



**ENGINEERING SPECIFICATION**  
**SYMCOM MODELS PC-100-LLC-GM / PC-200-LLC-GM**  
**2-INPUT, LIQUID LEVEL CONTROL**

**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 product 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 Model PC-100-LLC-GM*

The equipment specified shall be the Model PC-100-LLC-GM, manufactured by SymCom, Inc.

*For Model PC-200-LLC-GM*

The equipment specified shall be the Model PC-200-LLC-GM, 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.
  - 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: 2-INPUT, SINGLE PHASE LIQUID LEVEL CONTROL**

- A. Capabilities and Features
  - 1. The equipment shall include:
    - For Model PC-100-LLC-GM*
    - a. A voltage range of 95-120VAC
    - For Model PC-200-LLC-GM*
    - a. A voltage range of 190-240VAC
  - 2. The equipment shall have a probe input debounce time delay of 2 seconds.
  - 3. The equipment shall include inputs for High and Low Probes with one common connection.
  - 4. The equipment shall include an adjustment knob that allows the user to select Pump-Up operation or Pump-Down operation.
  - 5. The equipment shall include an adjustment knob that allows the user to select the sensitivity of the probe inputs from 4.7k to 100k.
  - 6. The equipment shall operate as follows when set for Pump-Up operation:
    - a. The relay shall energize when the resistances of the Low Probe and High Probe are above the sensitivity threshold.
    - b. The relay shall de-energize when the resistance of the High Probe is below the sensitivity threshold regardless of the Low Probe.
  - 7. The equipment shall operate as follows when set for Pump-Down operation:
    - a. The relay shall energize when the resistance of the High Probe is below the sensitivity threshold regardless of the Low Probe.
    - b. The relay shall de-energize when the resistances of the Low Probe and High Probe are above the sensitivity threshold.
  - 8. The equipment shall include one relay output pilot duty rated 480VA at 240VAC.
  - 9. The equipment shall include one relay output general purpose rated 10A at 240VAC.
  - 10. The equipment shall have one green indicator light. The light shall turn on when the relay is energized, and turn off when the relay is de-energized.
  - 11. The equipment shall allow single probe operation by leaving the Low Probe input open, and using the High Probe input and common connection.
- B. Electromagnetic Compatibility
  - 1. The equipment shall be immune to electrostatic discharge per IEC 61000-4-2, Level 3, 6 kV contact discharge and 8 kV air discharge.
  - 2. The equipment shall be immune to electrical fast transient bursts exceeding IEC 61000-4-4, Level 3. Specified limits shall be



- 2kV.
3. The equipment shall be immune to electrical surges per IEC 61000-4-5, Level 2 and Level 4. Specified limits shall be Level 4, 4kV line-to-line; Level 4, 4kV line-to-ground, and Level 2, 1kV probe inputs-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.
- B. 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.
- C. Environmental Requirements
1. The equipment shall operate continuously without derating in surrounding air temperatures of -40° to 70°C (-40° to 158°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° to 80°C (-40° to 176°F).
- D. Dimensions: The equipment dimensions shall not exceed 1.750" H x 2.375" W x 4.125 D" (with socket).
- E. Mounting:
1. The equipment shall be mounted using the SymCom OT08-PC 8-pin 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