

PSPF series



PROSURGE® PSPF series panel SPDs are compact Surge Protective Devices (SPDs) with nominal discharge current 20,000A (8/20μs), 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 PSPF is constructed with Prosurge's patented 20PTMOV modules, which has a thermally protected and arc extinguishing technology as the core of Prosurge's competency. PSPF has a significant advantage in abnormal over-voltage & high fault current safety and thus ensures industry's highest level of safety and performance.

PSPF is tested and listed as UL1449 5th & CSA Type 1 SPD. It is constructed in a waterproof plastic enclosure to ensure that dirt, dust and water are resisted for either indoor or outdoor usage, and with indicator LED to demonstrate the power & protection status.

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.

■ Typical Applications:

In medium exposure locations

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

■ Features:

- UL 1449 5th & CSA C22.2 listed Type 1 SPD with SCCR up to 200kArms without external fuse or CB
- Prosurge Patented SCCR 200kArms thermally protected MOV technology(20PTMOV) as key component
- Nominal discharge current 20,000A 8/20μs per mode
- Full modes protection
- High surge energy capability up to 50,000A per phase /mode with compact size
- Low voltage protection rating
- Failure indication
- Threaded NPT
- Waterproof plastic enclosure to resist dirt, dust and water

Outstanding 20PTMOV Technology



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

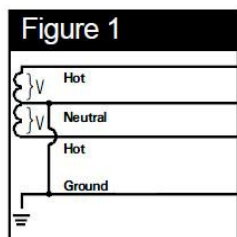


■ Configure & Ordering Information:

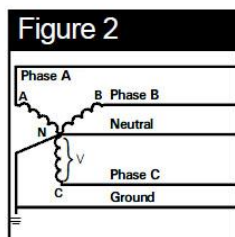
<i>PSPF</i> Model series	<i>277Y</i> Voltage and system configuration	<i>CG</i> Protection mode	<i>11</i> Surge capacity	<i>/ T1</i> SPD Category
<i>PSPF</i>	<i>120SP</i> : 120/240V split <i>240SP</i> : 240/480V split <i>120Y</i> : 120/208V WYE <i>127Y</i> : 127/220V WYE <i>120H</i> : 120/240V high leg delta <i>240D</i> : 240V delta <i>120S</i> : 120V 1ph, 2W+G ...	<i>N</i> : L-N, N-G protection mode <i>G</i> : L-G, N-G protection mode <i>NN</i> : only L-N protection mode <i>CG</i> : only L-G protection mode	<i>11</i> : 50kA per phase	<i>T1</i> : UL type 1 SPD

Voltage code for power distribution system

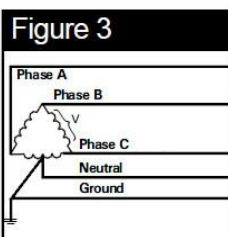
- 120SP, 240SP = 120/240V; 240/480V ----- Split-phase three-wire + ground (Figure1)
- 120Y, 127Y, 240Y, 277Y, 347Y, 400Y = 208Y/120V, 220Y/127V, 415Y/240V, 480Y/277V, 600Y/347V, 690Y/400V
----- Three-phase wye (star) four-wire + ground (Figure2)
- 120H, 240H = 120/240V, 240V/480V ----- Three-phase high leg delta (Figure3)
- 240D, 480D, 600D, 690D = 240V, 480V, 600V, 690V ----- Three-phase delta three-wire + ground (Figure4)
- 120S, 127S, 240S, 277S, 347S, 400S = 120V, 127V, 240V, 277V, 347V, 400V ----- Single-phase two-wire + ground (Figure5)



