ProSurge®

Maximum Safety in Surge Protection

Surge Protective Devices (SPDs)

www.Prosurge.com

2027 Edition

Prosurge Electronics Co., Ltd - Foshan, China

Founded in 2006, Prosurge is a world leader in manufacturing a full line of Surge Protective Devices (SPDs) for complete solutions across applications in the home, commercial, industrial, electricity system, telecommunications, transportation, and renewable energy sectors (e.g. Solar Power / PV, wind energy and energy storage), etc.

The past 20 years' specialized endeavor has positioned Prosurge as a highest-quality supplier with QEHS Management holders of ISO 9001, ISO 14001, and ISO 45001 awards. With a robust global sales network covering over 60 countries and regions, Prosurge ensures unparalleled service and support to customers worldwide with competitive UL, ETL, TUV and KEMA certificate. It maintains close and long-term relationships with customers, something Prosurge believes is essential for its common success.Prosurge is committed to excellence. The proof is that Prosurge has an inhouse test lab appointed TÜV SÜD External Test Laboratory, which is complementary, in terms of the available resources, to be able to offer the widest range of tests to IEEE, UL,CSA IEC and EN standards. From the technical expertise to the operational deployment, Prosurge is passionate about all aspects and topics related to SPDs. It has high investment in R&D, international patents and is composed of a highly specialized team who can bring forward the best insights and projects and share experience and knowledge.

Prosurge's team place the user at the heart of their practise. Focused on MAXIMUM SAFETY IN SURGE PROTECTION, Prosurge will continually innovate in the surge protection market and struggle for ideal solution to customized installation. As digital transformation touches all aspects of current life, Prosurge is striving to be the powerful partner when it comes to protecting trend-setting smart energy and data solutions against the effects of lightning and surges with its outstanding products, services and expertise to create a tangible benefit for the world.

Prosurge Strength

ProSurge®
Maximum Safety in Surge Protection

Product Approvals & Standards:

- UL, ETL (ANSI/UL 1449 5th edition, CSA C22.2, UL 497b, etc.)
- KEMA, TUV (EN/IEC 61643-1/11, IEC 61643-31/41, EN50539-11)
- CE (LVD, EMC)

R&D

- International R&D team with China & USA experts, senior member of IEC, UL and IEEE.
- Main products are international patents protected to avoid any possible intellectual property risk

Production Capacity

- Factory size in square meter: 5000
- More than monthly 300K pcs SPDs in one shift

Strict Bar Code Management Tracking System

- Bar code management for each part to trace lot #, parameters, materials lot No., materials specification, key process operator etc.

Prosurge In-house Test Lab

- Prosurge can perform testing according to ANSI/UL 1449, 497a/b/c, EN/IEC 61643-1/11/31/41, EN IEC 60730-1,EN/IEC 61643-21, IEEE C62.41 etc. at PROSURGE in-house Lab
- China's leading Lightning Protection test laboratory
- Strictly follow ISO/IEC 17025 Testing and Calibration Laboratories standards
- TÜV SÜD External Test Laboratory (ETL)

Quality Assurance

- Global supplier of Fortune 500 enterprises
- ISO 9001 certified Quality Management System
- ISO 14001 certified Enviromental Management System
- ISO 45001 certified Occupational Health Safety Management System
- 6 Sigma Quality Control System
- Inspection by 100% before packing
- 5+ Years Warranty

Prosurge In-house Test Lab (CN)

Prosurge In-house Test Lab (MY)

Multi-waveform Surge Generator

- For IEC/EN 61643 Type1, 2, 3 / Class B, C,D SPD, and UL1449 all type testing
- Current capacity: 100kA (10/350μs), 150kA (8/20μs) & combination wave (1.2/50μs voltage - 8/20μs current)

Online Aging Tester

- Uc / MCOV compliance 100% online testing before packing

Glow Wire Tester

- IEC/EN 61643 Resistance to abnormal heat and fire

Environment Test Chamber

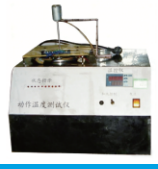
- UL, IEC/EN Environment test, Aging test

Combination Wave Generator
GCW Measurement Control System
AC/DC Operating Duty Power Supply
100A AC Operating Duty Power Supply

- IEC/EN 61643 and UL 1449 all type test

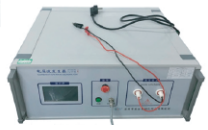
AC/DC Thermal Stabilizer System
Thermal Stabilizer Control System

- IEC/EN 61643 thermal stability test



Rated Functioning Temperature (Tf)

- UL60691 & IEC60691



1.2/50 Voltage Impulse Generator

- UL 1449 & IEC/EN61643

Vibration Tester

- Structural & packaging test

Thermal Stability Tester

- IEC/EN61643

Intermediate Current Tester

- UL 1449

Accelerated Aging Tester

- UL 1449 & IEC/EN61643

Precision Salt Spraying Tester

- ASTM B117 & IEC60068-2-11

Fluke Network Analysis

- UL497 & IEC/EN61643-21

Oscilloscope

Digital Electric Bridge

SPD Component Tester

Varistor Parameter Tester

Certificates and International Patents

ProSurge®
Maximum Safety in Surge Protection


CERTIFICATE OF COMPLIANCE

Certificate Number 20150820-E319871
Report Reference E319871-20100929
Issue Date 2015-AUGUST-20

Issued to: PROSURGE ELECTRONICS CO LTD
Dajin Industrial Zone
Jianshe Rd Danzao Nanhai
Foshan
Guangdong 528216 CHINA

This is to certify that: COMPONENT - SURGE-PROTECTIVE DEVICES
representative samples of: Refer addendum page for models

Have been investigated by UL in accordance with the Standard(s) indicated on this Certificate.

Standard(s) for Safety: UL1449 Surge Protective Devices
CSA C22.2 No. 8 13 Electromagnetic Interference (EMI) Filters, Electrical Notice No. 516 Surge/Transient Voltage Suppressors

Additional Information: See the UL Online Certifications Directory at www.ul.com/database for additional information

Only those products bearing the UL Certification Mark should be considered as being covered by UL's Certification and Follow-Up Service.

Recognized components are incomplete in certain constructional features or restricted in performance capabilities and are intended for use as components of complete equipment submitted for investigation rather than for direct separate installation in the field. The final acceptance of the component is dependent upon its installation and use in complete equipment submitted to UL LLC.

Look for the UL Certification Mark on the product.

Page 1 of 2

UL


CERTIFICATE

Issued to:
Applicant: Prosurge Electronics Co., Ltd. Dajin Industrial Zone 528216 Nanhai, Foshan, Guangdong, China
Manufacturer/Licensee: Prosurge Electronics Co., Ltd. Dajin Industrial Zone 528216 Nanhai, Foshan, Guangdong, China

Products / Trade names: surge protective devices / PROSURGE SAFSURGE HIT

Type(s)/model(s): SP150 ... SP275 ... SP320 ... SP365 ... SP277VT ... SP320VT ... SP256T

The product and any acceptable variation thereto is specified in the Annex to this certificate and the documents therein referred to.

DEKRA hereby declares that the above-mentioned product has been certified on the basis of:
– a type test according to the standard EN 61643-11:2012/IEC 61643-11:2011;
– an inspection of the production location according to CENELEC Operational Document CIG 021
– a certification agreement with the number 21466556

DEKRA hereby grants the right to use the KEMA-KEUR certification mark.

The KEMA-KEUR certification mark may be applied to the product as specified in this certificate for the duration of the KEMA-KEUR certification agreement and under the conditions of the KEMA-KEUR certification agreement.

This certificate is issued on: 31 January 2014 and expires upon withdrawal of one of the above mentioned standards.

Certificate number: 21466556.01

DEKRA Certification B.V.

drs. G.J. Zoetbrood
Managing Director

F.S. Strikwerda
Certification Manager

© Integral publication of this certificate is allowed

ACCREDITED BY THE DUTCH ACCREDITATION COUNCIL

KEMA KEUR

DEKRA Certification B.V. Meander 1051, 6825 MJ Arnhem P.O. Box 9185, 6802 ED Arnhem The Netherlands
T +31 88 96 83000 F +31 88 96 83100 www.dekra-certification.com Registered Arnhem 09085396

KEMA


CERTIFICATE
No. B 16 08 98605 006

Holder of Certificate: Prosurge Electronics Co., Ltd.
Dajin Industrial Zone, Jianshe Road, Danzao Nanhai
528216 Foshan, Guangdong
PEOPLE'S REPUBLIC OF CHINA

Certification Mark:

Product: Surge protection equipment [Surge Protective Device(SPD)]

The product was tested on a voluntary basis and complies with the essential requirements. The certification mark shown above can be affixed on the product. It is not permitted to alter the certification mark in any way. In addition the certification holder must not transfer the certificate to third parties. See also notes overleaf.

Test report no.: 68236140360 3C

Valid until: 2019-06-14

Date, 2016-06-16
Page 1 of 2

(Alex Hong)

TÜV SÜD Product Service GmbH · Zertifizierstelle · Ridlerstraße 65 · 80339 München · Germany

ZERTIFIKAT ◆ CERTIFICATE ◆ CERTIFICADO ◆ CERTIFICAT ◆ СЕРТИФИКАТ ◆ CERTIFICATO ◆ 证书

TÜV


MANAGEMENT SYSTEM CERTIFICATE

This is to certify
Prosurge Electronics Co., Ltd.
Unified Social Credit Code 91440605794689911M
Registered Address Building 27, Phase 2, Liando U Valley Industrial Park, Jianshe Road, Danzao, Foshan, Guangdong, 528216 China
Auditing Address Building 27, Phase 2, Liando U Valley Industrial Park, Jianshe Road, Danzao, Foshan, Guangdong, 528216 China

that has been assessed and registered as meeting the requirements of
GB/T 24001-2016/ISO 14001:2015

Scope of Certification
Environmental Management Activities Related to Manufacture and Sale of Lighting Protection Electrical Products

Certification No. 39123E1120150R0M
Registration Date 27 Dec. 2023
Change Date 27 Dec. 2023
Expiry Date 26 Dec. 2026

Authorized by

This certificate holder should regularly accept the supervision audit and get approval of it to maintainability of this certificate.
It has passed the initial certification audit
Next supervision audit date before 26 Dec. 2024
Shenzhen Onelink Certification Center Co., Ltd. : www.occso.cn.
Certification and Accreditation Administration of the P.R.C. www.cnca.cn

Onelink Certification Center

ISO 14001: 2015


MANAGEMENT SYSTEM CERTIFICATE

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Auditing Address Building 27, Phase 2, Liando U Valley Industrial Park, Jianshe Road, Danzao, Foshan, Guangdong, 528216 China

that has been assessed and registered as meeting the requirements of
GB/T 45001-2020/ISO 45001:2018

Scope of Certification
Occupational Health and Safety Management Activities Related to Manufacture and Sale of Lighting Protection Electrical Products

Certification No. 39123S1120060R0M
Registration Date 27 Dec. 2023
Change Date 27 Dec. 2023
Expiry Date 26 Dec. 2026

Authorized by

This certificate holder should regularly accept the supervision audit and get approval of it to maintainability of this certificate.
It has passed the initial certification audit
Next supervision audit date before 26 Dec. 2024
Shenzhen Onelink Certification Center Co., Ltd. : www.occso.cn.
Certification and Accreditation Administration of the P.R.C. www.cnca.cn

Onelink Certification Center

ISO 45001: 2018


IQNET

Building trust together.

Certificate

CQM has issued an IQNet recognized certificate that the organization:

Prosurge Electronics Co., Ltd.

Certification Add. Building 27, Phase 2, Liando U Valley Industrial Park, Jianshe Road,Danzao, Foshan, Guangdong, 528216 China

for the following scope:

Manufacture and sale of lighting protection electric products

has implemented and maintains a

Quality Management System

which fulfils the requirements of the following standard:

ISO 9001:2015

Issued on:2024-01-08
Expires on: 2027-01-12

Registration Number: CN-00224Q20180R1M

Alex Stoichitoiu
President of IQNET

Ji XiaoDong
President of CQM

CQM

IQNET Members':
AENOR Spain AFNOR Certification France APCER Portugal CCC Cyprus CISQ Italy CQC China CQM China CQS Czech Republic Cro Cert Croatia DQS Holding GmbH Germany EAGLE Certification Group USA FCAV Brazil FONDONORMA Venezuela ICONTEC Colombia ICS Ekona and Hercegovina Inspecta Sertifiointi Oy Finland INTECO Costa Rica IRAM Argentina JQA Japan KFQ Korea LSQA Uruguay MIRTEC Greece MSZT Hungary Nemko AS Norway NQA Ireland NYCE-SIGE Mexico PCBC Poland Quality Austria Austria SII Israel SIQ Slovenia SIRIM QAS International Malaysia SQS Switzerland SRAC Romania TSE Turkiye YUQS Serbia

* The list of IQNET Members is valid at the time of issue of this certificate. Updated information is available under www.iqnet.certificate.com

ISO 9001: 2015


The United States of America

The Director of the United States Patent and Trademark Office

Has received an application for a patent for a new and useful invention. The title and description of the invention are enclosed. The requirements of law have been complied with, and it has been determined that a patent on the invention shall be granted under the law.

