



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