

# Voltage Monitoring Relays

## 201A-AU Series

### 3-Phase Voltage/Phase Monitor



## Description

The 201A-AU 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. Additional adjustment knobs allow the user to set a 1–30 second trip delay, a manual restart or 1–500 second restart delay, and a 2–8% voltage unbalance trip point. 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 (or manual reset).

## Features & Benefits

| FEATURES   | BENEFITS  |
|--|---|
| <b>Proprietary microcontroller-based circuitry</b>         | Constant monitoring of loss of any phase, low-voltage, high-voltage, voltage unbalance, phase reversal, harmful power line conditions |
| <b>Auto-sensing wide voltage range</b>                     | Automatically senses system voltage between 190–480 V ac. Saves setup time  |
| <b>Advanced LED diagnostics</b>                            | Quick visual indicator for cause of trip  |
| <b>Compact design for 8-pin; DIN-rail or surface mount</b> | Allows flexibility in panel installation  |
| <b>Adjustable voltage unbalance trip setting</b>           | Allows compatibility with a variety of motors and reduces nuisance tripping   |
| <b>Adjustable trip and restart delay settings</b>          | Prevents nuisance tripping due to rapidly fluctuating power line conditions.  |

## 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>High Voltage (% of setpoint)</b>       |  |
| <b>Trip</b>                               | 110% ±1%   |
| <b>Reset</b>                              | 107% ±1%   |
| <b>Voltage Unbalance (NEMA)</b>           |  |
| <b>Trip</b>                               | 2–8% adjustable  |
| <b>Reset</b>                              | Trip setting minus 1% (5–8%)<br>Trip setting minus 0.5% (2–4%)                                     |
| <b>Trip Delay Time</b>                    |  |
| <b>High, Low and Unbalanced Voltage</b>   | 1–30 seconds adjustable  |
| <b>Single-Phasing Faults</b>              | 1 second fixed   |
| <b>Restart Delay Time</b>                 |  |
| <b>After a Fault</b>                      | Manual, 1–500 seconds adjustable   |
| <b>After a Complete Power Loss</b>        | Manual, 1–500 seconds adjustable   |
| <b>Output Characteristics</b>             |  |
| <b>Output Contact Rating (1-Form C)</b>   |  |
| <b>Pilot Duty</b>                         | 480 VA @ 240 V ac, B300  |
| <b>General Purpose</b>                    | 10 A @ 240 V ac  |
| <b>General Characteristics</b>            |  |
| <b>Ambient Temperature Range</b>          |  |
| <b>Operating</b>                          | -40° to 70 °C (-40° to 158 °F)   |
| <b>Storage</b>                            | -40° to 80 °C (-40° to 176 °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>Standards Passed</b>                   |  |
| <b>Electrostatic Discharge</b>            | (ESD) IEC 61000-4-2, Level 3, 6 kV contact, 8 kV air   |
| <b>Radio Frequency Immunity, Radiated</b> | 150 MHz, 10 V/m  |
| <b>Fast Transient Burst</b>               | IEC 61000-4-4, Level 3, 3.5 kV input power and controls  |
| <b>Surge</b>                              |  |
| <b>IEC</b>                                | 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 UL 508 (2 x rated V +1000 V for 1 min.)  |
| <b>Enclosure</b>                          | Polycarbonate  |
| <b>Dimensions</b>                         | <b>H</b> 44.45 mm (1.75"); <b>W</b> 60.325 mm (2.375"); <b>D</b> 104.775 mm (4.125") (with socket) |
| <b>Weight</b>                             | 0.7 lb. (11.2 oz., 317.51 g)   |
| <b>Mounting Method</b>                    | DIN-rail or surface mount (plug in to OT08PC socket)   |
| <b>Socket Available</b>                   | 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!

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### Certification & Compliance

UL

UL 508 (File #E68520)

### Accessories

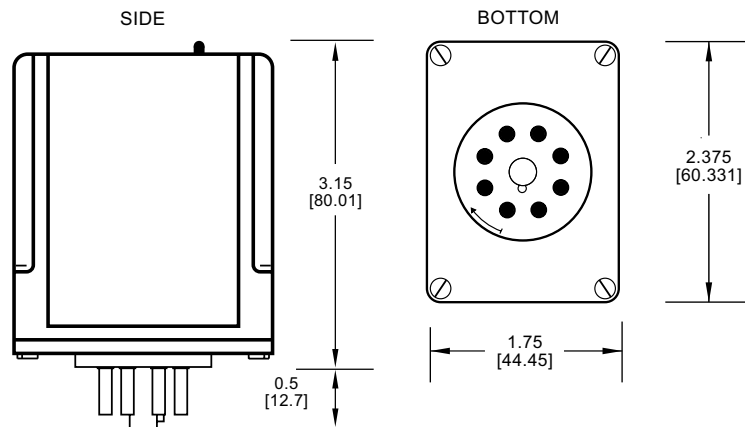
#### OT08PC Octal 8-pin Socket

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

### Ordering Information

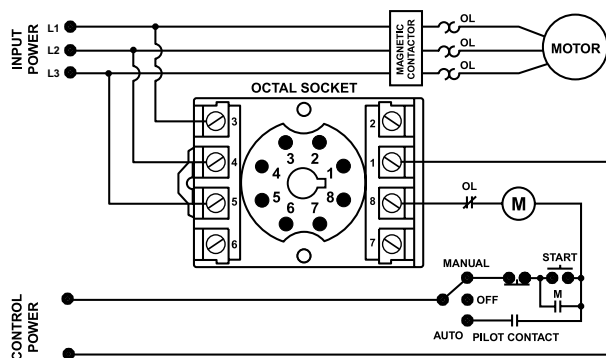
| MODEL         | LINE VOLTAGE | DESCRIPTION                   |
|---------------|--------------|-------------------------------|
| 201A-AU       | 190–480 V ac | DIN-rail or surface mountable |
| 201575-AU     | 475–600 V ac | DIN-rail or surface mountable |
| 201A-AU-OT    | 190–480 V ac | Sold with OT08PC socket       |
| 201-575-AU-OT | 475–600 V ac | Sold with OT08PC socket       |

### Dimensions Inches (mm)

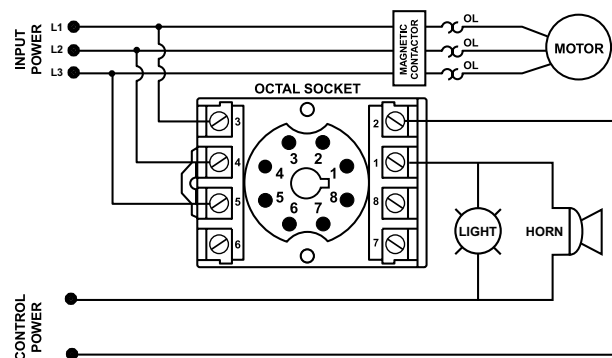


### Wiring Diagram

201A-AU WITH MOTOR CONTROL



201A-AU WITH ALARM CONTROL



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