Whole House Surge Protection
Type 1 Plug-on Surge Protective Devices (Plug-on SPDs)
POSP 20 series

PROSURGE® POSP 20 series plug-on SPDs are heavy-duty UL Type 1 Surge Protective Devices (SPDs) with nominal discharge current up to **20,000**A, designed for whole-house protection of electronics and electrical circuits to against the risk of harmful effects of transient surges which are the result of:

– Direct and indirect lightning strikes
– Power company load switching
– Upstream load switching at other facilities

POSP 20 is plug-on design, can be easily plugs into universal 1-inch (25.4mm) spaces load center and requires two adjacent mounting spaces (see Load Center Compatibility List below), deliver superior surge suppression performance by eliminating lead lengths.

Due to be constructed with Prosurge patented PTMOV , POSP has a significant advantage in abnormal over-voltage & high fault current safety and thus ensure industry's highest level of safety and performance. An indicator LED to demonstrate the power & protection status. This unit is tested and classified as Type 1 SPD per ANSI/UL1449 5th Edition.

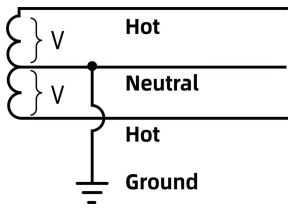
The SPD Types Per ANSI / UL 1449 5th:

Type 1 *– Permanently connected SPDs intended for installation between the secondary of the service transformer and the line side of the service equipment overcurrent device, as well as the load side, including watt-hour meter socket enclosures and Molded Case SPDs intended to be installed without an external overcurrent protective device.*

- **Features:**
  - UL 1449 5th Edition Classified Type 1 SPDs with SCCR 10kArms without external fuse or CB
  - Prosurge Patented SCCR 200 kArms thermally protected MOV technology(PTMOV) as key component
  - Nominal discharge current **20,000** A 8/20μs per mode
  - **50,000** A 8/20μs surge current capacity for suppression of high-energy surges
  - Quick plug-in design fits mainstream 1-inch pitch load centers, occupies two pole spaces and installs easily. (see Load Center Compatibility List below)
  - Superior surge suppression performance by eliminating lead lengths.
  - Full mode protection
  - Easy-to-Understand LED failure indicator

Fig. 1. Plug- on install on Load center

■ Configure & Ordering Information:

POSP series	**120SP** **Voltage and system configuration**	**20** **Nominal discharge current**
***POSP**: Plug-on SPD*	***120SP**: 120/240V split phase 3W (L1,L2,N)*  	***20**: 20kA* ***05**: 5kA*

WARNING !

Select the proper SPD unit according to your system voltage, configuration, and the anticipated surge environment.

Prior to install the SPD, ensure that your facility electric supply system is properly installed and connected in according with all applicable national and local codes and safety procedure.

Never Hi-Pot Test Any SPD. (Will prematurely fail SPD)

■ Technical Data:

Catalog Number	**POSP120SP20**
Certification	UL 1449 5th Edition, Surge Protective Devices Certified for Use in Specified Equipment (E547924)
SPD Type	Type 1 SPD
Power System	Split phase 3W, (L1, L2, N) 120/240Vac
Max. Continuous Operating voltage (MCOV)	L-N :150Vac L-L:300Vac
Surge Capacity per Phase (8/20μS)	50kA per Phase
Nominal Discharge Current (In, 8/20μS)	20kA
Voltage Protection Rating (VPR)	L-N:600V L-L:1000V
Short Circuit Current Rating (SCCR)	10kArms
Power Status Indication	Normal= LED ON
Working Status Indication	Fail= LED OFF, need to be replaced
Power Connecting	Hot line: Quick plug on to the bus Neutral line: #12AWG,305mm (12'') length, connect to neutral bus
Installation Width	Two 1-inch poles
Working environments	Temperature –40℃～+75℃; Humidity relative 5~95% (25℃)
Dimensions, L x W x H	74x50x64.5mm (2.91''x 1.97'' x 2.54'')
Enclosure	Plastic enclosure
Net weight	200g (0.44lbs)
Warranty	5 years

WARNING!

