



## ENGINEERING SPECIFICATION

### SYMCOM MODEL 50R-100 SINGLE-PHASE VOLTAGE MONITOR/PROTECTION RELAY

#### PART 1 GENERAL

##### 1.1 REFERENCES

- A. UL 508 Industrial Control Equipment – Underwriters Laboratories

##### 1.2 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

The equipment specified shall be the Model 50R-100, manufactured by SymCom, Inc.

##### 2.2 DESCRIPTION

- A. Regulatory Requirements:
  - 1. The equipment shall be UL Listed as type NKCR—Industrial Control Equipment-Motor Controllers-Auxiliary Devices.
  - 2. The equipment shall be ULC Listed as type NKCR7—Industrial Control Equipment-Motor Controllers-Auxiliary Devices Certified for Canada.

##### 2.3 PERFORMANCE/DESIGN CRITERIA: SINGLE-PHASE VOLTAGE MONITOR/PROTECTION RELAY

- A. Protective Relay Functions
  - 1. The equipment shall provide protection against the following conditions:
    - a. low voltage
- B. Capabilities and Features
  - 1. Inputs
    - a. The equipment shall accept single-phase input voltage range of 95-120VAC.
    - b. The equipment shall accept single-phase input voltage at 50/60Hz.
  - 2. Outputs
    - a. The equipment shall include one Form C (SPDT) output relay. Contacts pilot duty rated 480VA@240VAC. Contacts general purpose rated 10A@240VAC.
  - 3. Functional Specifications
    - a. The equipment shall include:
      - 1) a low voltage trip of 90% of nominal setting
      - 2) a trip delay of 4 seconds
      - 3) a restart delay of 2 seconds
      - 4) voltage accuracy  $\pm 1\%$
    - b. The equipment shall include one indicator light. The indicator light has the capability to indicate run mode, restart delay mode, or low voltage fault condition.
- 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 3. Specified limits shall be 3.5kV.
  - 3. The equipment shall be immune to electrical surges per IEC 61000-4-5. Specified limits shall be  $\pm 6$ kV line-to-line and line-to-ground.
- 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 derating in ambient temperatures of  $-20^{\circ}$  to  $70^{\circ}$ C ( $-4^{\circ}$  to  $158^{\circ}$ F).
  - 2. The equipment shall operate continuously without derating 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  $-40^{\circ}$  to  $80^{\circ}$ C ( $-40^{\circ}$  to  $176^{\circ}$ F).
- F. Dimensions: The equipment dimensions shall not exceed 2.93" H X 5.27" W X 2.95" D.
- G. Mounting:
  - 1. The equipment shall be surface mountable.

End of Section