

PSP B series



PROSURGE® PSP B series panel SPDs are compact Surge Protective Devices (SPDs) designed to protect single and multi-phase electrical distribution systems against the harmful effects of transient surges. These surges are the result of:

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

The PSP B is constructed with Prosurge’s patented PTMOV (20PTMOV), which has a thermally protected and arc extinguishing technology as the core of Prosurge’s competency. PSP B has a significant advantage in abnormal over-voltage & high fault current safety and thus ensure industry’s highest level of safety and performance.

PSP B is tested and listed as UL1449 5th, C22.2 Type 1 and Type 2 SPD (with sine wave tracking function). It is constructed in a NEMA

4X plastic enclosure to ensure that dirt, dust and water are resisted for either indoor or outdoor usage, and with indicator and two colored LEDs to demonstrate the power & protection status of protected power phase.

**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.*

*Type 2 – Permanently connected SPDs intended for installation on the load side of the service equipment overcurrent device; including SPDs located at the branch panel and Molded Case SPDs.*

■ **Typical Applications:**

In low & medium exposure locations

- Commercial
- Industrial
- Communications
- Renewable energy
- Critical power (hospitals, data centers, etc)

**Outstanding PTMOV Technology**

*Thermally Protected MOV technology. Fast and safely disconnect in the case of abnormal over-voltage or current fault conditions.*



■ **Features:**

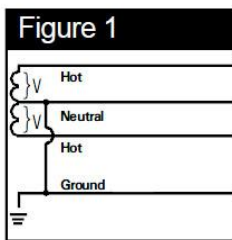
- UL 1449 5<sup>th</sup> & CSA C22.2 Type 1 SPDs with SCCR up to 200kArms without external fuse or CB
- UL 1449 5<sup>th</sup> & CSA C22.2 Type 2 SPDs with Sine Wave Tracking
- Nominal discharge current 10kA 8/20 μ s
- Prosurge Patented SCCR 200kArms thermally protected MOV technology (PTMOV) as key component
- Full modes protection
- High surge energy capability with compact size
- Low voltage protection rating
- Degradation failure indication.
- Sine wave tracking function optional (for UL Type 2 listed)
- Remote Alarm optional
- Threaded NPT
- NEMA 4X plastic enclosure to resist dirt, dust and water

■ **Configure & Ordering Information:**

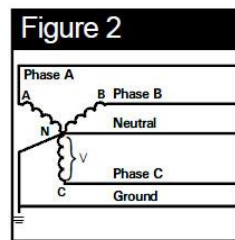
<u>PSP</u> Model series	<u>277Y</u> Voltage and system configuration	<u>C</u> Protection mode	<u>12</u> Surge capacity	<u>/ T1</u> SPD Category	<u>A</u> Function
<u>PSP</u>	<p><u>120SP</u>: 120/240V split</p> <p><u>240SP</u>: 240/480V split</p> <p><u>120Y</u>: 120/120V WYE</p> <p><u>277Y</u>: 277/480V WYE</p> <p><u>120H</u>: 120/240V high leg delta</p> <p><u>240D</u>: 240V delta</p> <p><u>120S</u>: 120V 1ph, 2W+G</p> <p>...</p>	<p><u>C</u>: Delete N-G protection mode</p>	<p><u>12</u>: 50kA per phase</p>	<p><u>T1</u>: UL type 1 SPD</p> <p><u>T2F</u>: UL type 2 SPD with sine wave tracking</p>	<p><u>A</u>: Remote Alarm</p>

1. **Voltage code for power distribution system**

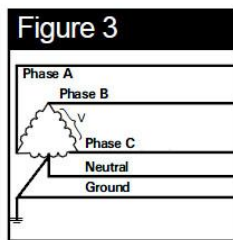
- 120SP, 240SP= 120/240V;240/480V-----Split-phase three-wire + ground (Figure1)
- 120Y, 127Y, 240Y, 277Y, 347Y = 208Y/120V,220Y/127V, 415Y/240V, 480Y/277V, 600Y/347V-----Three-phase wye (star) four-wire + ground (Figure2)
- 120H,240H = 120/240V, 240V/480V-----Three-phase high leg delta (Figure3)
- 240D, 480D, 600D = 240V,480V,600V-----Three-phase delta three-wire + ground (Figure4)
- 120S,127S,240S,277S,347S =120V,127V, 240V,277V, 347V-----Single-phase two-wire + ground (Figure5)