Only qualified personnel should install or service this system. Electrical safety precautions must be followed when installing or servicing this equipment. To prevent risk of electrical shock, turn off and lock out all power sources to the unit before making electrical connections or servicing.

For proper and safe operation, neutral and ground MUST be reliably connected. Failure to operate this unit from a solidly grounded power source of the proper configuration will reduce or impede operation and may result in unit failure.

■ Installation Instructions:

Per UL1449, Type 1 SPDs can be suitable for use in anywhere in the house. For better surge protection, it's recommended that the surge protective devices (SPDs) POSP should be wired to the electric service box (the breaker panel) and located nearby to protect all the appliances and electrical systems in the house. Pre-install, please be noticed:

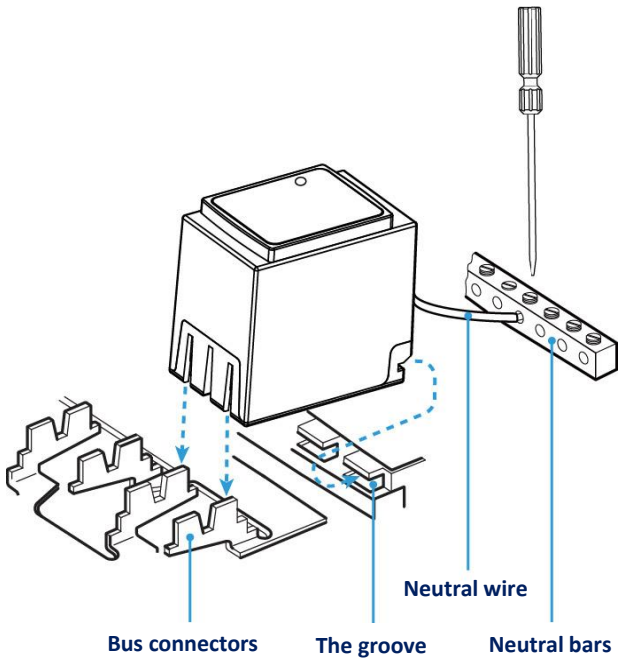


Fig. 2. Typical Installation Diagram

- Select the proper **PROSURGE POSP** series SPD unit according to your system voltage, configuration and the anticipated surge environment. (SPD rated as 120V will fail instantly on 230V, 240V or higher rating power system).
- Prior to install the SPD, ensure that your facility electric supply system is properly installed and connected in according with all applicable national and local codes and safety procedure.
- The SPD requires two adjacent mounting spaces (Two 1-inch poles). Refer to the following load center compatibility list from various manufacturers.
- Must be installed as close to neutral bars and main circuit breaker or main lugs as possible. Ensure the SPD jaws fully engage bus connectors.
- The neutral wire(white wire) lengths must be kept at a minimum for the best performance, excess wires need to be cut and not coiled up.
- Never Hi-Pot test Any SPD. (Will prematurely fail SPD).

■ Load Center Compatibility List

Universal 1-inch (25.4mm) pitch Load Center:

- Schneider Electric Square D Homeline Series (Circuit Breaker type "HOM")
- Eaton or Cutler-Hammer BR Series (Circuit Breaker type "BR")
- Siemens or Murray PN, SN, ES, PL, LC or EQ Series (Circuit Breaker type "Q" or "QP")
- ABB/General Electric PowerMark Gold Series (Circuit Breaker type "THQL")

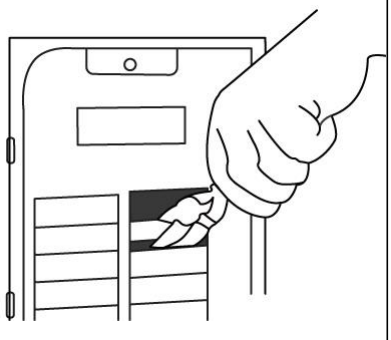


Fig. 3. Remove two twist-outs

■ Installation Steps

1. Disconnect power to load center or panel board.
2. Remove the cover of the load center or panel board.
3. Plug the SPD into the selected location and fit securely (see Fig. 2).
4. Cut the neutral wire to required length,connect the SPD to the neutral bars (see Fig. 2).