Therefore, this

United States Patent

Grants to the person(s) having title to this patent the right to exclude others from making, using, offering for sale, or selling the invention throughout the United States of America or importing the invention into the United States of America, and if the invention is a process, of the right to exclude others from using, offering for sale or selling throughout the United States of America, or importing into the United States of America, products made by that process, for the term set forth in 35 U.S.C. 154(a)(2) or (c)(1), subject to the payment of maintenance fees as provided by 35 U.S.C. 41(b). See the Maintenance Fee Notice on the inside of the cover.

David J. Kappos

Director of the United States Patent and Trademark Office

US PATENT


Bundesrepublik Deutschland

Urkunde

über die Erteilung des
Patents Nr. 11 2010 005 119

Bezeichnung:
Überspannungsableiter mit thermischer Überlastsicherung

IPC:
H02H 9/04

Inhaberin/Inhaber:
Xiaomao Mao, Foshan, CN

Erfinder/Erfinderin:
Wei, Tianyun, Guangdong, CN; Mao, Xiaomao, Guangdong, CN

Priorität
12.01.2010 CN 201010019307.8

Tag der Anmeldung:
02.02.2010

Tag der Veröffentlichung der Patenterteilung:
12.03.2015

Die Präsidentin des Deutschen Patent- und Markenamts

Cornelia Rudloff-Schäffer

Cornelia Rudloff-Schäffer

München, 14.07.2015

Den aktuellen Rechtsstand und Schutzumfang entnehmen Sie bitte dem DPMAregister unter www.dpma.de

GERMANY PATENT


KIPO

CERTIFICATE OF PATENT REGISTRATION

Patent Reg. No. : 10-1318852

Application No. : 10-2011-7030783
Application Date : December 22, 2011
Registration Date : Octboer 10, 2013

Title of invention : SURGE SUPPRESSOR WITH THERMAL PROTECTIVE FUNCTION

Owner of Patent Right : Prosurge Electronics Co., Ltd.
Second floor, 30 Gongyedadao, Xiabai, Luocun Town, Nanhai Foshan, Guangdong 528226 China

Inventor(s) : MAO, Xiaomao
Second floor, 30 Gongyedadao, Xiabai, Luocun Town, Nanhai Foshan, Guangdong 528226 China

Inventor(s) : WEI, Tianyun
Second floor, 30 Gongyedadao, Xiabai, Luocun Town, Nanhai Foshan, Guangdong 528226 China

This is to certify that the above invention has been registered in the original Patent register in accordance with the Patent Law.

This 10th day of October, 2013

The Commissioner of the Korean Intellectual Property Office

KOREA PATENT

Selecting SPD (UL 1449 5th Ed.)

- **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 1 SPDs for use in PV systems can be connected between the PV array and the main service disconnect.

  SPDs investigated for Type 1 applications are automatically suitable for Type 2 applications and may be marked for SPD Type 1 and/or Type 2 applications. SPDs only marked "SPD Type 2" are not suitable for Type 1 applications.

- **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.

- **Type 3** – Point of utilization SPDs, installed at a minimum conductor length of 10 meters (30 feet) from the electrical service panel to the point of utilization, for example cord connected, direct plug-in, receptacle type and SPDs installed at the utilization equipment being protected. The distance (10 meters) is exclusive of conductors provided with or used to attach SPDs.

- **Type 4 Component Assemblies** – Component assembly consisting of one or more Type 5 components together with a disconnect (integral or external) or a means of complying with the limited current tests.

- **Type 1, 2, 3 Component Assemblies** – Consists of a Type 4 component assembly with internal or external short circuit protection.

- **Type 5** – Discrete component surge suppressors, such as MOVs that may be mounted on a PWB, connected by its leads or provided within an enclosure with mounting means and wiring terminations.

  Type 5 SPDs and Types 1, 2, 3 and 4 component assemblies are intended only for factory installation within another component, device or product.

Glossary

SURGE PROTECTIVE DEVICE (SPD)

- A device composed of at least one non-linear component (MOV, GDT, etc.) and intended for limiting surge voltages on equipment by diverting or limiting surge current and is capable of repeating these functions as specified. SPDs were previously known as Transient Voltage Surge Suppressors (TVSS) or secondary surge arresters.

SURGE

- A transient wave of current, potential or power in an electric circuit. Surges do not include temporary overvoltages (TOV) consisting of an increase in the power frequency voltage for several cycles.

VOLTAGE PROTECTION RATING (VPR)

- A rating selected from a list of preferred values as given in the latest revision of ANSI/UL 1449. The value of VPR is determined as a higher value taken from table of UL 1449 to the average measured limiting voltage determined during the first set of measured limiting voltages tests during the transient-voltage surge suppression test using the combination wave generator at a setting of 6kV, 3kA. As a standardized rating system, VPR allows the direct comparison between like SPDs (i.e. same Type and Voltage).

MAXIMUM CONTINUOUS OPERATING VOLTAGE (MCOV)

- The maximum designated root-mean-squared (rms) value of the power frequency voltage that may be continuously applied to the mode of protection of an SPD.

SHORT CIRCUIT CURRENT RATING (SCCR) OF SPD

- The suitability of an SPD for use on an AC power circuit that is capable of delivering not more than a declared rms symmetrical current at a declared voltage during a short circuit condition. SCCR is not the same as AIC (Amp Interrupting Capacity). SCCR is the amount of "available" current that the SPD can be subjected to and safely disconnect from the power source under short circuit conditions. The amount of current "interrupted" by the SPD is typically significantly less than the "available" current.

ENCLOSURE RATING

- Ensures that the NEMA rating of the enclosure matches the environmental conditions at the location where the device is to be installed.

Prosurge SPDs Overview

ProSurge®
Maximum Safety in Surge Protection

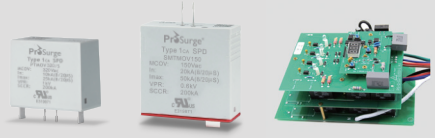
Prosurge is among the very few companies who can provide the most extensive SPDs applicable for North American market. The product details are thoroughly presented in later parts of this catalog.

Before we go into details, we would like to give a brief introduction so that you can have a general idea in the shortest time.

Basically, our SPDs can be classified into 6 categories:

SPD Components for AC & PV / DC

PTMOV / 20PTMOV: Imax 25/50kA
SMTMOV / HSMTMOV: Imax 50/75kA
PCB Assembly: Enclosure-less surge panel



Panel SPDs

DIN-rail SPDs for AC & PV / DC

SPDs for Information System

Surge Monitoring & Measurement

Intelligent SPD (iSPD)

Our SPDs for power supply system can also be classified into 2 categories by UL1449 & CSA 22.2 standard:

- Type 1CA (Component Assembly) SPD with UL recognized mark including:

  ■ DIN-rail SPD (both AC & PV/ DC)
  ■ PTMOV / 20PTMOV (Imax 25/50kA, smaller size)
  ■ SMTMOV / HSMTMOV (Imax 50/75kA, bigger size)
  ■ PCB Assembly (an enclosure-less SPD or a semi-completed SPD)

- Type 1/2 SPD with UL listed mark including:

  ■ PSP series SPD (25~600kA per phase surge capacity) with 5 different enclosures: E, B, F, C1, C2 using PTMOV / 20PTMOV as key component.
  ■ PS series (150~900kA per phase surge capacity) with waterproof plastic/metal enclosure using SMTMOV / HSMTMOV as key component,and in compliance with IEC/EN61643-11 standards too.

* The c UL us mark and c UL us LISTED mark indicate that our products meet both U.S. and Canadian safety standards (UL1449 & CSA 22.2).

ProSurge®
Maximum Safety in Surge Protection

CONTENTS

PTMOV & SMTMOV

PTMOV & SMTMOV are our feature products and fully reflect our expertise and creativity in SPD. They have a significant advantage in abnormal over-voltage & high fault current safety to ensure industry's highest level of safety and performance. They are widely adopted by global customers as most crucial inside surge protective components for electrical and electronic equipment and various SPD, especially Type 1 and Type 2 surge panels.

Rating :

- **MCOV (Vac): 150V~690V**
- **Max. discharge current (8/20us): 25kA(PTMOV), 50kA(20PTMOV,SMTMOV), 75kA(HSMTMOV)**
- **Short circuit current rating (SCCR): 200kArms - tested without external CB or fuse**

Features:

- UL recognized Type 1CA SPD per ANSI/UL1449 5th and CSA C22.2 -UL File No. E319871.
- Global patented thermal disconnector design with arc extinguishing device, fail-safe & self-protected, quick thermal response and perfect circuit cutoff function.
- PCB mounting design, compatible with reflow and wave soldering procedure
- Visual fault indication and optional remote signal contact (rating: 50mA, 12Vdc max)
- Wide operating temperature: -40°C~85°C
- Type 1CA design & Compact size, can be used individually or in combination for OEM customer
- Meet ANSI/UL1449 5th, IEC/EN 61643-11/31 standards.

Applications:

- Built-in surge protection of electronic equipment
- Surge protected devices applications
- AC/DC distribution
- Computer and data technology
- Power supply
- Telecommunication
- Measurement and control system

UL 1449 5th Edition, effective in January 2021, has replaced 4th Edition, furthering the surge protection standards to prevent fire risk while using MOVs.
Prosurge's patented TMOV (PTMOV & SMTMOV) has passed all UL 1449 5th Edition tests.

SPDs not properly designed or incorrectly used and unprotected MOVs may go into thermal runaway, resulting in short circuit, overheating, smoke, and potentially fire hazard due to:

- End of life
- Sustained abnormal over-voltage (TOV)
- Surge with unexpected energy

PTMOV & SMTMOV perform an effective fail-safe and self-protected function when thermal runaway happend due to their super quick themal response.

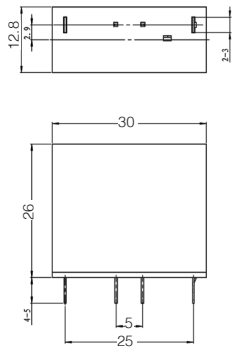
Unlike the unprotected MOV, PTMOV & SMTMOV can cut off the short circuit current and extinguish the arc, permanently and securely disconnect themselves from the power system to prevent fire hazard.

MOV burned by TOV

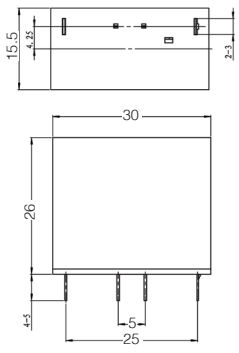
Type	PTMOV	20PTMOV	SMTMOV	HSMTMOV
In accordance with	ANSI/UL1449 5th; IEC/EN61643-11; CSA C22.2			
Category UL	Type 1CA			
Max. Continuous Operating Voltage (MCOV)	150~690Vac	150~550Vac	150~690Vac	150~320Vac
Nominal Discharge Current (8/20μs) In x 15 times	10kA	20kA	20kA	20kA
Max. Discharge Current (8/20μs) Imax x 1 time	25kA	50kA	50kA	75kA
SCCR Rating	200kA			
Response Time	≤25 ns			
Operating Temperature Range	- 40°C ~ + 80°C	- 40°C ~ + 85°C	- 40°C ~ + 85°C	
Enclosure Material	thermoplastic; extinguishing degree UL94 V-0			
Insulation Resistance	≥10 MOhm			
Electric Strength	≥2500V			
Disconnector Instructions	none		viewed through top hole of plastic housing	
Remote Alarm Contact	switching isolation			

Part No.	MCOV		Surge Current		VPR
	Vac (V)	Vdc (V)	Imax (x 1 time @8/20μs)	In (x15 times @8/20μs)	
PTMOV150/S	150	200	25kA	10kA	600V
PTMOV180/S	180	230	25kA	10kA	800V
PTMOV320/S	320	410	25kA	10kA	1000V
PTMOV420/S	420	560	25kA	10kA	1200V
PTMOV550/S	550	745	22kA	10kA	1800V
PTMOV690/S	690	910	22kA	10kA	2000V
20PTMOV150/S	150	200	50kA	20kA	600V
20PTMOV320/S	320	410	50kA	20kA	1000V
20PTMOV420/S	420	560	50kA	20kA	1200V
20PTMOV550/S	550	745	50kA	20kA	1800V

- Dimension drawing

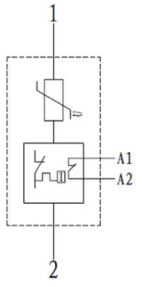


PTMOV×××/S (MCOV 150~420Vac)



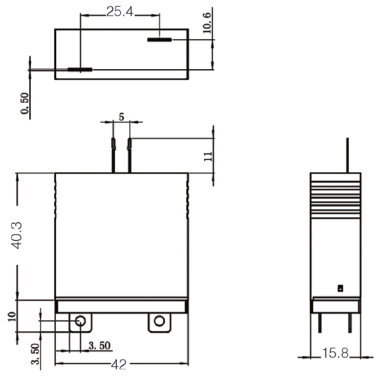
PTMOV×××/S (MCOV 550~690Vac)
& 20PTMOV×××/S

- Basic circuit diagram

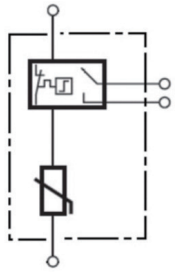


Part No.	MCOV		Surge Current		VPR
	Vac (V)	Vdc (V)	Imax (x 1 time @8/20μs)	In (x15 times @8/20μs)	
SMTMOV150	150	200	50kA	20kA	600V
SMTMOV180	180	230	50kA	20kA	600V
SMTMOV275A	275	350	50kA	20kA	800V
SMTMOV320	320	410	50kA	20kA	1000V
SMTMOV420	420	560	50kA	20kA	1500V
SMTMOV550	550	745	50kA	20kA	1500V
SMTMOV690	690	910	40kA	20kA	2000V
HSMTMOV150	150	200	75kA	20kA	600V
HSMTMOV275A	275	350	75kA	20kA	800V
HSMTMOV320	320	410	75kA	20kA	1000V

- Dimension drawing



- Basic circuit diagram



PCB Assembly for Local Made / SKD

Prosurge PCBA series are one-stop high performance surge protection solution for worldwide OEM customer. They are full-functional and flexible surge protection PCB assembly and thus will significantly simplify customer's investment on designing and certifying to manufacturing, and ensure an efficient local-made product at minimum cost.

