

## INSTRUCTION SHEET – Type SPD-LA Series

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The PQI LA Series of Surge Protection Devices (SPD) are UL 1449 Ed. 4 Type 1 devices designed to provide protection to service panels, load centers or where the SPD is directly connected to the electrical device requiring protection. The **LA Series** SPD is UL Type 4X rated, and is supplied with wiring leads for a direct hardwired connection. Maximum protection will only be achieved if the SPD is properly installed. Please carefully read and follow the installation instructions.



**DANGER:** Electrical shock or burn hazard. Installation of this SPD should only be made by qualified personnel. Failure to lockout electrical power during installation or maintenance can result in fatal electrocution or severe burns.



**CAUTION:** Check to make sure system voltages do not exceed the SPD voltage requirement and the correct SPD voltage/model has been selected.



**CAUTION:** This unit must be installed in accordance with the National Electrical Code (ANSI/NFPA-70) and any applicable local codes.



**CAUTION:** Ungrounded power systems are inherently unstable and can produce excessively high line-to-ground voltages during certain fault conditions. During these fault conditions any electrical equipment, including an SPD, may be subjected to voltages which exceed their designed ratings. This information is being provided to the user so that an informed decision can be made before installing any electrical equipment on an ungrounded power system.

**NOTICE:** Do not cut wires until the SPD is mounted and minimum wire lengths have been verified. All connection leads should be cut to minimum possible length; never coil or push aside excess length.

**NOTE:** For outdoor installations, include drip loop as additional precaution.

## INSTALLATION INSTRUCTIONS

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1. **Verify system voltage** by measuring L-N, L-G, L-L and N-G of the system. Confirm that the SPD is correctly rated for the system to which it is to be connected by comparing the measured voltages to the SPD voltage ratings shown on the product side rating label. The measured voltage should match the nominal operating voltage of the product, the maximum continuous operating voltage (MCOV) specifications must not be exceeded.
2. **Identify proper location for the SPD.** Locate the unit as close as physically possible to the panel being protected and as close to the electrical connection as possible to avoid excess lead lengths and the need for sharp bends in the wires. Mount top and bottom SPD flanges securely. Use appropriate cable glands to preserve the SPD/panel NEMA-4 enclosure rating.
3. **Connect Ground.** With power off, attach the grounding conductor to the panel's ground bus.

Wire length should be minimized to improve performance. There is no minimum wire length requirement. Connect neutral conductor. The units are supplied with #10AWG leads. The white Neutral conductor is 914mm (3ft) long.

**Note 1:** The Type SPD-LA 120/240SP does not have a grounding conductor, it utilizes a grounded (neutral) conductor for operation.

**Note 2:** For isolated ground systems, bond the grounding conductor from the Type SPD-LA unit to the non-isolated equipment ground, not the isolated equipment ground.

4. **AC Rated Units:** Connect Neutral & Phase Conductors. The Type SPD-LA SPDs are supplied with 12AWG leads for a direct hardwired connection. With the POWER OFF, connect the neutral conductor of the SPD to the neutral lug in the panel. Connect each black lead (phasing is not critical to the operation). Wire lengths should be minimized to improve

performance. There is no minimum wire length requirement. The Type SPD-LA Series of SPDs are rated as a UL 1449 Ed. 4 Type 1 Device, therefore, no overcurrent protection is required. However, if overcurrent protection is desired, use a 20A fuse.

5. **Connector and Lugs.** Pressure terminals or pressure splicing connectors and soldering lugs used in the installation of the PQLA unit shall be identified as being suitable for use with the conductors. Conductors of dissimilar metals shall not be intermixed in a terminal or splicing connector where physical contact occurs between dissimilar conductors unless the device is identified for the purpose and conditions of use.
6. **Activate Unit.** When the power is applied, the blue LED diagnostic light(s) will indicate that the unit is operational and protection is being

provided. If any LED's do not illuminate, recheck all connections.

7. **Flush Mount Accessory.** For installations requiring a supplemental mounting bracket, order part PQLAFP and follow the supplied instructions.
8. **LED Diagnostics.** The blue LED diagnostic light(s) are illuminated when the unit is providing protection. If one or more blue LED light(s) extinguish, check the power connections (and over-current protection device, if present). If power is being correctly supplied, and one or more of the LEDs are not illuminated, the unit requires prompt replacement. Contact your PQ Protection representative.

