

# Voltage Monitoring Relays

## 201A Series

### 3-Phase Voltage/Phase Monitor



## Description

The 201A series is a three-phase, auto-ranging, dual-range voltage monitor that protects 190–480 V ac, 50\*/60 Hz motors regardless of their size. This monitor provides a user-selectable nominal voltage setpoint and will automatically select between the 200 V and 400 V range. It includes advanced, single LED diagnostics where color and light patterns distinguish between faults and normal conditions. This unique microcontroller-based voltage and phase-sensing unit constantly monitors the three-phase voltages to detect harmful power line conditions. When a harmful condition is detected, the output relay is deactivated after a specified trip delay. The output relay reactivates after power line conditions return to acceptable levels for a specified restart delay time.

\*Note: 50 Hz will increase all delay times by 20%.

## Features & Benefits

FEATURES	BENEFITS
<b>Proprietary microcontroller-based circuitry</b>	Constant monitoring of single-phase, low-voltage, voltage unbalance, phase reversal, power line conditions – high-voltage monitoring is optional
<b>Auto-sensing wide voltage range</b>	Automatically senses system voltage between 190–480 V ac. Saves setup time
<b>Advanced LED diagnostics</b>	LED indications include: normal operation, power-up restart delay, reverse-phase trip, unbalance/single-phase trip, high/low voltage trip
<b>Compact design for 8-pin; DIN-rail or surface mount</b>	Allows flexibility in panel installation

## Applications

- Fan motors
- Air conditioners
- Compressors
- Heat, well, and sump pumps
- Small conveyer motors

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### Specifications

<b>Frequency</b>	50/60 Hz
<b>Functional Characteristics</b>	
<b>Low Voltage (% of setpoint)</b>	
<b>Trip</b>	90% ±1%
<b>Reset</b>	93% ±1%
<b>Voltage Unbalance (NEMA)</b>	
<b>Trip</b>	6%
<b>Reset</b>	4.5%
<b>Optional High Voltage (% of setpoint)</b>	
<b>Trip</b>	110% ±1%
<b>Reset</b>	107% ±1%
<b>Trip Delay Time</b>	
<b>High/Low Voltage Fault</b>	4 seconds
<b>Unbalance &amp; Phasing Faults</b>	2 seconds
<b>Restart Delay Time</b>	
<b>After a Fault</b>	2 seconds
<b>After a Complete Power Loss</b>	2 seconds
<b>Output Characteristics</b>	
<b>Output Contact Rating (SPDT)</b>	
<b>Pilot Duty</b>	480 VA @ 240 V ac
<b>General Purpose</b>	10 A @ 240 V ac
<b>General Characteristics</b>	
<b>Temperature Range</b>	-20° to 70 °C (-4° to 158 °F)
<b>Trip &amp; Reset Accuracy</b>	±1%
<b>Maximum Input Power</b>	5 W
<b>Relative Humidity</b>	10–95%, non-condensing per IEC 68-2-3
<b>Terminal Torque</b>	12 in.-lbs. (for OT08-PC socket)
<b>Wire Gauge</b>	12–22 AWG solid or stranded
<b>Transient Protection (Internal)</b>	2500 V for 10 ms
<b>Standards Passed</b>	
<b>Electrostatic Discharge (ESD)</b>	IEC 61000-4-2, Level 3, 6 kV contact, 8 kV air
<b>Radio Frequency Immunity (RFI), Radiated</b>	150 MHz, 10 V/m
<b>Fast Transient Burst</b>	IEC 61000-4-4, Level 3, 3.5 kV input power & controls
<b>Surge</b>	
<b>Immunity</b>	IEC IEC 61000-4-5, Level 3, 4 kV line-to-line; Level 4, 4 kV line-to-ground
<b>ANSI/IEEE</b>	C62.41 Surge and Ring Wave Compliance to a level of 6 kV line-to-line
<b>Hi-potential Test</b>	Meets UL508 (2 x rated V + 1000V for 1 min.)
<b>Dimensions</b>	<b>H</b> 44.45 mm (1.75"); <b>W</b> 60.33 mm (2.38"); <b>D</b> (with socket) 104.78 mm (4.13")
<b>Weight</b>	0.7 lbs. (11.2 oz., 317.51 g)
<b>Mounting</b>	Method DIN-rail or surface mount (plug in to OT08PC socket)
<b>Socket Available</b>	Model OT08PC (UL Rating 600 V)

The 600 V socket can be surface mounted or installed on DIN Rail.

