

SES40 Series

The **SES40** Series of Surge Protection Devices (SPD) are designed to provide protection to service panels, load centers or where the SPD is directly connected to the electronic device requiring protection. Maximum protection will only be achieved if the SPD is properly installed. Please read the following installation instructions carefully and follow the instructions.

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

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

⚠ CAUTION 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.

INSTALLATION INSTRUCTIONS

DANGER

ELECTRICAL SHOCK OR BURN HAZARD. HAZARDOUS VOLTAGES EXIST INTERNAL TO THE SES40. 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 SES40 should always be turned (and locked) OFF before the unit is accessed for any reason.
2. Prior to installation, ensure that the SES40 is of the correct voltage, current, phasing, and frequency for the applicable rating of the power distribution system.
3. This unit must be installed on the load side of the main over-current protection.
4. Diagrams are for reference only. Schematics are representative of typical applications and are only to be used for reference.

WARNING

1. ERICO products shall be installed and used only as indicated in ERICO product instruction sheets and training materials. Instruction sheets are available at www.erico.com and from your ERICO customer service representative.
2. ERICO 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 ERICO's instructions and warnings may cause product malfunction, property damage, serious bodily injury and death.

SAFETY INSTRUCTIONS: All governing codes and regulations and those required by the job site must be observed. Always use appropriate safety equipment such as eye protection, hard hat, and gloves as appropriate to the application.



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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 so as 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 enclosure rating.

Suitable for use on a Circuit Capable of Delivering Not More Than 200,000 rms symmetrical Amperes

3. **Connect proper ground.** An insulated grounding conductor that is identical in size and insulating material and thickness to the grounded and ungrounded circuit supply conductors, except that it is green with or without one or more yellow stripes, is to be installed as part of the circuit that supplies the SES40. The SES40 is supplied with 914mm (3ft) long of #10AWG, in accordance with Table 250-122 of the National Electrical Code, for this purpose. The housing of the SES40 unit is bonded to the grounding conductor for equipment safety ground purposes as per National Electrical Code. The grounding conductor is to be grounded to earth at the service equipment or other acceptable building ground such as the building frame in the case of a high-rise steel-frame structure. Attach the grounding conductor to the panel's ground bus for proper operation. Wire length should be minimized to improve performance. There is no minimum wire length requirement.
Note: For isolated ground systems, bond the grounding conductor from the SES40 unit to the non-isolated equipment ground, not the isolated equipment ground.
4. **Connect neutral conductor.** The SES40 units are supplied with #10AWG leads. The white Neutral conductor is 914mm (3ft) long. Wire length should be minimized to improve performance. There is no minimum wire length requirement. Measure and trim the neutral conductor to be as straight and short as possible. Connect the neutral conductor of the SPD to the neutral lug on the panel.
5. **Connect phase conductors.** The phase wires are black in color and labeled L1 and L2. The orientation is not critical to the operation. With the POWER OFF, connect each black phase lead. Upstream over current protection is not required for the SES40 product, and over current protection is integral to the product*.

* Note: In Australia, New Zealand and some other countries it is not permitted to omit over-current protection.

The SES40 units are supplied with #10AWG leads. Phase conductors are 610mm (2ft) long. Wire length should be

minimized to improve performance. There is no minimum wire length requirement.

6. **Nearby Attachment-Plug Receptacles**
Any attachment-plug receptacles in the vicinity of the SES40 unit are to be of a grounding type, and the grounding conductors serving these receptacles are to be connected to earth ground at the service equipment or other acceptable building earth ground such as the building frame in the case of a high-rise steel-frame structure.
7. **Connector and Lugs**
Pressure terminals or pressure splicing connectors and soldering lugs used in the installation of the SES40 unit shall be identified as being suitable for the material of 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.
8. **Activate unit.** When the power is applied, the single RED LED diagnostic light will indicate that the unit is operational and protection is being provided. If the status light does not illuminate, please recheck any supply fuse as well as the phase, neutral and ground connections.
9. **Flush Panel Mounting.** For flush panel mounting, please order the flush cover plate and follow the instructions supplied.
10. **Alarm Conditions.** The RED LED diagnostic light will extinguish. Please check the power connections and supply fuses if this condition occurs. If power is being correctly supplied to both phases and the alarm condition remains, the unit requires prompt replacement.
11. **Problem Diagnostics.** If problems continue after checking the electrical connections, contact your local ERICO representative.