PCBA series fully meet the demanding protection requirements of equipment operating in high-risk or critical commercial and industrial environments. By employing Prosurge's patented technology, a thermally protected and arc extinguishing MOV technology, PCBAs have a significant advantage in abnormal over-voltage & high fault current safety to deliver industry's highest level of safety and performance. The parallel redundancy modules design makes the PCBAs more robust and reliable and ensures that they can handle great impulse current up to 900kA (8/20μs) and multiple impulse current at its highest rated level.

Features:

- UL 1449 5th Type 1CA recognized with SCCR up to 200kArms without external fuse or CB
- UL1449 5th Type 2CA with sine wave tracking, SCCR up to 200kArms
- Patented PTMOV/20PTMOV (PSP PCBA), SMTMOV/HSMTMOV (PS PCBA) as key component
- Full modes protection
- Large surge energy capability up to 900kA (8/20μs) with compact size
- Low voltage protection level
- Failure indication
- Surge event counter optional
- Failure pre-test
- Remote Alarm

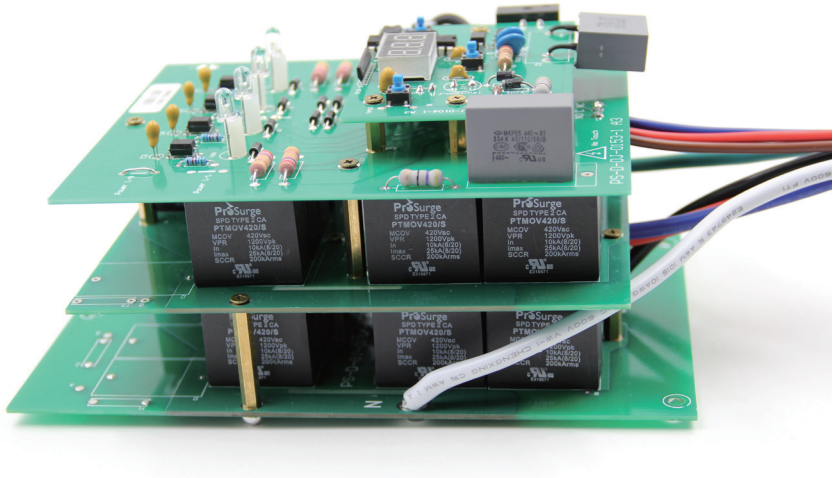
Applications:

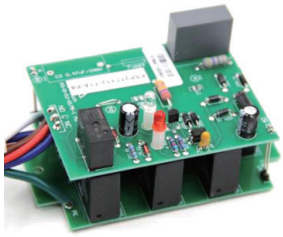
- ANSI/UL1449 Type 1/Type 2 location Surge Protective Devices OEM building
- ANSI/IEEE C62.41 Category B, C, D, E Surge Protective Devices OEM building
- IEC 61643-1/11 Class I/II Surge Protective Devices OEM building

Key Component:

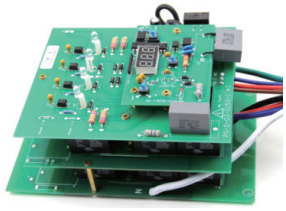
PSP PCBA: PTMOV/20PTMOV

PS PCBA: SMTMOV/HSMTMOV

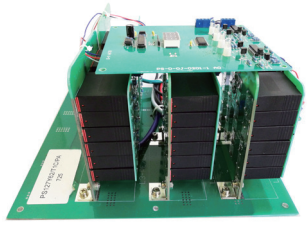




Type B, PSP PCBA



Type C, PSP PCBA



Type D, PS PCBA

PSP PCBA Type	PSP B	PSP C1	PSP C2	PS D
Certifications	ANSI/UL 1449 & CSA C22.2 Type 1/2CA			
Connection Type	Parallel Connected			
Enclosure Recommend & Dimensions, W x D x H	Plastic enclosure 130 mm x 80 mm x 70mm (min.)	Plastic enclosure 200 x 150 x 100 mm (min.)	Metal enclosure 260 x 190 x 109 mm (min.)	Metal enclosure 350 x 340 x 225 mm (min.)
Surge Capacity	50-100kA/phase	100-600kA/phase		150~900kA/phase
SCCR Rating	200kArms			
Sine Wave Tracking	Optional for UL Type 2 certification			
Lightning Counter	No	⩾ 200A (with Reset button)		
Failure Pre-Test	No	Press 2S (test button)		
Power Status Indication	Normal = Power LED ON	Normal=Blue LED ON		
Working Status Indication	Fail=Surge protection LED ON	Normal= Green LED ON; Fail= Green LED turn to Red		AFM (three-stage indication)
Power Connecting	12AWG	10AWG		8AWG
Signal Cable	16AWG (C Red; NC Blue; NO Brown)			
Working Environments	Temperature -40°C~+75°C			Temperature -40°C~+80°C
	Humidity relative 5~95% (25°C), Altitude ⩽ 2km			
PCBA Dimensions	110 x70 x 57mm	173 x 122 x 85 mm	189 x 122 x 85 mm	284 x 254 x 155 mm
Mounting Hole	Two holes, and distance: 110mm	Three holes: 70x155 mm	Three holes: 105.7x178 mm	Four holes: 140x112 mm
Net Weight (Typical Value)	0.23 kg	1.0 kg	1.0 kg	6.5 kg

Note:

To meet the requirement of air clearance and creepage distance, there is slight dimension difference between Type C1 and Type C2 due to enclosure material.

The detailed technical data of PSP PCBA can be refered to PSP B & PSP C technical data as listed in later parts of this catalog, and detailed technical data of PS PCBA can be refferred to PS series in later parts.

PSP Series Panel SPDs

Prosurge PSP series panel SPDs are defined as one-stop high performance surge protection solution for most commercial and industrial environments with critical operations, include Type 1 and Type 2 Surge Protective Devices that protect against the risk of 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

Rating :

- **MCOV (Vac): 150V~690V**
- **Surge capacity (8/20μs): 25~600kA per phase**
- **Short circuit current rating (SCCR): 200kArms - tested without external CB or fuse**

Features:

- UL Listed Type 1 (ANSI/UL1449 5th, CSA C22.2) SPDs
- UL Listed Type 2 (ANSI/UL1449 5th, CSA C22.2) SPDs with sine wave tracking
- Prosurge patented SCCR 200kArms thermally protected MOV technology (PTMOV/20PTMOV) as key component
- Full modes protection & High surge energy capability in compact size
- Sine wave tracking function optional (for UL Type 2 listed model, UL1283 listed EMI/RFI filter for C series)
- Low voltage protection rating
- Waterproof plastic/metal enclosure to resist dirt, dust and water
- Failure indication
- Surge event counter optional
- Floating changeover contact for remote alarm
- Threaded NPT

Typical Application:

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

Adopt PTMOV/20PTMOV as Key Component

Configuration & Ordering Information:

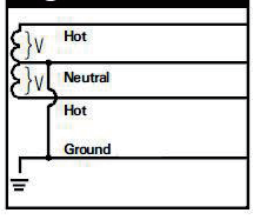
PSP	277Y	C	42	M	/T1	CTA
Model	Voltage and system configuration	Protection mode	Surge capacity	Enclosure	SPD Category	Addtional function
Model: *PSP* *20PSP* *HPSP*	*120SP*: 120/240V split *240SP*: 240/480V split *120Y*: 120/208V WYE *277Y*: 277/480V WYE *120H*: 120/240V high-leg delta *240D*: 240V delta *120S*: 120V 1ph, 2W+G …	*C*: Delete N-G protection mode	*11*: 25kA(or 50*)/phase *12*: 50kA(or 100*)/phase *22*: 100kA(or 200*)/phase *32*: 150kA(or 300*)/phase *42*: 200kA(or 400*)/phase *52*: 250kA(or 500*)/phase *62*: 300kA(or 600*)/phase	*M*: metal enclosure (Only C2 type) *Part No. without M means plastic enclosure (E, B, C1 type)	*T1*: UL type 1 SPD *T2F*: UL type 2 SPD with sine wave tracking	*C*: surge event counter *T*: failure pretest *A*: remote alarm

Note: * While 20PTMOV is used, only for specify model.

Voltage code for power distribution system

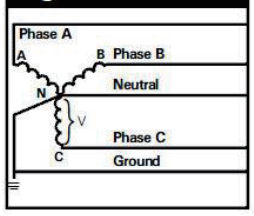
- 120SP , 240SP = 120/240V; 240/480V .....**Split-phase three-wire +ground** (Figure1)
- 120Y, 127Y, 240Y, 277Y, 347Y = 208Y120V, 220Y127V, 380Y220V & 400Y230V & 415Y240V, 480Y277V, 600Y347V .....**Three-phase wye (star) four-wire +ground** (Figure 2)
- 120H, 240H = 120/240V, 240V/480V .....**Three-phase high-leg delta** (Figure 3)
- 240D, 480D, 600D = 240V, 480V, 600V.....**Three-phase delta three-wire +ground** (Figure 4)
- 120S,127S, 240S, 277S, 347S =120V,127V, 220V&230V&240V, 277V, 347V .....**Single-phase two-wire +ground** (Figure 5)

Figure 1



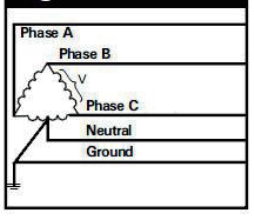
SPLIT
2 Hots, 1 Neu, 1 Grnd

Figure 2



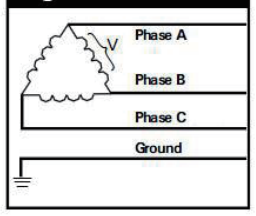
WYE
3 Hots, 1 Neu, 1 Grnd

Figure 3



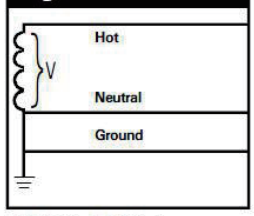
HI-LEG DELTA (B High)
3 Hots, (B HIGH),
1 Neu, 1 Grnd

Figure 4



DELTA & HRG WYE
3 Hots, 1 Grnd

Figure 5



SINGLE POLE
1 Hot, 1 Neu, 1 Grnd

Panel SPDs | 25-50kA | Multi-phase PSP E

ProSurge®
Maximum Safety in Surge Protection

PSP E series panel SPDs are extra compact UL Type 1 SPD designed to protect single phase and multi-phase electrical distribution systems against the harmful effects of transient surges. They are constructed with Prosurge's PTMOV which has a significant advantage in abnormal over-voltage & high fault current safety and thus ensure industry's highest level of safety and performance. They are tested and listed as Type 1 SPD, ANSI/UL1449 5th, CSA C22.2.

c UL us LISTED CE RoHS

PSP Category	PSP E
Certification	ANSI / UL 1449 5th, CSA C22.2, Type 1
Connection Type	Parallel Connected
Nominal Voltage (AC)	120-600V
Surge Capacity	25-50kA per phase
Nominal Discharge Current (In)	10kA
SCCR	200kArms
Power Status Indication	Normal= LED ON
Working Status Indication	Fail= LED OFF
Power Connecting	12AWG (L=black; N=white; PE=green)
Working Environments	Temperature: -40°C~+80°C; Humidity relative 5~95% (25°C); Altitude:≤3km
Dimensions, W x D x H	90 x 58 x 41 mm
Enclosure	Waterproof plastic enclosure
Threaded NPT	1/2"NPT
Net Weight (Typical Value)	0.18 kg