## DANGER

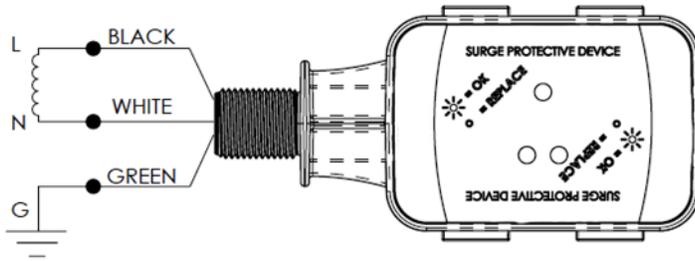
ELECTRICAL SHOCK OR BURN HAZARD. HAZARDOUS VOLTAGES EXIST INTERNAL TO THE UNIT. THIS UNIT SHOULD BE INSTALLED AND SERVICED ONLY BY QUALIFIED PERSONNEL IN CONFORMANCE WITH ALL GOVERNING CODES AND INSTRUCTIONS. FAILURE TO LOCKOUT ELECTRICAL POWER DURING INSTALLATION OR MAINTENANCE CAN RESULT IN FATAL ELECTROCUTION, SEVERE BURNS, OR OTHER INJURIES. BEFORE WORKING WITH OR MAKING ANY CONNECTIONS TO THIS DEVICE, BE SURE THAT POWER HAS BEEN REMOVED FROM ALL ASSOCIATED WIRING, ELECTRICAL PANELS, AND OTHER ELECTRICAL EQUIPMENT.

1. The power supply to the unit should always be turned (and locked) OFF before the unit is accessed for any reason.
2. Prior to installation, ensure that the unit is of the correct voltage, current, phasing, and frequency for the applicable rating of the power distribution system.
3. Diagrams are for reference

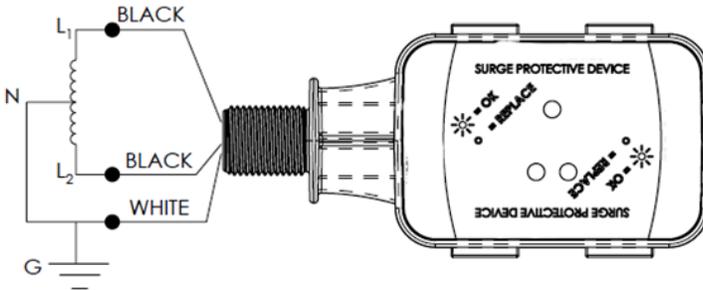
## WARNING

1. PQI products shall be installed and used only as indicated in PQI product instruction sheets and training materials. Instruction sheets are available at [www.powerqualityinternational.com](http://www.powerqualityinternational.com) and from your PQI customer service representative.
2. PQI products must never be used for a purpose other than the purpose for which they were designed or in a manner that exceeds specified load ratings.
3. All instructions must be completely followed to ensure proper and safe installation and performance.
4. Improper installation, misuse, misapplication or other failure to completely follow PQI's instructions and warnings may cause product malfunction, property damage, serious bodily injury and death.

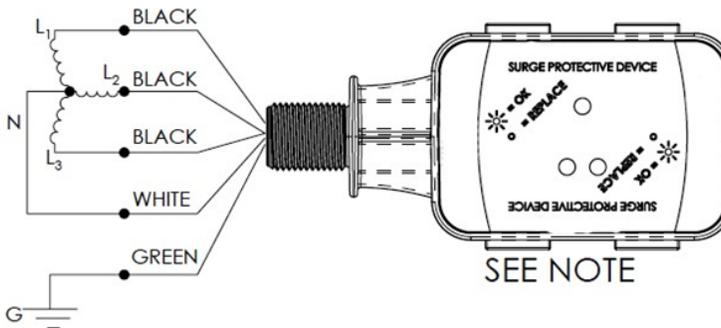
## Wiring Diagrams



Type SPD-LA, 120V, 1 Phase &  
Type SPD-LA, 240V, 1-Phase



Type SPD-LA, 120/240V, Single-Phase



Type SPD-LA, 120/208V, 3-Phase Y &  
Type SPD-LA, 277/480V, 3-Phase Y

**NOTE:** For 3-Phase, 4-Wire 480V WYE (no neutral) systems or 3-Phase 240V and 480V DELTA systems, cut neutral wire and cap.