



**ENGINEERING SPECIFICATION**  
**SYMCOM MODEL 201A-AU, 201-575-AU**  
**3-PHASE VOLTAGE MONITOR/PROTECTION RELAY**

**PART 1 GENERAL**

**1.1 REFERENCES**

- A. UL 508 Industrial Control Equipment – Underwriters Laboratories
- B. IEC 60947 Low Voltage Switchgear and Controlgear – International Electrotechnical Commission
- C. ANSI/IEEE C62.41 – American National Standards Institute/Institute of Electrical & Electronics Engineers
- D. CSA C22.2 No. 14 Industrial Control Equipment – Canadian Standards Association

**1.1 WARRANTY**

A. Manufacturer Warranty: The manufacturer shall guarantee the equipment to be free from material and workmanship defects for a period of five years from the date of manufacture when installed and operated according to the manufacturer's requirements.

**PART 2 PRODUCTS**

**2.1 MANUFACTURERS**

*For the 201A-AU*

The equipment specified shall be the Model 201A-AU, manufactured by SymCom, Inc.

*For the 201-575-AU*

The equipment specified shall be the Model 201-575-AU, manufactured by SymCom, Inc.

**2.2 DESCRIPTION**

- A. Regulatory Requirements:
  - 1. The equipment shall be UL Listed, when used with SymCom's model OT08 socket, as type NKCR—Industrial Control Equipment-Motor Controllers-Auxiliary Devices.
  - 2. The equipment shall be ULC Listed, when used with SymCom's model OT08 socket, as type NKCR7—Industrial Control Equipment-Motor Controllers-Auxiliary Devices Certified for Canada.
  - 3. The equipment shall be CE marked for use in the European Union and evaluated against IEC 60947 Low Voltage Switchgear and Controlgear.

**2.3 PERFORMANCE/DESIGN CRITERIA: 3-PHASE VOLTAGE MONITOR/PROTECTION RELAY**

- A. Protective Relay Functions
  - 1. The equipment shall provide protection against the following conditions:
    - 1) phase loss (single-phasing)
    - 2) phase reversal
    - 3) high/low voltage ( $\pm 10\%$  of nominal setting)
    - 4) voltage unbalance
- B. Capabilities and Features
  - 1. Inputs
    - For the 201A-AU*
    - a. The equipment shall accept 3-phase input voltage rated 190-480VAC.
    - For the 201-575-AU*
    - a. The equipment shall accept 3-phase input voltage rated 475-600VAC.
  - 2. Outputs
    - a. The equipment shall include one isolated SPDT output relay contact pilot duty rated 480VA @ 240VAC.
    - b. The equipment shall include one isolated SPDT output relay contact general purpose rated 10A @ 240VAC.
  - 3. Functional Specifications
    - a. The equipment shall include:
      - 1) high voltage trip 110%
      - 2) high voltage reset 107%
      - 3) low voltage trip 90%
      - 4) low voltage reset 93%
      - 5) a trip delay of 1-30 seconds, adjustable, for low, high, and unbalanced voltage faults
      - 6) a trip delay of 1 second for single-phasing faults
      - 7) a restart delay of 1-500 seconds adjustable, or manual reset.
      - 8) an adjustable voltage unbalance of 2-8%
      - 9) voltage accuracy  $\pm 1\%$
    - b. The equipment shall have an indicator light. The indicator light shall have the capability to indicate whether the equipment is in run mode, restart delay mode, or fault mode.
      - 1) Fault modes shall be low voltage, high voltage, unbalance/single-phase, and phase reversal.



C. Electromagnetic Compatibility

1. The equipment shall be immune to electrostatic discharge per IEC 61000-4-2, Level 3, 6kV contact discharge and 8kV air discharge.
2. The equipment shall be immune to electrical fast transient bursts exceeding IEC 61000-4-4, Level 4. Specified limits shall be 4kV input power and controls.
3. The equipment shall be immune to electrical surges per IEC 61000-4-5, Level 4. Specified limits shall be 4kV line-to-line, and Level 4, 4kV line-to-ground.
4. The equipment shall be immune to electrical surges per ANSI/IEEE C62.41 Surge and Ring Wave. Specified limits shall be 6kV line-to-line.
5. The equipment shall be immune to radiated radio frequency emissions. Specified limits shall be 10V/m at 150 MHz.

D. Dielectric Isolation: Equipment withstands an alternating current potential of 1000V plus twice the rated voltage of the equipment for 1 minute without breakdown between uninsulated live parts and the enclosure with the contacts open and closed; between terminals of opposite polarity with the contacts closed; and between uninsulated live parts of different circuits.

E. Environmental Requirements

1. The equipment shall operate continuously without de-rating in surrounding air temperatures of -40° to 70°C (-40° to 158°F).
2. The equipment shall operate continuously without de-rating in relative humidity of 10% up to 95% non-condensing per IEC 68-2-3.
3. The equipment shall operate properly after storage in ambient temperatures of -40° to 80°C (-40° to 176°F).

F. Dimensions: The equipment dimensions shall not exceed 1.750" H x 2.375" W x 4.125" D (with socket).

G. Mounting:

1. The equipment shall be mounted using the SymCom OT08 8-pin octal socket.
  - a. The socket shall be 600V rated.
  - b. The socket shall be 10A rated.
  - c. The socket shall provide a means for mounting on the surface or on a DIN rail.

End of Section