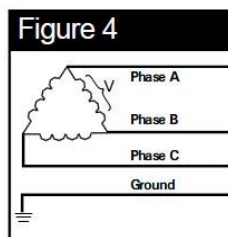
SPLIT
2 Hots, 1 Neu, 1 Gmd



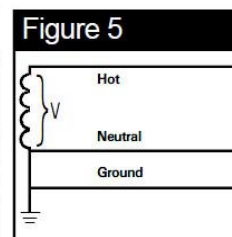
WYE
3 Hots, 1 Neu, 1 Gmd



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



DELTA & HRG WYE
3 Hots, 1 Gmd

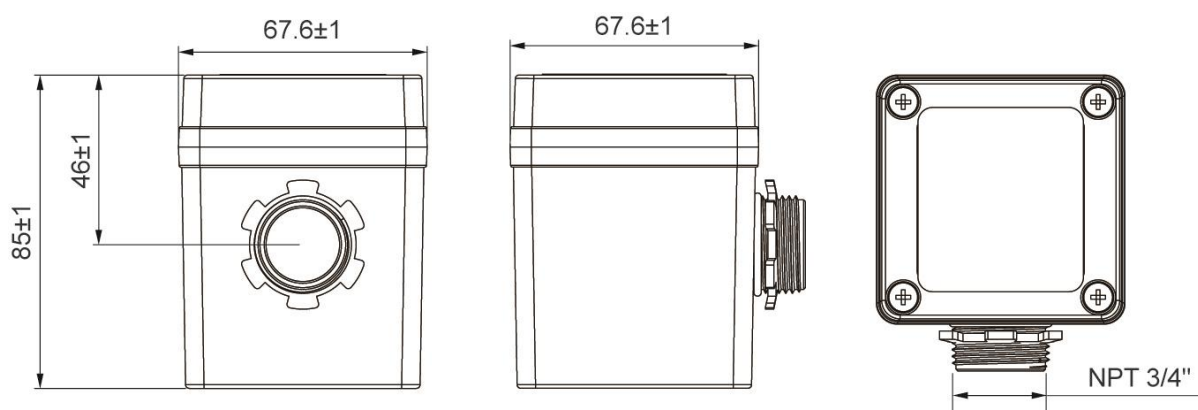


SINGLE POLE
1 Hot, 1 Neu, 1 Gmd

■ Basic circuit diagram

Refer to Appendix 1 - Basic Circuit Diagram

■ Dimensions (unit: mm)



■ General Specification

Category	PSPF
Certification	ANSI/UL1449 5th & CSA C22.2, Type1 SPD
Connection Type	Parallel Connected
Operating Frequency Range	47~63Hz
Surge Capacity	50kA per phase/mode
Nominal Discharge Current In	20kA
SCCR	200kArms
Power Status Indication	Normal= LED ON
Working Status Indication	Normal= LED ON; Fail= LED OFF
Power Connecting	10AWG, 762mm (30") length (L1=black; L2=red; L3=blue; N=white; PE=green)
Working Environments	Temperature -40°C~+80°C, Humidity relative 5~95% (25°C) , Altitudes≤3km
Dimensions (W x D x H)	68x68x85mm (2.7x2.7x3.4 in)
Threaded NPT	3/4"NPT
Enclosure	Waterproof plastic enclosure
Net Weight (Typical Value)	0.4kg

■ Installation

Mounting- PSPF is compatible with the following three installation methods ,of which the method in Fig 1 is the standard installation method. The methods shown in Fig 2 and Fig 3 require the purchase of additional hardware installation accessories as Fig 4.

1. Using NPT locknut to mount the PSPF on the enclosure/box as Fig 1.
2. Using the installation accessories to mount the PSPF on the wall or flat surfaces as Fig 2.
3. Using the installation accessories to mount the PSPF on the DIN Rail as Fig 3.

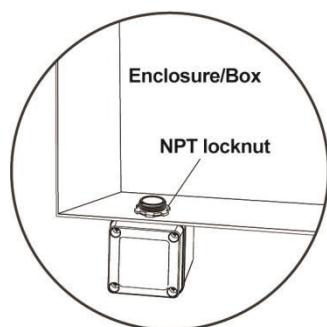


Fig 1 - Mount on the enclosure/box

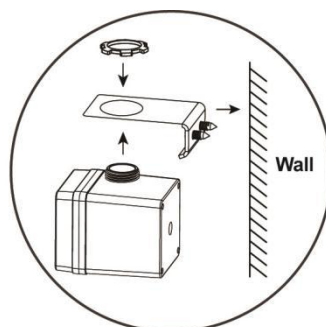


Fig 2 - Mount on the wall

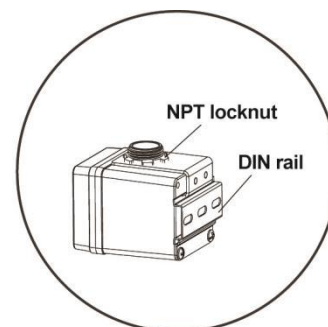
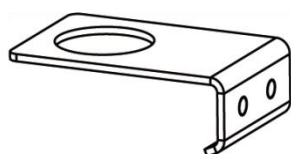