Typical Application:

- Outdoor/Indoor and commercial LED lighting
- Medical electronics
- Manufacturing facilities
- Telecommunication equipment
- Security & alarm equipment
- Other critical electronic equipment

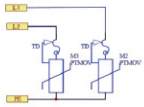
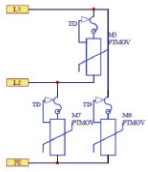
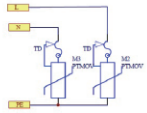
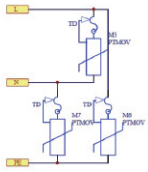
PSPE (In:10kA) - Technical Data:

Model No.	System Voltage (50/60Hz)	In (kA)	Protected Mode				Voltage Protection Ratings (VPR @6KV/ 3kA,V)				Surge Capacity per phase	MCOV (Vac)
			L-N	L-G	N-G	L-L	L-N	L-G	N-G	L-L		
PSPE120SP11/T1	120/240V Split-phase	10	×	✓	×	✓	-	700	-	1500	25kA	150/300
PSPE120SP12/T1			×	✓	×	✓	-	700	-	1200	50kA	150/320
PSPE120SPN11/T1	120/240V Split-phase	10	✓	×	×	✓	700	-	-	1500	25kA	150/300
PSPE120SPN12/T1			✓	×	×	✓	700	-	-	1200	50kA	150/320
PSPE120SPNG11/T1			✓	✓	✓	✓	800	1500	800	1500	25kA	150/300
PSPE240SP11/T1	240/480V Split-phase	10	×	✓	×	✓	-	1200	-	2500	25kA	320/640
PSPE240SP12/T1			×	✓	×	✓	-	1200	-	1800	50kA	320/550
PSPE240SPN11/T1	240/480V Split-phase	10	✓	×	×	✓	1200	-	-	2500	25kA	320/640
PSPE240SPN12/T1			✓	×	×	✓	1200	-	-	1800	50kA	320/550
PSPE240SPNG11/T1			✓	✓	✓	✓	1200	2500	1200	2500	25kA	320/640
PSPE127S11/T1	127V Single-phase	10	✓	✓	✓	×	1500	700	700	-	25kA	150
PSPE127S12/T1			✓	✓	✓	×	700	700	700	-	50kA	150
PSPE277S11/T1	277V Single-phase	10	✓	✓	✓	×	2500	1200	1200	-	25kA	320
PSPE277S12/T1			✓	✓	✓	×	1200	1200	1200	-	50kA	320
PSPE347S11/T1	347V Single-phase	10	✓	✓	✓	×	3000	1500	1500	-	25kA	420
PSPE347S12/T1			✓	✓	✓	×	1500	1500	1500	-	50kA	420

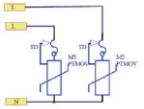
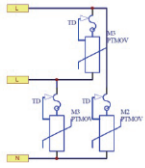
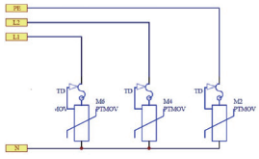
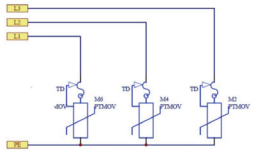
Model No.	System Voltage (50/60Hz)	In (kA)	Protected Mode				Voltage Protection Ratings (VPR @6KV/ 3kA,V)				Surge Capacity per phase	MCOV (Vac)
			L-N	L-G	N-G	L-L	L-N	L-G	N-G	L-L		
PSPE240D11/T1	240V Three-phase delta	10	×	✓	×	✓	-	1200	-	2500	25kA	320
PSPE480D11/T1	480V Three-phase delta	10	×	✓	×	✓	-	1800	-	4000	25kA	550
PSPE600D11/T1	600V Three-phase delta	10	×	✓	×	✓	-	2500	-	4000	25kA	690
PSPE120YC11/T1	208Y120V Three-phase wye No neutral	10	×	✓	×	✓	-	800	-	1500	25kA	150
PSPE127YC11/T1	220Y127V Three-phase wye No neutral	10	×	✓	×	✓	-	800	-	1500	25kA	150
PSPE240YC11/T1	415Y240V Three-phase wye No neutral	10	×	✓	×	✓	-	1200	-	2500	25kA	320
PSPE277YC11/T1	480Y277V Three-phase wye No neutral	10	×	✓	×	✓	-	1200	-	2500	25kA	320
PSPE347YC11/T1	600Y347V Three-phase wye No neutral	10	×	✓	×	✓	-	1500	-	3000	25kA	420
PSPE120YN11/T1	208Y120V Three-phase wye 4W	10	✓	×	×	✓	800	-	-	1500	25kA	150
PSPE127YN11/T1	220Y127V Three-phase wye 4W	10	✓	×	×	✓	800	-	-	1500	25kA	150
PSPE240YN11/T1	415Y240V Three-phase wye 4W	10	✓	×	×	✓	1200	-	-	2500	25kA	320
PSPE277YN11/T1	480Y277V Three-phase wye 4W	10	✓	×	×	✓	1200	-	-	2500	25kA	320
PSPE347YN11/T1	600Y347V Three-phase wye 4W	10	✓	×	×	✓	1500	-	-	3000	25kA	420

PSP E - Basic Circuit Diagram

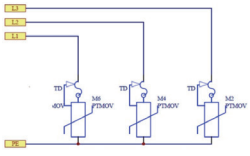
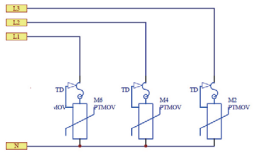
PSPE…	PSPE…SP11…	PSPE…SP12…	PSPE…S11…	PSPE..S12…
Un/ Power System (50/60Hz)	120/240VAC split phase 240/480VAC split phase	120/240VAC split phase 240/480VAC split phase …	120VAC single phase 127VAC single phase 240VAC single phase 277VAC single phase 347VAC single phase …	120VAC single phase 127VAC single phase 240VAC single phase 277VAC single phase 347VAC single phase …

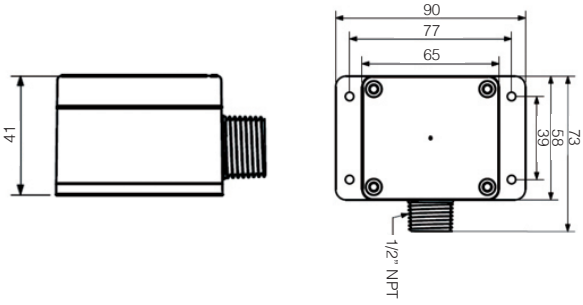
PSPE…	PSPE…SPN11…	PSPE…SPN12…	PSPE…SPNG11…	PSPE…D11…
Un/ Power System (50/60Hz)	120/240VAC split phase 240/480VAC split phase	120/240VAC split phase 240/480VAC split phase …	120/240VAC split phase 240/480VAC split phase	240VAC three phase Delta 480VAC three phase Delta 600VAC three phase Delta

PSPE…	PSPE…YC11…	PSPE…YN11…
Un/ Power System (50/60Hz)	120/208VAC three phase WYE 240/415VAC three phase WYE 347/600VAC three phase WYE	120/208VAC three phase WYE 240/415VAC three phase WYE 347/600VAC three phase WYE

- Dimension drawing



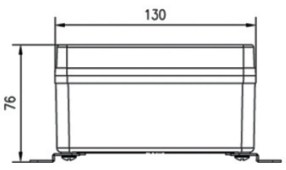
Panel SPDs | 50kA | Multi-phase

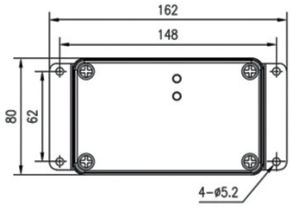
PSP B

Prosurge PSP B series panel SPDs are compact Surge Protective Devices (SPDs), designed to protect single and multi-phase electrical distribution systems against the risk of the harmful effects of transient surges.

PSP Category	PSP B
Certification	ANSI / UL 1449 5th, CSA C22.2, Type 1, Type 2
Connection Type	Parallel Connected
Nominal Voltage (AC)	120-600V
Surge Capacity	50kA per phase
Nominal Discharge Current (In)	10kA
SCCR	200kArms
Sine Wave Tracking	For UL Type 2 listed
Power Status Indication	Normal=Power LED ON
Working Status Indication	Fail=Surge protection LED ON
Power Connecting	12 AWG (L1=black; L2=red; L3=blue; N=white; PE=green)
Signal Cable (Remote Alarm)	16 AWG (C=red; NC=blue; NO=brown)
Working Environment	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	Waterproof plastic enclosure
Net Weight (Typical Value)	0.47 kg

- Dimension drawing





Typical Application:

In low & medium exposure locations

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

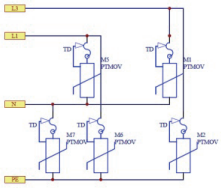
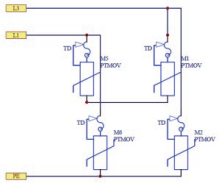
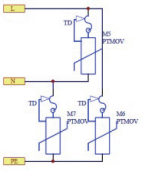
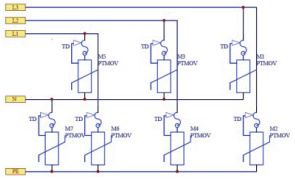
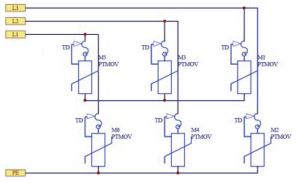
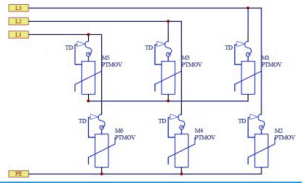
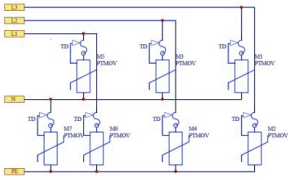
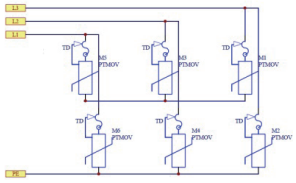
PSP B (In:10kA) - Technical Data:

Model No.	System Voltage (50/60Hz)	In (kA)	Protected Mode				Voltage Protection Ratings (VPR @6kV/ 3kA,V)				Surge Capacity per phase	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	150/300
PSP120SPC12/*A	120/240V Split-phase No neutral	10	×	✓	×	✓	-	700	-	1200	50kA	150/300
PSP240SP12/*A	240/480V Split-phase	10	✓	✓	✓	✓	1200	1200	1200	2000	50kA	320/640
PSP240SPC12/*A	240/480V Split-phase No neutral	10	×	✓	×	✓	-	1200	-	2000	50kA	320/640
PSP120Y12/*A	208Y120V Three-phase wye	10	✓	✓	✓	✓	700	700	700	1200	50kA	150
PSP120YC12/*A	208Y120V Three-phase wye No neutral	10	×	✓	×	✓	-	700	-	1200	50kA	150
PSP127Y12/*A	220Y127V Three-phase wye	10	✓	✓	✓	✓	700	700	700	1200	50kA	150
PSP127YC12/*A	220Y127V Three-phase wye No neutral	10	×	✓	×	✓	-	700	-	1200	50kA	150
PSP240Y12/*A	415Y240V Three-phase wye	10	✓	✓	✓	✓	1200	1200	1200	2000	50kA	320
PSP240YC12/*A	415Y240V Three-phase wye No neutral	10	×	✓	×	✓	-	1200	-	2000	50kA	320
PSP277Y12/*A	480Y277V Three-phase wye	10	✓	✓	✓	✓	1200	1200	1200	2000	50kA	320
PSP277YC12/*A	480Y277V Three-phase wye No neutral	10	×	✓	×	✓	-	1200	-	2000	50kA	320
PSP347Y12/*A	600Y347V Three-phase wye	10	✓	✓	✓	✓	1500	1500	1500	2500	50kA	420
PSP347YC12/*A	600Y347V Three-phase wye No neutral	10	×	✓	×	✓	-	1500	-	2500	50kA	420
PSP120H12/*A	120/240V High-leg delta	10	✓	✓	✓	✓	700-1200HL	700-1200HL	700	1200-2000HL	50kA	150/320(HL)
PSP120HC12/*A	120/240V High-leg delta No neutral	10	×	✓	×	✓	-	700-1200HL	-	1200-2000HL	50kA	150/320(HL)
PSP240H12/*A	240/480V High-leg delta	10	✓	✓	✓	✓	1200-1800HL	1200-1800HL	1200	2000-3000HL	50kA	320/550(HL)

PSP B - Technical Data:

Model No.	System Voltage (50/60Hz)	In (kA)	Protected Mode				Voltage Protection Ratings (VPR @6kV/ 3kA,V)				Surge Capacity per phase	MCOV (Vac)
			L-N	L-G	N-G	L-L	L-N	L-G	N-G	L-L		
PSP240HC12/*A	240/480V High-leg delta No neutral	10	×	✓	×	✓	-	1200-1800HL	-		50kA	320/550(HL)
PSP240D12/*A	240V Three-phase delta	10	×	✓	×	✓	-	1200	-	1200	50kA	320
PSP480D12/*A	480V Three-phase delta	10	×	✓	×	✓	-	1800	-	2000	50kA	550
PSP600D12/*A	600V Three-phase delta	10	×	✓	×	✓	-	2000	-	4000	50kA	690
PSP120S12/*A	120V Single-phase	10	✓	✓	✓	×	700	700	700	-	50kA	150
PSP127S12/*A	127V Single-phase	10	✓	✓	✓	×	700	700	700	-	50kA	150
PSP240S12/*A	240V Single-phase	10	✓	✓	✓	×	1200	1200	1200	-	50kA	320
PSP277S12/*A	277V Single-phase	10	✓	✓	✓	×	1200	1200	1200	-	50kA	320
PSP347S12/*A	347V Single-phase	10	✓	✓	✓	×	1500	1500	1500	-	50kA	420

PSP B - Basic Circuit Diagram

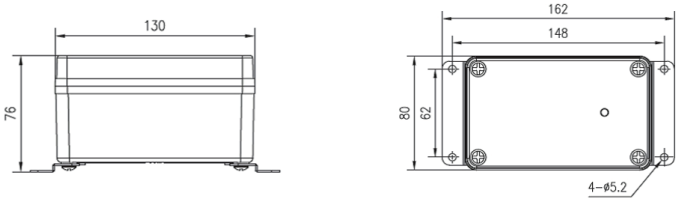
Un/ Power System (50/60 HZ)	Basic Surge Protection Circuit Diagram	
	Power System with Neutral Line	Power System without Neutral Line
120/240VAC split phase 240/480VAC split phase …	PSP…SP12…(3W+G) 	PSP…SPC12…(2W+G) 
120VAC single phase 127VAC single phase 220VAC single phase 230VAC single phase 240VAC single phase 277VAC single phase 347VAC single phase …	PSP…S12…(2W+G) 	
120/208VAC WYE 127/220VAC WYE 220/380VAC WYE 230/400VAC WYE 240/415VAC WYE 277/480VAC WYE 347/600VAC WYE …	PSP…Y12…(4W+G) 	PSP…YC12…(3W+G) 
240VAC Delta 480VAC Delta 600VAC Delta …		PSP...D12…(3W+G) 
120/240VAC High-leg delta 240/480VAC High-leg delta …	PSP...H12…(4W+G, L2 is High-leg) 	PSP...HC12…(3W+G, L2 is High-leg) 

Panel SPDs | 50-100kA | Multi-phase 20PSP B

Prosurge 20PSP B series panel SPDs are compact Surge Protective Devices (SPDs) with nominal discharge current as 20kA , designed to protect single and multi-phase electrical distribution systems against the risk of the harmful effects of transient surges.

PSP Category	20PSP B
Certification	ANSI / UL 1449 5th, CSA C22.2, Type 1, Type 2
Connection Type	Parallel Connected
Nominal Voltage (AC)	120-480V
Surge Capacity	50-100kA per phase
Nominal Discharge Current (In)	20kA
SCCR	200kArms
Sine Wave Tracking	For UL Type 2 listed
Power Status Indication	Normal=Power LED ON
Working Status Indication	Fail=Surge protection LED ON
Power Connecting	12 AWG (L1=black; L2=red; L3=blue; N=white; PE=green)
Signal Cable (Remote Alarm)	16 AWG (C=red; NC=blue; NO=brown)
Working Environment	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	Waterproof plastic enclosure
Net Weight (Typical Value)	0.53 kg

- Dimension drawing



Typical Application:

In low & medium exposure locations

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

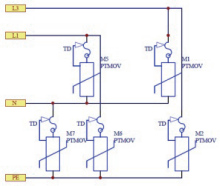
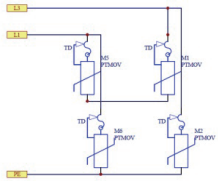
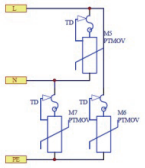
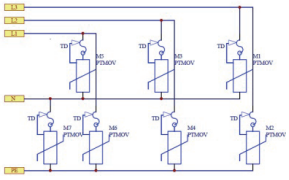
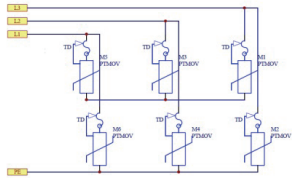
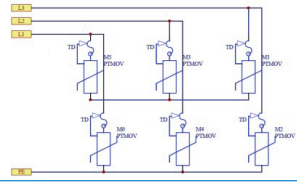
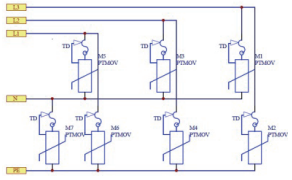
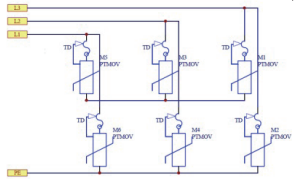
20PSP B (Surge capacity 100kA) - Technical Data:

Model No.	System Voltage (50/60Hz)	In (kA)	Protected Mode				Voltage Protection Ratings (VPR @6kV/ 3kA,V)				Surge Capacity per phase	MCOV (Vac)
			L-N	L-G	N-G	L-L	L-N	L-G	N-G	L-L		
20PSP120SP12/*A	120/240V Split-phase	20	✓	✓	✓	✓	700	700	700	1200	100kA	150/300
20PSP120SPC12/*A	120/240V Split-phase No neutral	20	×	✓	×	✓	-	700	-	1200	100kA	150/300
20PSP240SP12/*A	240/480V Split-phase	20	✓	✓	✓	✓	1200	1200	1200	2000	100kA	320/640
20PSP240SPC12/*A	240/480V Split-phase No neutral	20	×	✓	×	✓	-	1200	-	2000	100kA	320/640
20PSP120Y12/*A	208Y120V Three-phase wye	20	✓	✓	✓	✓	700	700	700	1200	100kA	150
20PSP120YC12/*A	208Y120V Three-phase wye No neutral	20	×	✓	×	✓	-	700	-	1200	100kA	150
20PSP127Y12/*A	220Y127V Three-phase wye	20	✓	✓	✓	✓	700	700	700	1200	100kA	150
20PSP127YC12/*A	220Y127V Three-phase wye No neutral	20	×	✓	×	✓	-	700	-	1200	100kA	150
20PSP240Y12/*A	415Y240V Three-phase wye	20	✓	✓	✓	✓	1200	1200	1200	2000	100kA	320
20PSP240YC12/*A	415Y240V Three-phase wye No neutral	20	×	✓	×	✓	-	1200	-	2000	100kA	320
20PSP277Y12/*A	480Y277V Three-phase wye	20	✓	✓	✓	✓	1200	1200	1200	2000	100kA	320
20PSP277YC12/*A	480Y277V Three-phase wye No neutral	20	×	✓	×	✓	-	1200	-	2000	100kA	320

20PSP B (Surge capacity 100kA) - Technical Data:

Model No.	System Voltage (50/60Hz)	In (kA)	Protected Mode				Voltage Protection Ratings (VPR @6kV/ 3kA,V)				Surge Capacity per phase	MCOV (Vac)
			L-N	L-G	N-G	L-L	L-N	L-G	N-G	L-L		
20PSP347Y12/*A	600Y347V Three-phase wye	20	✓	✓	✓	✓	1500	1500	1500	2500	100kA	420
20PSP347YC12/*A	600Y347V Three-phase wye No neutral	20	×	✓	×	✓	-	1500	-	2500	100kA	420
20PSP120H12/*A	120/240V High-leg delta	20	✓	✓	✓	✓	700-1200HL	700-1200HL	700	1200-2000HL	100kA	150/320(HL)
20PSP120HC12/*A	120/240V High-leg delta No neutral	20	×	✓	×	✓	-	700-1200HL	-	1200-2000HL	100kA	150/320(HL)
20PSP240H12/*A	240/480V High leg delta	20	✓	✓	✓	✓	1200-1800HL	1200-1800HL	1200	2000-3000HL	100kA	320/550(HL)
20PSP240HC12/*A	240/480V High leg delta No Neutral	20	×	✓	×	✓	-	1200-1800HL	-	2000-3000HL	100kA	320/550(HL)
20PSP240D12/*A	240V Three-phase delta	20	×	✓	×	✓	-	1200	-	1200	100kA	320
20PSP480D12/*A	480V Three-phase delta	20	×	✓	×	✓	-	1800	-	2000	100kA	550
20PSP120S12/*A	120V Single-phase	20	✓	✓	✓	×	700	700	700	-	100kA	150
20PSP127S12/*A	127V Single-phase	20	✓	✓	✓	×	700	700	700	-	100kA	150
20PSP240S12/*A	240V Single-phase	20	✓	✓	✓	×	1200	1200	1200	-	100kA	320
20PSP277S12/*A	277V Single-phase	20	✓	✓	✓	×	1200	1200	1200	-	100kA	320
20PSP347S12/*A	347V Single-phase	20	✓	✓	✓	×	1500	1500	1500	-	100kA	420

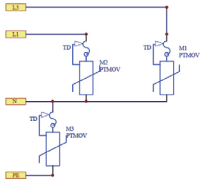
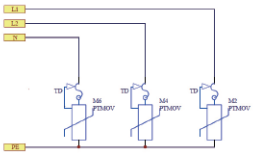
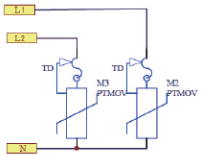
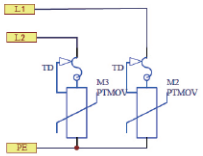
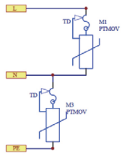
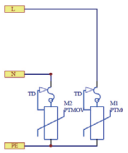
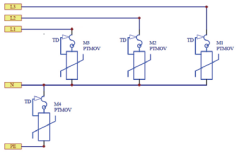
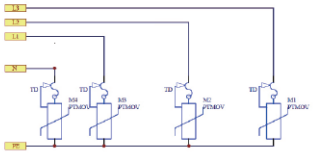
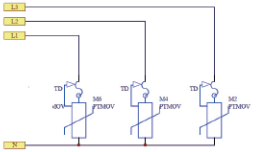
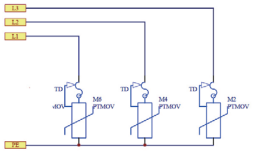
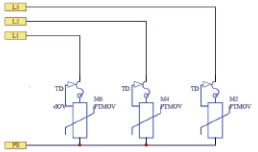
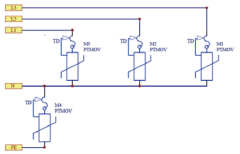
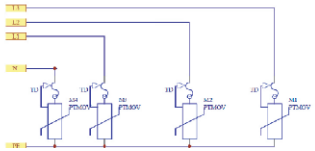
20PSP B (Surge capacity 100kA) - Basic Circuit Diagram

Un/ Power System (50/60 HZ)	Basic Surge Protection Circuit Diagram	
	Power System with Neutral Line	Power System without Neutral Line
120/240VAC split phase 240/480VAC split phase …	20PSP…SP12…(3W+G) 	20PSP…SPC12…(2W+G) 
120VAC single phase 127VAC single phase 220VAC single phase 230VAC single phase 240VAC single phase 277VAC single phase 347VAC single phase …	20PSP…S12…(2W+G) 	
120/208VAC WYE 127/220VAC WYE 220/380VAC WYE 230/400VAC WYE 240/415VAC WYE 277/480VAC WYE 347/600VAC WYE …	20PSP…Y12…(4W+G) 	20PSP…YC12…(3W+G) 
240VAC Delta 480VAC Delta …		20PSP...D12…(3W+G) 
120/240VAC High-leg delta 240/480VAC High-leg delta …	20PSP...H12…(4W+G, L2 is High-leg) 	20PSP...HC12…(3W+G, L2 is High-leg) 

20PSP B (Surge capacity 50kA) - Technical Data:

Model No.	System Voltage (50/60Hz)	In (kA)	Protected Mode				Voltage Protection Ratings (VPR @6kV/ 3kA,V)				Surge Capacity per phase	MCOV (Vac)
			L-N	L-G	N-G	L-L	L-N	L-G	N-G	L-L		
20PSP120SPNN11/*A	120/240V Split-phase	20	✓	×	×	✓	700	-	-	1200	50kA	150/300
20PSP120SPG11/*A		20	×	✓	✓	✓	-	700	700	1200	50kA	150/300
20PSP120SPN11/*A		20	✓	×	✓	✓	700	-	700	1200	50kA	150/300
20PSP240SPNN11/*A	240/480V Split-phase	20	✓	×	×	✓	1200	-	-	2000	50kA	320/640
20PSP240SPG11/*A		20	×	✓	✓	✓	-	1200	1200	2000	50kA	320/640
20PSP240SPN11/*A		20	✓	×	✓	✓	1200	-	1200	2000	50kA	320/640
20PSP127YG11/*A	220Y127V Three-phase wye	20	×	✓	✓	✓	-	700	700	1200	50kA	150
20PSP127YN11/*A		20	✓	×	✓	✓	700	-	700	1200	50kA	150
20PSP127YCG11/*A		20	×	✓	×	✓	-	700	-	1200	50kA	150
20PSP127YNN11/*A		20	✓	×	×	✓	700	-	-	1200	50kA	150
20PSP277YG11/*A	480Y/277V Three-phase wye	20	×	✓	✓	✓	-	1200	1200	2000	50kA	320
20PSP277YN11/*A		20	✓	×	✓	✓	1200	-	1200	2000	50kA	320
20PSP277YCG11/*A		20	×	✓	×	✓	-	1200	-	2000	50kA	320
20PSP277YNN11/*A		20	✓	×	×	✓	1200	-	-	2000	50kA	320
20PSP347YG11/*A	600Y347V Three-phase wye	20	×	✓	✓	✓	-	1500	1500	2500	50kA	420
20PSP347YN11/*A		20	✓	×	✓	✓	1500	-	1500	2500	50kA	420
20PSP347YCG11/*A		20	×	✓	×	✓	-	1500	-	2500	50kA	420
20PSP347YNN11/*A		20	✓	×	×	✓	1500	-	-	2500	50kA	420
20PSP120HG11/*A	120/240V High leg delta	20	×	✓	✓	✓	-	700-1200HL	700	1200-2000HL	50kA	150/320(HL)
20PSP120HN11/*A		20	✓	×	✓	✓	700-1200HL	-	700	1200-2000HL	50kA	150/320(HL)
20PSP240HG11/*A	240/480V High leg delta	20	×	✓	✓	✓	-	1200-1800HL	1200	2000-3000HL	50kA	320/550(HL)
20PSP240HN11/*A		20	✓	×	✓	✓	1200-1800HL	1200-1800HL	1200	2000-3000HL	50kA	320/550(HL)
20PSP240DG11/*A	240V Three-phase delta	20	×	✓	×	✓	-	1200	-	2000	50kA	320
20PSP480DG11/*A	480V Three-phase delta	20	×	✓	×	✓	-	1800	-	4000	50kA	550
20PSP127SG11/*A	127V Single-phase	20	×	✓	✓	×	-	700	700	-	50kA	150
20PSP127SN11/*A		20	✓	×	✓	×	700	-	700	-	50kA	150
20PSP277SG11/*A	277V Single-phase	20	×	✓	✓	×	-	1200	1200	-	50kA	320
20PSP277SN11/*A		20	✓	×	✓	×	1200	-	1200	-	50kA	320
20PSP347SG11/*A	347V Single-phase	20	×	✓	✓	×	-	1500	1500	-	50kA	420
20PSP347SN11/*A		20	✓	×	✓	×	1500	-	1500	-	50kA	420

20PSP B (Surge capacity 50kA) - Basic Circuit Diagram

Un/ Power system (50/60 HZ)	Basic Surge Protection Circuit Diagram			
120/240 VAC split phase 240/480 VAC split phase …	20PSP…SPN11…(3W+G) 	20PSP…SPG11…(3W+G) 	20PSP…SPNN11…(3W) 	20PSP…SPCG11…(2W+G) 
127 VAC single phase 230 VAC single phase 277 VAC single phase 347 VAC single phase …	20PSP…SN11…(2W+G) 	20PSP…SG11…(2W+G) 		
127/220 VAC WYE 230/400 VAC WYE 277/480 VAC WYE 347/600 VAC WYE …	20PSP…YN11…(4W+G) 	20PSP…YG11…(4W+G) 	20PSP…YNN11…(4W) 	20PSP…YCG11…(3W+G) 
240 VAC Delta 480 VAC Delta …		20PSP...DG11…(3W+G) 		
120/240 VAC Hi-leg delta 240/480 VAC Hi-leg delta …	20PSP...HN11…(4W+G, L2 is High leg) 	20PSP...HG11…(4W+G, L2 is High leg) 		

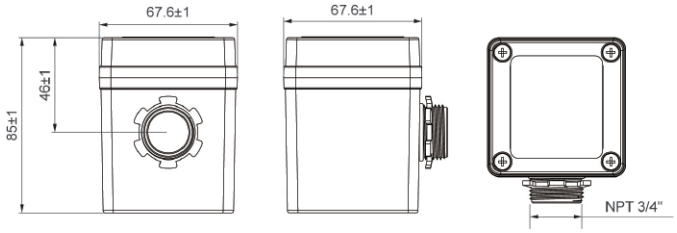
Panel SPDs | 50kA | Multi-phase PSP F

ProSurge®
Maximum Safety in Surge Protection

PSP F series panel SPDs are extra compact UL Type 1 SPD with nominal discharge current up to 20kA, designed to protect single phase and multi-phase electrical distribution systems against the harmful effects of transient surges. They are constructed with Prosurge's 20PTMOV which has a significant advantage in abnormal over-voltage & high fault current safety and thus ensure industry's highest level of safety and performance. They are tested and listed as Type 1 SPD, ANSI/UL1449 5th, CSA C22.2.

PSP Category	PSP F
Certification	ANSI/UL1449 5th,CSA C22.2, Type1
Connection Type	Parallel Connected
Nominal Voltage (AC)	120-690V
Surge Capacity	50kA per Phase
Nominal Discharge Current In	20kA
SCCR	200kArms
Power Status Indication	Normal= LED ON
Working Status Indication	Fail= LED OFF
Power Connecting	10AWG, (L1=black; L2=red; L3=blue; N=white; PE=green)
Working Environments	Temperature –40°C+80°C, Humidity relative 5~95% (25°C) , Altitude≤3km
Dimensions, W x D x H	68x68x85mm
Enclosure	Waterproof plastic enclosure
Threaded NPT	3/4"NPT
Net Weight (Typical Value)	0.4 kg

- Dimension drawing



Typical Application:

In low & medium exposure locations

- Commercial
- Industrial
- Home solution
- Communications
- Renewable energy

PSP F (In :20kA) - Technical Data:

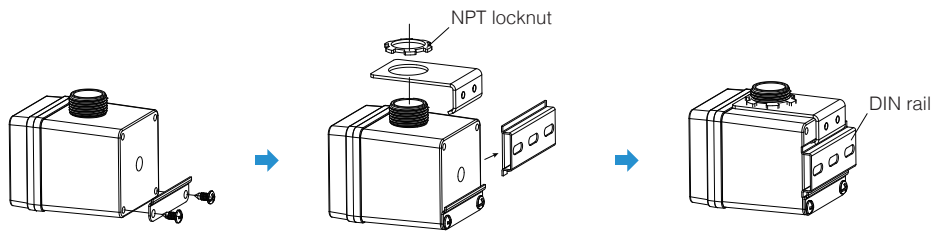
Model No.	System Voltage (50/60Hz)	In (kA)	Protected Mode				Voltage Protection Ratings (VPR @6kV/ 3kA,V)				Surge Capacity per phase	MCOV (Vac)
			L-N	L-G	N-G	L-L	L-N	L-G	N-G	L-L		
PSPF120SPNN11/T1	120/240V Split-phase	20	✓	×	×	✓	500	-	-	900	50kA	150/300
PSPF120SPCG11/T1		20	×	✓	×	✓	-	500	-	900	50kA	150/300
PSPF120SPG11/T1		20	×	✓	✓	✓	-	500	500	900	50kA	150/300
PSPF120SPN11/T1		20	✓	×	✓	✓	500	-	500	900	50kA	150/300
PSPF240SPNN11/T1	240/480V Split-phase	20	✓	×	×	✓	900	-	-	1800	50kA	320/640
PSPF240SPCG11/T1		20	×	✓	×	✓	-	900	-	1800	50kA	320/640
PSPF240SPG11/T1		20	×	✓	✓	✓	-	900	900	1800	50kA	320/640
PSPF240SPN11/T1		20	✓	×	✓	✓	900	-	900	1800	50kA	320/640
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

PSP F (In :20kA) - Technical Data:

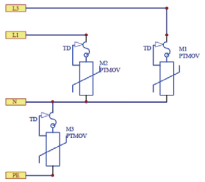
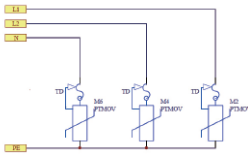
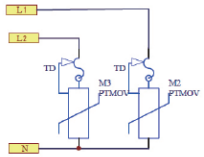
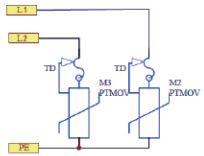
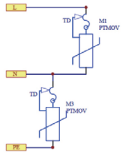
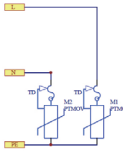
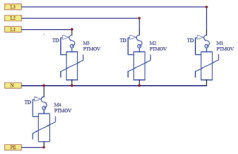
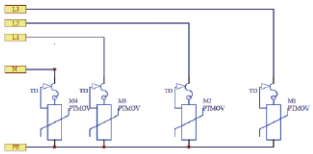
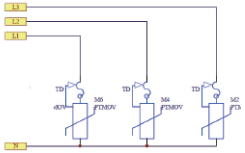
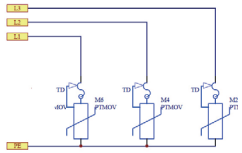
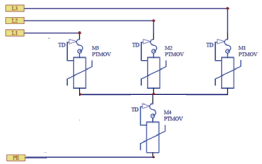
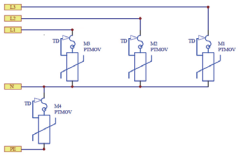
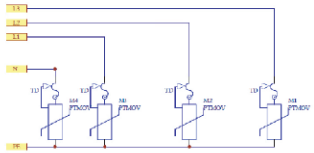
Model No.	System Voltage (50/60Hz)	In (kA)	Protected Mode				Voltage Protection Ratings (VPR @6kV/ 3kA,V)				Surge Capacity per phase	MCOV (Vac)
			L-N	L-G	N-G	L-L	L-N	L-G	N-G	L-L		
PSPF277YG11/T1	480Y/277V Three-phase wye	20	×	✓	✓	✓	-	900	900	1800	50kA	320
PSPF277YN11/T1		20	✓	×	✓	✓	900	-	900	1800	50kA	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
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: The PSPF supports multiple installation methods, and Prosurge provides all necessary mounting accessories.

- Examples of DIN-rail mounting:



PSP F (In :20kA) - Basic Circuit Diagram

Un/ Power system (50/60 HZ)	Basic Surge Protection Circuit Diagram			
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 230 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 230/400 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 VAC 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) 		

Panel SPDs | 100-600kA | Multi-phase PSP C

Prosurge PSP C series panel SPDs are defined as high performance surge protection solution for most commercial and industrial environments with critical operations. They include Type 1 and Type 2 SPDs that protect against the harmful effects of transient surges.