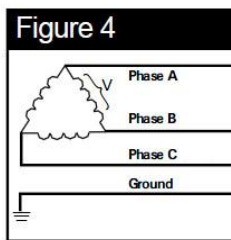
SPLIT  
2 Hots, 1 Neu, 1 Grnd



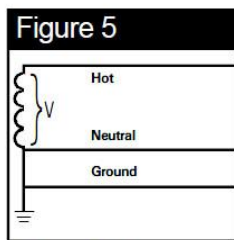
WYE  
3 Hots, 1 Neu, 1 Grnd



HI-LEG DELTA (B High)  
3 Hots, (B HIGH),  
1 Neu, 1 Grnd



DELTA & HRG WYE  
3 Hots, 1 Grnd



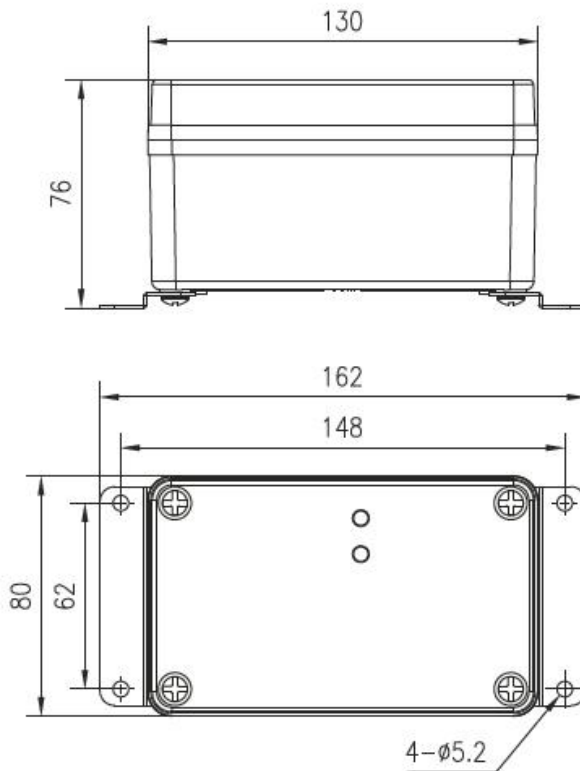
SINGLE POLE  
1 Hot, 1 Neu, 1 Grnd

Basic circuit diagram

Un/ Power system (50/60 HZ)	Basic circuit diagram of surge protection circuit	
	Power System has Neutral Line	Power System has No Neutral Line
120/240 VAC Split phase 240/480 VAC Split phase ...	PSP... <b>SP12</b> ...(3W+G) 	PSP... <b>SPC12</b> ...(2W+G) 
120 VAC single phase 127 VAC single phase 220 VAC single phase 230 VAC single phase 240 VAC single phase 277 VAC single phase 347 VAC single phase ...	PSP... <b>S12</b> ...(2W+G) 	
120/208 VAC WYE 127/220 VAC WYE 220/380 VAC WYE 230/400 VAC WYE 240/415VAC WYE 277/480 VAC WYE 347/600 VAC WYE ...	PSP... <b>Y12</b> ...(4W+G) 	PSP... <b>YC12</b> ...(3W+G) 
240 VAC Delta 480 VAC Delta 600 VAC Delta ...		PSP... <b>D12</b> ...(3W+G) 
240/480 VAC Hi-leg delta ...	PSP... <b>H12</b> ...(4W+G, L2 is High leg) 	PSP... <b>HC12</b> ...(3W+G, L2 is High leg) 

### ■ Dimensions (unit: mm)

PSP series can be fixed with bolts. The dimension of the devices and bolt holes as below:



### ■ General Specification:

Category	PSP B
Certification	ANSI/UL1449 5 <sup>th</sup> edition CSA C22.2, Type1, Type 2 SPD
Connection Type	Parallel Connected
Surge Capacity	50kA per Phase
Nominal discharge current In	10kA
SCCR	200kArms
Sine wave tracking	Optional for UL Type 2 listed
Power Status Indication	Normal = Power LED ON
Working Status Indication	Fail = Surge protection LED ON
Power Connecting	12 AWG, 762mm (30") length
Signal cable	16 AWG, 762mm (30") length (C=red; NC=blue; NO=brown)
Working environments	Temperature -40°C ~ +75°C, Humidity relative 5~95% (25°C), Altitude ≤ 3km
Dimensions (W x D x H)	162 x 80 x 76 mm
Threaded NPT	1/2"NPT
Enclosure	Plastic enclosure, NEMA 4X
Net Weight (typical value)	0.47 kg