Fig 3 -Mount on the DIN rail

Each set of installation accessories(optional) includes:



L sharp bracket x1



#8x1" Tapping screws x2



1/4"x1" Plastic expansion tube x2



#10x1/2" Tapping screws x2

Fig 4 - Additional installation accessories

■ Technical data

Model No.	System Voltage (50/60Hz)	In (kA)	Protected Mode				Voltage Protection Ratings (V) (VPR @6kV/ 3kA)				Surge Capacity per Phase	MCOV (Vac)
			L-N	L-G	N-G	L-L	L-N	L-G	N-G	L-L		
PSPF120SPNN11/T1	120/240V Split-phase	20	✓	✗	✗	✓	500	-	-	900	50kA	150/300 ⁽¹⁾
PSPF120SPCG11/T1		20	✗	✓	✗	✓	-	500	-	900	50kA	150/300 ⁽¹⁾
PSPF120SPG11/T1		20	✗	✓	✓	✓	-	500	500	900	50kA	150/300 ⁽¹⁾
PSPF120SPN11/T1		20	✓	✗	✓	✓	500	-	500	900	50kA	150/300 ⁽¹⁾
PSPF240SPNN11/T1	240/480V Split-phase	20	✓	✗	✗	✓	900	-	-	1800	50kA	320/640 ⁽¹⁾
PSPF240SPCG11/T1		20	✗	✓	✗	✓	-	900	-	1800	50kA	320/640 ⁽¹⁾
PSPF240SPG11/T1		20	✗	✓	✓	✓	-	900	900	1800	50kA	320/640 ⁽¹⁾
PSPF240SPN11/T1		20	✓	✗	✓	✓	900	-	900	1800	50kA	320/640 ⁽¹⁾
PSPF120YG11/T1	208Y120V Three-phase wye	20	✗	✓	✓	✓	-	500	500	900	50kA	150
PSPF120YN11/T1		20	✓	✗	✓	✓	500	-	500	900	50kA	150
PSPF120YCG11/T1		20	✗	✓	✗	✓	-	500	-	900	50kA	150
PSPF120YNN11/T1		20	✓	✗	✗	✓	500	-	-	900	50kA	150
PSPF127YG11/T1	220Y127V Three-phase wye	20	✗	✓	✓	✓	-	500	500	900	50kA	150
PSPF127YN11/T1		20	✓	✗	✓	✓	500	-	500	900	50kA	150
PSPF127YCG11/T1		20	✗	✓	✗	✓	-	500	-	900	50kA	150
PSPF127YNN11/T1		20	✓	✗	✗	✓	500	-	-	900	50kA	150
PSPF240YG11/T1	415Y/240V Three-phase wye	20	✗	✓	✓	✓	-	900	900	1800	50kA	320
PSPF240YN11/T1		20	✓	✗	✓	✓	900	-	900	1800	50kA	320
PSPF240YCG11/T1		20	✗	✓	✗	✓	-	900	-	1800	50kA	320
PSPF240YNN11/T1		20	✓	✗	✗	✓	900	-	-	1800	50kA	320
PSPF277YG11/T1	480Y/277V Three-phase wye	20	✗	✓	✓	✓	-	900	900	1800	50kA	320
PSPF277YN11/T1		20	✓	✗	✓	✓	900	-	900	1800	50kA	320
PSPF277YCG11/T1		20	✗	✓	✗	✓	-	900	-	1800	50kA	320
PSPF277YNN11/T1		20	✓	✗	✗	✓	900	-	-	1800	50kA	320
PSPF347YG11/T1	600Y347V Three-phase wye	20	✗	✓	✓	✓	-	1200	1200	2500	50kA	420
PSPF347YN11/T1		20	✓	✗	✓	✓	1200	-	1200	2500	50kA	420
PSPF347YCG11/T1		20	✗	✓	✗	✓	-	1200	-	2500	50kA	420
PSPF347YNN11/T1		20	✓	✗	✗	✓	1200	-	-	2500	50kA	420
PSPF400YG11/T1	690Y400V Three-phase wye	20	✗	✓	✓	✓	-	1800	1800	3000	50kA	550
PSPF400YN11/T1		20	✓	✗	✓	✓	1800	-	1800	3000	50kA	550
PSPF400YCG11/T1		20	✗	✓	✗	✓	-	1800	-	3000	50kA	550
PSPF400YNN11/T1		20	✓	✗	✗	✓	1800	-	-	3000	50kA	550