Typical Application:

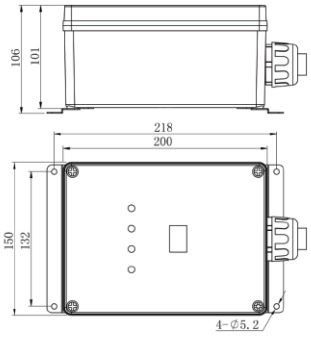
In medium & high exposure locations

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

PSP Category	PSP C1	PSP C2	HPSP
Certification	ANSI / UL 1449 5th, UL1283, CSA C22.2, Type 1, Type 2		
Connection Type	Parallel Connected		
Nominal Voltage (AC)	120-600V	120-600V	120-480V
Surge Capacity	100~300kA	100~300kA	400~600kA
SCCR	200kArms		
UL1283 EMI / RFI filter	Sine wave tracking, up to -45dB from 10kHz to 100MHz (Type 2 only)		
Lightning Counter Current	≥ 200A (with Reset button)		
Failure Pre-Test	Press 2S (test button)		
Power Status Indication	Normal = Green LED ON		
Working Status Indication	Normal = Green LED ON; Fail=Red LED ON		
Power Connecting	10 AWG (L1=black; L2=red; L3=blue; N=white; PE=green)		
Signal Cable (Remote Alarm)	16 AWG (C=red; NC=blue; NO=brown)		
Working Environment	Temperature: -40°C~+75°C; Humidity relative 5~95% (25°C); Altitude: ≤3km		
Dimension, WxDxH	232x150x106 mm	286x200x120 mm	232x150x106 mm
Threaded NPT	3/4" NPT		
Enclosure	Waterproof plastic enclosure	Waterproof metal enclosure	Waterproof plastic enclosure
Net Weight (Typical Value)	1.59kg	4.3Kg	1.8Kg

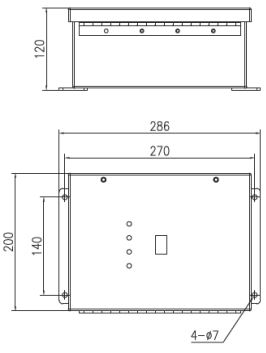
C1/HPSP: Waterproof plastic enclosure

- Dimension drawing



C2: Waterproof metal enclosure

- Dimension drawing



PSP C - Technical Data:

Note: % means 2 to 6 (Surge capacity 100kA~300kA per phase)

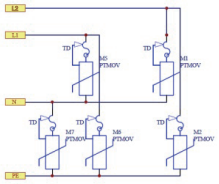
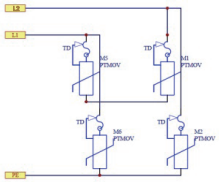
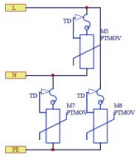
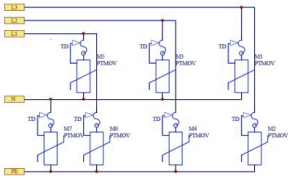
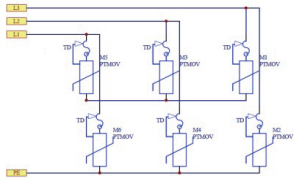
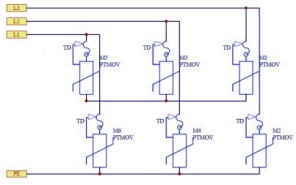
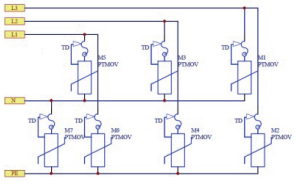
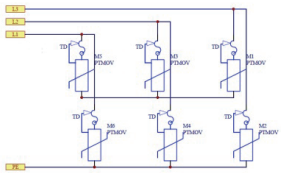
Model No.	System Voltage (50/60Hz)	In (kA)	Protected Mode				Voltage Protection Ratings (VPR @6kV/ 3kA,V)				Surge Capacity per phase	MCOV (Vac)
			L-N	L-G	N-G	L-L	L-N	L-G	N-G	L-L		
PSP120SP%2/*CTA	120/240V Split-phase	20	✓	✓	✓	✓	600	700	700	1200	100~300kA	150/300
PSP120SPC%2/*CTA	120/240V Split-phase No neutral	20	×	✓	×	✓	-	700	-	1200	100~300kA	150/300
PSP240SP%2/*CTA	240/480V Split-phase	20	✓	✓	✓	✓	1200	1200	1200	2000	100~300kA	320/640
PSP240SPC%2/*CTA	240/480V Split-phase No neutral	20	×	✓	×	✓	-	1200	-	2000	100~300kA	320/640
PSP120Y%2/*CTA	208Y120V Three-phase wye	20	✓	✓	✓	✓	600	700	700	1200	100~300kA	150
PSP120YC%2/*CTA	208Y120V Three-phase wye No neutral	20	×	✓	×	✓	-	700	-	1200	100~300kA	150
PSP127Y%2/*CTA	220Y127V Three-phase wye	20	✓	✓	✓	✓	600	700	700	1200	100~300kA	150
PSP127YC%2/*CTA	220Y127V Three-phase wye No neutral	20	×	✓	×	✓	-	700	-	1200	100~300kA	150
PSP240Y%2/*CTA	415Y240V Three-phase wye	20	✓	✓	✓	✓	1200	1200	1200	2000	100~300kA	320
PSP240YC%2/*CTA	415Y240V Three-phase wye No neutral	20	×	✓	×	✓	-	1200	-	2000	100~300kA	320
PSP277Y%2/*CTA	480Y277V Three-phase wye	20	✓	✓	✓	✓	1200	1200	1200	2000	100~300kA	320
PSP277YC%2/*CTA	480Y277V Three-phase wye No neutral	20	×	✓	×	✓	-	1200	-	2000	100~300kA	320
PSP347Y%2/*CTA	600Y347V Three-phase wye	20	✓	✓	✓	✓	1500	1500	1500	2500	100~300kA	420
PSP347YC%2/*CTA	600Y347V Three-phase wye No neutral	20	×	✓	×	✓	-	1500	-	2500	100~300kA	420
PSP120H%2/*CTA	120/240V High-leg delta	20	✓	✓	✓	✓	600-1200HL	700-1200HL	700	1200-2000HL	100~300kA	150/320(HL)
PSP120HC%2/*CTA	120/240V High-leg delta No neutral	20	×	✓	×	✓	-	700-1200HL	-	1200-2000HL	100~300kA	150/320(HL)
PSP240H%2/*CTA	240/480V High-leg delta	20	✓	✓	✓	✓	1200-1800HL	1200-1800HL	1200	2000-3000HL	100~300kA	320/550(HL)
PSP240HC%2/*CTA	240/480V High-leg delta No neutral	20	×	✓	×	✓	-	1200-1800HL	-	2000-3000HL	100~300kA	320/550(HL)
PSP240D%2/*CTA	240V Three-phase delta	20	×	✓	×	✓	-	1200	-	1200	100~300kA	320
PSP480D%2/*CTA	480V Three-phase delta	20	×	✓	×	✓	-	1800	-	2000	100~300kA	550
PSP600D%2/*CTA	600V Three-phase delta	20	×	✓	×	✓	-	2000	-	2500	100~300kA	690
PSP120S%2/*CTA	120V Single-phase	20	✓	✓	✓	×	600	700	700	-	100~300kA	150
PSP127S%2/*CTA	127V Single-phase	20	✓	✓	✓	×	600	700	700	-	100~300kA	150
PSP240S%2/*CTA	240V Single-phase	20	✓	✓	✓	×	1200	1200	1200	-	100~300kA	320
PSP277S%2/*CTA	277V Single-phase	20	✓	✓	✓	×	1200	1200	1200	-	100~300kA	320
PSP347S%2/*CTA	347V Single-phase	20	✓	✓	✓	×	1500	1500	1500	-	100~300kA	420

HPSP - Technical Data:

Note: % means 4 to 6 (surge capacity 400kA~600kA per phase)

Model No.	System Voltage (50/60Hz)	In (kA)	Protected Mode				Voltage Protection Ratings (VPR @6kV/ 3kA,V)				Surge Capacity per phase	MCOV (Vac)
			L-N	L-G	N-G	L-L	L-N	L-G	N-G	L-L		
HPSP120SP%2/*CTA	120/240V Split-phase	20	✓	✓	✓	✓	600	700	700	1200	400~600kA	150/300
HPSP120SPC%2/*CTA	120/240V Split-phase No neutral	20	×	✓	×	✓	-	700	-	1200	400~600kA	150/300
HPSP240SP%2/*CTA	240/480V Split-phase	20	✓	✓	✓	✓	1200	1200	1200	2000	400~600kA	320/640
HPSP240SPC%2/*CTA	240/480V Split-phase No neutral	20	×	✓	×	✓	-	1200	-	2000	400~600kA	320/640
HPSP127Y%2/*CTA	220Y127V Three-phase wye	20	✓	✓	✓	✓	600	700	700	1200	400~600kA	150
HPSP127YC%2/*CTA	220Y127V Three-phase wye No neutral	20	×	✓	×	✓	-	700	-	1200	400~600kA	150
HPSP240Y%2/*CTA	415Y240V Three-phase wye	20	✓	✓	✓	✓	1200	1200	1200	2000	400~600kA	320
HPSP240YC%2/*CTA	415Y240V Three-phase wye No neutral	20	×	✓	×	✓	-	1200	-	2000	400~600kA	320
HPSP277Y%2/*CTA	480Y277V Three-phase wye	20	✓	✓	✓	✓	1200	1200	1200	2000	400~600kA	320
HPSP277YC%2/*CTA	480Y277V Three-phase wye No neutral	20	×	✓	×	✓	-	1200	-	2000	400~600kA	320
HPSP347Y%2/*CTA	600Y347V Three-phase wye	20	✓	✓	✓	✓	1500	1500	1500	2500	400~600kA	420
HPSP347YC%2/*CTA	600Y347V Three-phase wye No neutral	20	×	✓	×	✓	-	1500	-	2500	400~600kA	420
HPSP120H%2/*CTA	120/240V High-leg delta	20	✓	✓	✓	✓	600-1200HL	700-1200HL	700	1200-2000HL	400~600kA	150/320(HL)
HPSP120HC%2/*CTA	120/240V High-leg delta No neutral	20	×	✓	×	✓	-	700-1200HL	-	1200-2000HL	400~600kA	150/320(HL)
HPSP240H%2/*CTA	240/480V High-leg delta	20	✓	✓	✓	✓	1200-1800HL	1200-1800HL	1200	2000-3000HL	400~600kA	320/550(HL)
HPSP240HC%2/*CTA	240/480V High-leg delta No neutral	20	×	✓	×	✓	-	1200-1800HL	-	2000-3000HL	400~600kA	320/550(HL)
HPSP240D%2/*CTA	240V Three-phase delta	20	×	✓	×	✓	-	1200	-	1200	400~600kA	320
HPSP480D%2/*CTA	480V Three-phase delta	20	×	✓	×	✓	-	1800	-	2000	400~600kA	550
HPSP127S%2/*CTA	127V Single-phase	20	✓	✓	✓	×	600	700	700	-	400~600kA	150
HPSP277S%2/*CTA	277V Single-phase	20	✓	✓	✓	×	1200	1200	1200	-	400~600kA	320
HPSP347S%2/*CTA	347V Single-phase	20	✓	✓	✓	×	1500	1500	1500	-	400~600kA	420

PSP C, HPSP - Basic Circuit Diagram

Un/ Power System (50/60 HZ)	Basic Surge Protection Circuit Diagram	
	Power System with Neutral Line	Power System without Neutral Line
120/240VAC split phase 240/480VAC split phase …	(H)PSP…SP%2…(3W+G) 	(H)PSP…SPC%2…(2W+G) 
120VAC single phase 127VAC single phase 220VAC single phase 230VAC single phase 240VAC single phase 277VAC single phase 347VAC single phase …	(H)PSP…S%2…(2W+G) 	
120/208VAC WYE 127/220VAC WYE 220/380VAC WYE 230/400VAC WYE 240/415VAC WYE 277/480VAC WYE 347/600VAC WYE …	(H)PSP…Y%2…(4W+G) 	(H)PSP…YC%2…(3W+G) 
240VAC Delta 480VAC Delta 600VAC Delta …		(H)PSP...D%2…(3W+G) 
120/240VAC High-leg delta 240/480VAC High-leg delta …	(H)PSP...H%2…(4W+G, L2 is High-leg) 	(H)PSP...HC%2…(3W+G, L2 is High-leg) 

Panel SPDs | max. 900kA | Multi-phase PS

Prosurge PS series panel SPDs are ultra-large surge capacity design for critical application with very high exposure to lightning. They are UL 1449 5th Type 1 / Type 2 tested for point-of-entry (Category C, D, E, IEEE C62.41) and sub-circuit (Category B) protection. With surge capacity up to 900kA 8/20μs, PS series can meet most critical challenge worldwide and ensure maintenance-free for its lifetime.

By employing Prosurge's patented SMTMOV/HSMTMOV, a thermally protected and arc extinguishing technology component, PS series has a significant advantage in abnormal over-voltage & high fault current safety and thus ensure industry's highest level of safety and performance. The parallel redundancy modules design makes PS series more robust and reliable.

The **Anticipatory Failure Monitoring (AFM) technology** allows users to replace SPD before the protected electrical equipment or systems are threatened by overloads and thus ensure **uninterrupted surge protection**. Three stages LED indication (Blue-Yellow-Red) can help users to understand the current protection status. When the blue LED indicator turns to yellow, it shows that the SPD is in potential failure status and a replacement of the SPD is recommended. If the SPD is not replaced, it still continue to provide limited protection yet further overloads may lead to the risk of surge damage.