## ■ Technical Data:

Model No.	System voltage (50/60Hz)	In (kA)	Protected mode				Voltage Protection Ratings (VPR @6kV/ 3kA)				Surge Capability	MCOV (Vac)
			L-N	L-G	N-G	L-L	L-N	L-G	N-G	L-L		
PSP120SP12/*A	120/240V Split-phase	10	✓	✓	✓	✓	700	700	700	1200	50kA/phase	150/300 <sup>(1)</sup>
PSP120SPC12/*A	120/240V Split-phase	10	✗	✓	✗	✓	-	700	-	1200	50kA/phase	150/300 <sup>(1)</sup>
PSP240SP12/*A	240/480V Split-phase	10	✓	✓	✓	✓	1200	1200	1200	2000	50kA/phase	320/640 <sup>(1)</sup>
PSP240SPC12/*A	240/480V Split-phase	10	✗	✓	✗	✓	-	1200	-	2000	50kA/phase	320/640 <sup>(1)</sup>
PSP120Y12/*A	208Y120V Three-phase wye	10	✓	✓	✓	✓	700	700	700	1200	50kA/phase	150
PSP120YC12/*A	208Y120V Three-phase wye	10	✗	✓	✗	✓	-	700	-	1200	50kA/phase	150
PSP127Y12/*A	220Y127V Three-phase wye	10	✓	✓	✓	✓	700	700	700	1200	50kA/phase	150
PSP127YC12/*A	220Y127V Three-phase wye	10	✗	✓	✗	✓	-	700	-	1200	50kA/phase	150
PSP240Y12/*A	415Y/240V Three-phase wye	10	✓	✓	✓	✓	1200	1200	1200	2000	50kA/phase	320
PSP240YC12/*A	415Y/240V Three-phase wye	10	✗	✓	✗	✓	-	1200	-	2000	50kA/phase	320
PSP277Y12/*A	480Y/277V Three-phase wye	10	✓	✓	✓	✓	1200	1200	1200	2000	50kA/phase	320
PSP277YC12/*A	480Y/277V Three-phase wye	10	✗	✓	✗	✓	-	1200	-	2000	50kA/phase	320
PSP347Y12/*A	600Y347V Three-phase wye	10	✓	✓	✓	✓	1500	1500	1500	2500	50kA/phase	420
PSP347YC12/*A	600Y347V Three-phase wye	10	✗	✓	✗	✓	-	1500	-	2500	50kA/phase	420
PSP120H12/*A	120/240V High leg delta	10	✓	✓	✓	✓	700- 1200HL	700- 1200HL	700	1200- 2000HL	50kA/phase	150/ 320(HL)
PSP120HC12/*A	120/240V High leg delta	10	✗	✓	✗	✓	-	700- 1200HL	-	1200- 2000HL	50kA/phase	150/ 320(HL)
PSP240H12/*A	240/480V High leg delta	10	✓	✓	✓	✓	1200- 1800HL	1200- 1800HL	1200	2000- 3000HL	50kA/phase	320/ 550(HL)
PSP240HC12/*A	240/480V High leg delta	10	✗	✓	✗	✓	-	1200- 1800HL	-	2000- 3000HL	50kA/phase	320/ 550(HL)
PSP240D12/*A	240V Three-phase delta	10	✗	✓	✗	✓	-	1200	-	1200	50kA/phase	320
PSP480D12/*A	480V Three-phase delta	10	✗	✓	✗	✓	-	1800	-	3000	50kA/phase	550
PSP600D12/*A	600V Three-phase delta	10	✗	✓	✗	✓	-	2000	-	4000	50kA/phase	690
PSP120S12/*A	120V Single-phase	10	✓	✓	✓	✗	700	700	700	-	50kA/phase	150
PSP127S12/*A	127V Single-phase	10	✓	✓	✓	✗	700	700	700	-	50kA/phase	150
PSP240S12/*A	240V Single-phase	10	✓	✓	✓	✗	1200	1200	1200	-	50kA/phase	320
PSP277S12/*A	277V Single-phase	10	✓	✓	✓	✗	1200	1200	1200	-	50kA/phase	320
PSP347S12/*A	347V Single-phase	10	✓	✓	✓	✗	1500	1500	1500	-	50kA/phase	420

Note: <sup>(1)</sup> MCOV for L1-L 2