One-port Panel SPDs

■ Technical Data

Model No.	System Voltage (50/60Hz)	In (kA)	Protected Mode				Voltage Protection Ratings (V) (VPR @6kV/ 3kA)				Surge Capacity per Phase	MCOV (Vac)
			L-N	L-G	N-G	L-L	L-N	L-G	N-G	L-L		
PSPF120HG11/T1	120/240V High leg delta	20	✗	✓	✓	✓	-	900	900	1800	50kA	320
PSPF120HN11/T1		20	✓	✗	✓	✓	900	-	900	1800	50kA	320
PSPF240HG11/T1	240/480V High leg delta	20	✗	✓	✓	✓	-	1800	1800	3000	50kA	550
PSPF240HN11/T1		20	✓	✗	✓	✓	1800	-	1800	3000	50kA	550
PSPF240DG11/T1	240V Three-phase delta	20	✗	✓	✗	✓	-	900	-	900	50kA	300
PSPF480DG11/T1	480V Three-phase delta	20	✗	✓	✗	✓	-	1800	-	1800	50kA	640
PSPF600DG11/T1	600V Three-phase delta	20	✗	✓	✗	✓	-	2500	-	2500	50kA	840
PSPF690DG11/T1	690V Three-phase delta	20	✗	✓	✗	✓	-	3000	-	3000	50kA	1100
PSPF120SG11/T1	120V Single-phase	20	✗	✓	✓	✗	-	500	500	-	50kA	150
PSPF120SN11/T1		20	✓	✗	✓	✗	500	-	500	-	50kA	150
PSPF127SG11/T1	127V Single-phase	20	✗	✓	✓	✗	-	500	500	-	50kA	150
PSPF127SN11/T1		20	✓	✗	✓	✗	500	-	500	-	50kA	150
PSPF240SG11/T1	240V Single-phase	20	✗	✓	✓	✗	-	900	900	-	50kA	320
PSPF240SN11/T1		20	✓	✗	✓	✗	900	-	900	-	50kA	320
PSPF277SG11/T1	277V Single-phase	20	✗	✓	✓	✗	-	900	900	-	50kA	320
PSPF277SN11/T1		20	✓	✗	✓	✗	900	-	900	-	50kA	320
PSPF347SG11/T1	347V Single-phase	20	✗	✓	✓	✗	-	1200	1200	-	50kA	420
PSPF347SN11/T1		20	✓	✗	✓	✗	1200	-	1200	-	50kA	420
PSPF400SG11/T1	400V Single-phase	20	✗	✓	✓	✗	-	1800	1800	-	50kA	550
PSPF400SN11/T1		20	✓	✗	✓	✗	1800	-	1800	-	50kA	550

Notes:

(1) MCOV for L1-L 2 .

Suitable For Use on a Circuit Capable of Delivering Not More Than 200 000 rms symmetrical Amperes.

Convient à des circuits produisant au plus 200 000 A eff.

End

■ Appendix 1 - Basic Circuit Diagram

Un/ Power system (50/60 HZ)	Basic Circuit Diagram Of Surge Protection Circuit			
120/240 VAC Split phase 240/480 VAC Split phase ...	PSPF... SPN11 ...(3W+G) 	PSPF... SPG11 ...(3W+G) 	PSPF... SPNN11 ...(3W) 	PSPF... SPCG11 ...(2W+G)
120 VAC single phase 127 VAC single phase 240 VAC single phase 277 VAC single phase 347 VAC single phase 400 VAC single phase	PSPF... SN11 ...(2W+G) 	PSPF... SG11 ...(2W+G) 		
120/208 VAC WYE 127/220 VAC WYE 240/415VAC WYE 277/480 VAC WYE 347/600 VAC WYE 400/690 VAC WYE	PSPF... YN11 ...(4W+G) 	PSPF... YG11 ...(4W+G) 	PSPF... YNN11 ...(4W) 	PSPF... YCG11 ...(3W+G)
240 VAC Delta 480 VAC Delta 600 VAC Delta 690 VAD Delta		PSPF... DG11 ...(3W+G) 		
120/240 VAC Hi-leg delta 240/480 VAC Hi-leg delta ...	PSPF... HN11 ...(4W+G) 	PSPF... HG11 ...(4W+G) 		