allows the Model 2002Y to be used with shunt breakers, so that main power can be restored without resetting breakers.

The solid-state sensing circuit drives an internal electromechanical relay. Indicator lights on the monitor show when the voltage balance is within an acceptable range; when an unbalance exists; and when the relay is actually tripped.

### DIMENSIONS



### SPECIFICATIONS

Model	2002Y-2002Y-2002Y-2002Y-2002Y-2002Y-	2002Y-2002Y-2002Y-2002Y-2002Y-2002Y-	2002Y-2002Y-2002Y-2002Y-2002Y-2002Y-	2002Y-2002Y-2002Y-2002Y-2002Y-2002Y-	2002Y-2002Y-2002Y-2002Y-2002Y-2002Y-	2002Y-2002Y-2002Y-2002Y-2002Y-2002Y-
2002Y-XXX/YYY	69/120	120/208	138/240	220/380	240/415	277/480
Phase-Neutral Voltage	69VAC	120VAC	138VAC	220VAC	240VAC	277VAC
Phase-Phase Voltage	120VAC	208VAC	240VAC	380VAC	415VAC	480VAC
Voltage Range	± 15%	± 15%	± 15%	± 15%	± 15%	± 15%
Frequency	50Hz - 60Hz					
Power Consumption (per phase max)	2.0W	2.0W	2.0W	2.0W	2.0W	2.0W
Transient Protection	2500VRMS for 10ms					
Repeat Accuracy	± 0.1% (fixed conditions)					
Unbalance Adjustment	2% to 10%					
Response Time	150ms					
Reset Time	Fixed 1 sec					
Dropout Time	Adjustable 1 to 20 seconds					
Reset Type	Automatic					
Dead Band	0.5% max					
Contact Rating	DPDT 10 amps at 240VAC resistive					
Expected Relay Life	Mech: 10 million operations Elec: 100,000 operations at rated load					
Operating Temp	- 20° to +131° F					
Humidity Tolerance	0-97% w/o condensation					
Mounting	Surface					
Enclosure Material	ABS plastic					
Weight	10 oz.					

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# MODEL 2002Y 3-Phase Voltage Unbalance Monitor

READ ALL INSTRUCTIONS BEFORE INSTALLING, OPERATING OR SERVICING THIS DEVICE.  
KEEP THIS DATA SHEET FOR FUTURE REFERENCE.

## GENERAL SAFETY

POTENTIALLY HAZARDOUS VOLTAGES ARE PRESENT AT THE TERMINALS OF THE MODEL 2002Y.  
ALL ELECTRICAL POWER SHOULD BE REMOVED WHEN CONNECTING OR DISCONNECTING WIRING.  
THIS DEVICE SHOULD BE INSTALLED AND SERVICED BY QUALIFIED PERSONNEL.

## Installation Instructions

### INSTALLATION

Set PERCENT OF UNBALANCE fully clockwise.

Set TRIP DELAY IN SECONDS fully counter-clockwise.

Connect the 3-phase wires to the terminals marked 'A', 'B' and 'C' and neutral connection to 'N'.

Connect the control wires to the terminals with the relay contact markings. The contact markings on the unit are the NORMAL or OFF condition of the contacts.

Apply power. NORMAL indicator should be ON.

### ADJUSTMENT

Rotate the PERCENT OF UNBALANCE adjustment pot to the desired setting. The percentage of unbalance is calculated as follows using phase to neutral voltages:

$$\% \text{ Unbalance} = \frac{V_{\max} - V_{\min}}{V_{\max}}$$

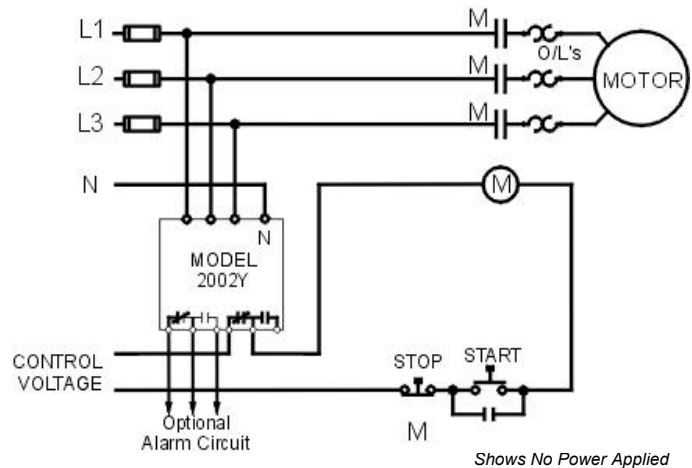
Set the TRIP DELAY adjustment to the desired amount of delay to prevent nuisance trips.

Should nuisance trips occur, increase the TRIP DELAY IN SECONDS setting. Any adjustments should be made in very small increments.

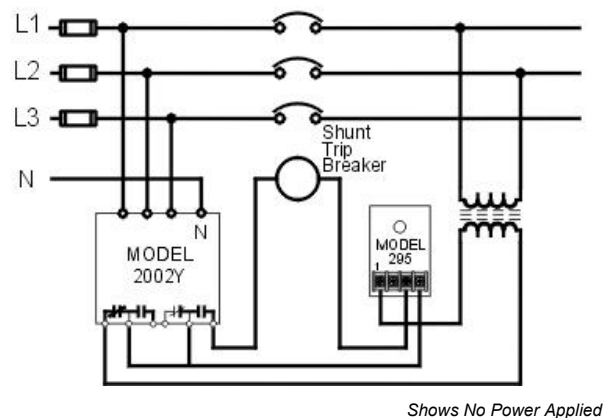
### WARRANTY

This product is warranted to be free from defects in materials and workmanship, and is covered by our exclusive **5-year Unconditional Warranty**. Should this device fail to operate for any reason, we will repair it for five years from the date of manufacture. For complete warranty details, see the *Terms and Conditions of Sales* page in the front section of the Time Mark catalog or contact Time Mark at 1-800-862-2875.

### TYPICAL MOTOR APPLICATION



### TYPICAL SHUNT BREAKER APPLICATION



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