5. Remove two twist-outs from the panel cover at the location of the SPD (see Fig. 3).
6. Re-install the panel cover.
7. Re-apply power and verify the LED indicator light on the SPD illuminates (see Fig. 4).

■ Fault Indication

1. Apply power to the SPD and assure status indications are normal. Power LEDs is illuminated green under normal conditions.
2. When the power lines lose protection, the LED will be off and SPD needs to be replaced.

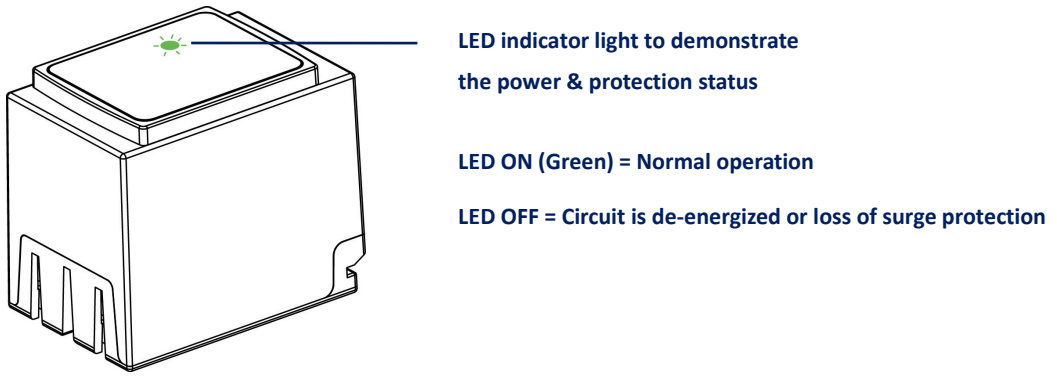


Fig. 4. LED indicator light status

■ Troubleshooting & Maintenance:

If the indicator light is not on, check all connections and voltages to the unit . If the unit loses protection, it must be replaced promptly. To remove the unit, first disconnect power to the load center. Firmly grasp the edges of the faulty unit with the pull it from the base. Remove the Neutral wire(white wire) connected to the neutral bar. Discard of the faulty unit and replace with a new one.

If all connections are made and verified reliable, and proper voltages are supplied to the unit, please contact www.Prosurge.com.

■ Warranty & Service:

During the time period of 5 years and subject to all Conditions and Limitations stated below, PROSURGE warrants to the original purchaser who purchased a brand-new Surge Protection Device (the "SPD") directly from PROSURGE or its authorized distributor that the SPD is free of defect in material and workmanship, PROSURGE assumes no risk or liability for the results of the use of the SPD purchased, including but without limitation: (1) The use in combination with any electrical or electronic components, circuits, systems, assemblies, or any other materials or substances; (2) Unsuitability of any product for use in any circuit or assembly.

This warranty excludes any liability for labor for removal of this product or reinstallation. This warranty is void if this product is installed improperly or in an improper environment, overloaded, misused, opened, abused, or altered in any manner, or is not used under normal operating conditions or not in accordance with any labels or instructions.

Products claimed to be nonconforming or defective must be promptly be returned to PROSURGE or their authorized representative for testing and confirmation of damage within 30 days from the date the event occurred. If PROSURGE finds the return to be a manufacturer’s defect or surge damage, the replacement will be returned prepaid. PROSURGE shall in no event be responsible if the products have not been stored or used in accordance with its specifications and recommended procedures. PROSURGE will, at its option, either repair or replace nonconforming or defective products.