Note: Manufacturer's recommended screw terminal torque for the OT Series Octal Sockets is 12 in.-lbs.

Must use Model OT08PC socket for UL Rating!

### Certification & Compliance

UL

UL 508 (File #E68520)

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### Accessories

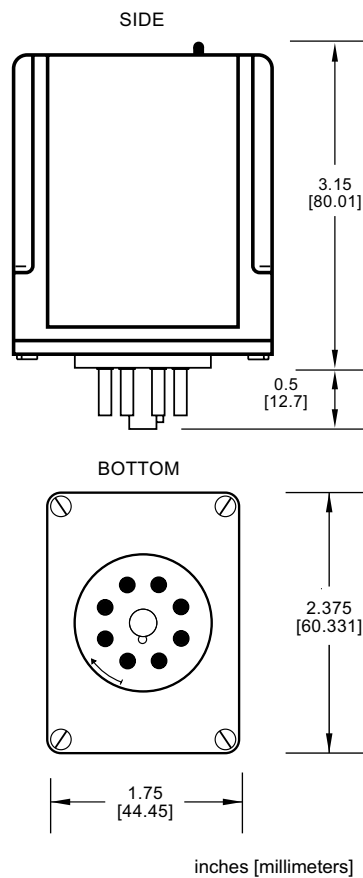
#### OT08PC Octal 8-pin Socket

8-pin 35 mm DIN-rail or surface mount. Rated at 10 A @ 600 V ac. Surface mounted with two #6 screws or snaps onto a 35 mm DIN-rail.

### Ordering Information

MODEL	LINE VOLTAGE	DESCRIPTION
201A	190–480 V ac	DIN-rail or surface mountable
201A-9	190–480 V ac	Includes high voltage detection. DIN-rail or surface mountable

### Dimensions Inches (mm)

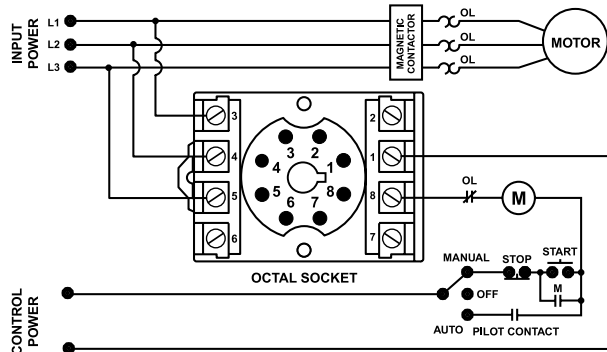


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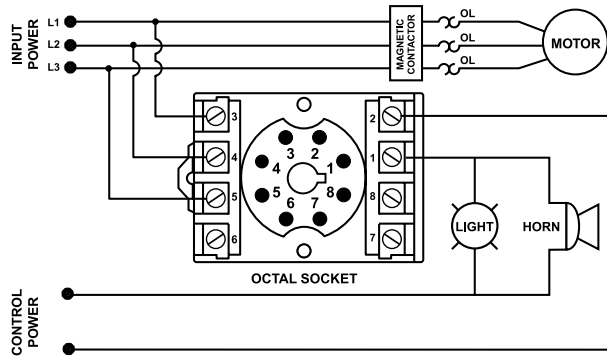
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### Wiring Diagram

201A WITH MOTOR CONTROL



201A WITH ALARM CONTROL



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