3 stages of Anticipatory Failure Monitoring

Light:	**Blue**	**Yellow**	**Red**
Status:	Normal	Potential Failure (recommend to replace)	Failure

Rating :

- **MCOV (Vac): 150V~690V**
- **Surge capacity (8/20μs): 150~600kA per phase, built with SMTMOV(Imax:50kA) modules**
- **225~900kA per phase, built with HSMTMOV(Imax:75kA) modules**
- **Lightning capacity (10/350μs): 12.5~80kA per phase, EN/IEC 61643-1/11 Class I test**
- **Short circuit current rating (SCCR): 200kArms - tested without external CB or fuse**

Features:

- UL listed Type 1 (ANSI/UL1449 5th, CSA C22.2) SPDs
- UL listed Type 2 (ANSI/UL1449 5th, CSA C22.2) SPDs with sine wave tracking
- Prosurge patented SCCR 200kArms thermally protected MOV technology (SMTMOV/HSMTMOV) as key component
- Full modes protection & high surge energy capability with compact size
- Low voltage protection rating
- Failure indication. Anticipatory Failure Monitoring (AFM) technology to ensure permanent surge protection
- Surge event counter optional
- Sine wave tracking function optional
- Floating changeover contact for remote alarm
- Threaded NPT
- Waterproof metal enclosure to resist dirt, dust and water
- Meet both standards of UL1449 5th and IEC/EN 61643-11

Typical Application:

In high exposure location, be ideal for primary service or building entrances protection applications:

- All power circuit
- Telecommunication application (cell towers, base station, data center, transfer center etc.)
- Industrial
- Commercial
- Renewable energy
- Oil or mineral

Adopt SMTMOV/HSMTMOV as Key Component

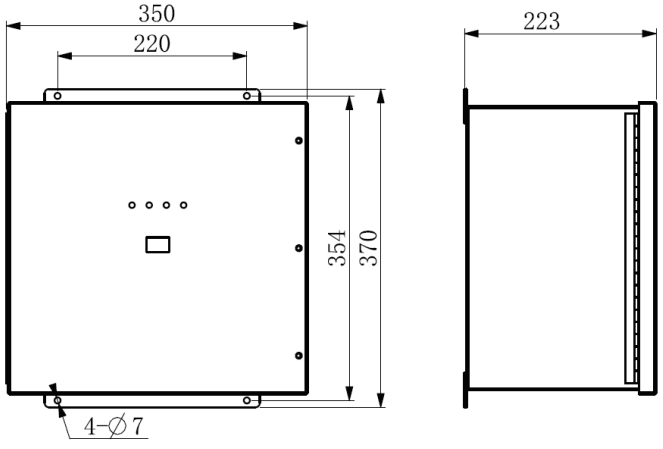
Configuration & Ordering Information:

PS Model	277Y Voltage and system configuration	C Protection mode	42 Surge capacity	T Gas tube optional	/ T1 SPD Category	CA Addtional function
PS	*120SP*: 120/240V split *240SP*: 240/480V split *120Y*: 120/208V WYE *277Y*: 277/480V WYE *120H*: 120/240V high-leg delta *240D*: 240V delta *120S*: 120V 1ph, 2W+G …	*C*: Delete N-G protection mode *G*: Only L/N (if needed) -G protection, delete L-N and L-L (if present) protection *N*: Only L-N & N-G protection, delete L-G protection *N/A* : Full modes protection	31: 150 or 225[1] kA /phase 41: 200 or 300[1] kA /phase 51: 250 or 375[1] kA /phase 61: 300 or 450[1] kA /phase 32: 300 or 450[1] kA /phase 42: 400 or 600[1] kA /phase 52: 500 or 750[1] kA /phase 62: 600 or 900[1] kA /phase	*T*: Gas Tube used for N-G protection mode	*T1*: UL type 1 SPD *T2F*: UL type 2 SPD with sine wave tracking	*C*: surge event counter *A*: remote alarm

[1] The models with higher surge capacity are built with HSMTMOV (Uc range: 150~320)

PS Category	D
Certification	ANSI / UL 1449 5th, CSA C22.2, Type 1, Type 2
Connection Type	Parallel Connected
Surge Capacity	150~900kA per phase
SCCR	200kArms
Sine Wave Tracking	Optional for UL Type 2 listed
Lightning Counter Current	≥ 200A (with Reset button)
Failure Pre-Test	Press 2S (test button)
Power Status Indication	Normal=Blue LED ON
Working Status Indication	Three stage (Normal= Blue LED ON; Need replace= Yellow; Fail= turn to Red)
Power Connecting	8 AWG (L1=black; L2=red; L3=blue; N=white; PE=green)
Signal Cable	16 AWG (C=red; NC=blue; NO=brown)
Working Environment	Temperature: -40°C~+85°C; Humidity relative 5~95% (25°C); Altitude: ≤3km
Dimensions, W x D x H	350 x 370 x 223 mm
Threaded NPT	1" NPT
Enclosure	Waterproof metal enclosure
Net Weight (Typical Value)	10.6 kg

- Dimension drawing



PS series - Technical Data

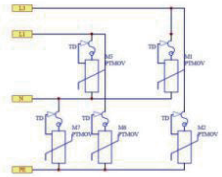
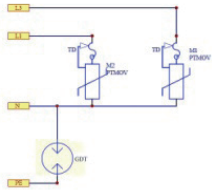
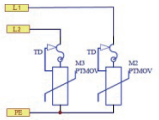
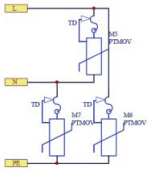
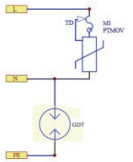
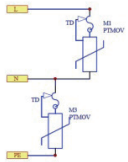
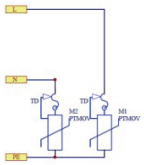
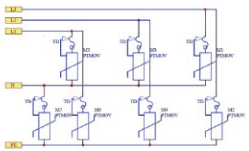
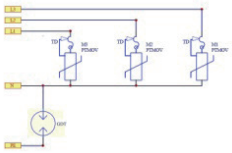
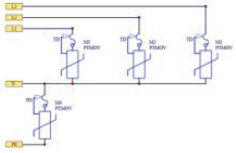
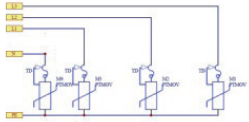
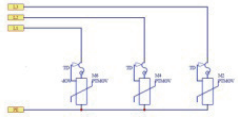
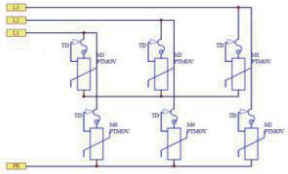
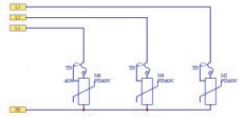
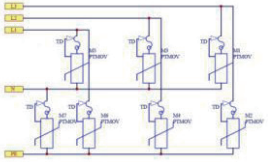
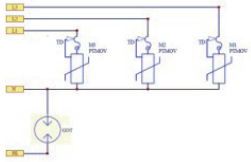
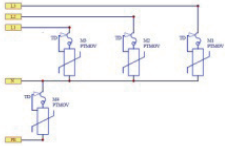
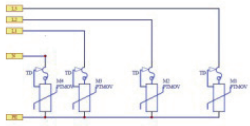
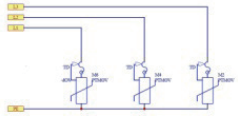
Note: % means 3 to 6 (Surge capacity 150kA~300kA per mode when SMMTOV is used, or 225kA~450kA when HSMTMOV is used)
(2) lightning capacity of NPE mode is 100kA 10/350μs

Model No.	System Voltage (50/60Hz)	In (kA)	Protected Mode				Voltage Protection Ratings (VPR @6KV/ 3kA,V)				Surge Capacity per phase (8/20μs)	Lightning Capacity per phase (10/350μs)	MCOV (Vac)
			L-N	L-G	N-G	L-L	L-N	L-G	N-G	L-L			
PS120SP%2/*CA	120/240V Split-phase	20	✓	✓	✓	✓	700	700	700	1200	300~900kA	25~80kA	150
PS120SPC%1/*CA			×	✓	×	✓	-	700	-	1200	150~450kA	12.5~40kA	150
PS120SPN%1T/*CA			✓	✓	✓	✓	700	1500	1500	1200	150~450kA	12.5~40kA(2)	150
PS240SP%2/*CA	240/480V Split-phase	20	✓	✓	✓	✓	1200	1200	1200	2000	300~900kA	25~80kA	320
PS240SPC%1/*CA			×	✓	×	✓	-	1200	-	2000	150~450kA	12.5~40kA	320
PS240SPN%1T/*CA			✓	✓	✓	✓	1200	2000	1500	2000	150~450kA	12.5~40kA(2)	320
PS120Y%2/*CA	208Y120V Three-phase wye	20	✓	✓	✓	✓	700	700	700	1200	300~900kA	25~80kA	150
PS120YN%1T/*CA			✓	✓	✓	✓	700	1500	1500	1200	150~450kA	12.5~40kA(2)	150
PS120YN%1/*CA			✓	✓	✓	✓	700	1200	700	1200	150~450kA	12.5~40kA	150
PS120YG%1/*CA			✓	✓	✓	✓	1200	700	700	1200	150~450kA	12.5~40kA	150
PS120YC%1/*CA			×	✓	×	✓	-	700	-	1200	150~450kA	12.5~40kA	150
PS127Y%2/*CA	220Y127V Three-phase wye	20	✓	✓	✓	✓	700	700	700	1200	300~900kA	25~80kA	150
PS127YN%1T/*CA			✓	✓	✓	✓	700	1500	1500	1200	150~450kA	12.5~40kA(2)	150
PS127YN%1/*CA			✓	✓	✓	✓	700	1200	700	1200	150~450kA	12.5~40kA	150
PS127YG%1/*CA			✓	✓	✓	✓	1200	700	700	1200	150~450kA	12.5~40kA	150
PS127YC%1/*CA			×	✓	×	✓	-	700	-	1200	150~450kA	12.5~40kA	150
PS230Y%2/*CA	400Y230V Three-phase wye	20	✓	✓	✓	✓	1200	1200	1200	2000	300~900kA	25~80kA	320
PS230YN%1T/*CA			✓	✓	✓	✓	1200	1500	1500	2000	150~450kA	12.5~40kA(2)	320
PS230YN%1/*CA			✓	✓	✓	✓	1200	2000	1200	2000	150~450kA	12.5~40kA	320
PS230YG%1/*CA			✓	✓	✓	✓	2000	1200	1200	2000	150~450kA	12.5~40kA	320
PS230YC%1/*CA			×	✓	×	✓	-	1200	-	2000	150~450kA	12.5~40kA	320
PS240Y%2/*CA	415Y240V Three-phase wye	20	✓	✓	✓	✓	1200	1200	1200	2000	300~900kA	25~80kA	320
PS240YN%1T/*CA			✓	✓	✓	✓	1200	1500	1500	2000	150~450kA	12.5~40kA(2)	320
PS240YN%1/*CA			✓	✓	✓	✓	1200	2000	1200	2000	150~450kA	12.5~40kA	320
PS240YG%1/*CA			✓	✓	✓	✓	2000	1200	1200	2000	150~450kA	12.5~40kA	320
PS240YC%1/*CA			×	✓	×	✓	-	1200	-	2000	150~450kA	12.5~40kA	320
PS277Y%2/*CA	480Y277V Three-phase wye	20	✓	✓	✓	✓	1200	1200	1200	2000	300~900kA	25~80kA	320
PS277YN%1/*CA			✓	✓	✓	✓	1200	2000	1200	2000	150~450kA	12.5~40kA	320
PS277YG%1/*CA			✓	✓	✓	✓	2000	1200	1200	2000	150~450kA	12.5~40kA	320
PS277YC%1/*CA			×	✓	×	✓	-	1200	-	2000	150~450kA	12.5~40kA	320
PS347Y%2/*CA	600Y347V Three-phase wye	20	✓	✓	✓	✓	1500	1500	1500	2500	300~600kA	25~80kA	420
PS347YN%1/*CA			✓	✓	✓	✓	1500	2500	1500	2500	150~300kA	12.5~40kA	420
PS347YG%1/*CA			✓	✓	✓	✓	2500	1500	1500	2500	150~300kA	12.5~40kA	420
PS347YC%1/*CA			×	✓	×	✓	-	1500	-	2500	150~300kA	12.5~40kA	420
PS120H%2/*CA	120/240V High-leg delta	20	✓	✓	✓	✓	700-1200HL	700-1200HL	700	1200-2000HL	300~900kA	25~80kA	150/320HL
PS120HN%1T/*CA			✓	✓	✓	✓	700-1200HL	1500-2000HL	1500	1200-2000HL	150~450kA	12.5~40kA(2)	150/320HL
PS120HN%1/*CA			✓	✓	✓	✓	700-1200HL	1200-2000HL	700	1200-2000HL	150~450kA	12.5~40kA	150/320HL
PS120HG%1/*CA			✓	✓	✓	✓	1200-2000HL	700-1200HL	700	1200-2000HL	150~450kA	12.5~40kA	150/320HL
PS120HC%1/*CA			×	✓	×	✓	-	700-1200HL	-	1200-2000HL	150~450kA	12.5~40kA	150/320HL

PS series - Technical Data

Model No.	System Voltage (50/60Hz)	In (kA)	Protected Mode				Voltage Protection Ratings (VPR @6KV/ 3kA,V)				Surge Capacity per phase (8/20μs)	Lightning Capacity per phase (10/350μs)	MCOV (Vac)
			L-N	L-G	N-G	L-L	L-N	L-G	N-G	L-L			
PS240H%2/*CA	240/480V High-leg delta	20	✓	✓	✓	✓	1200-2000HL	1200-2000HL	1200	2000-3000HL	300~600kA	25~50kA	320/550HL
PS240HN%1T/*CA			✓	✓	✓	✓	1200-2000HL	1500-3000HL	1500	2000-3000HL	150~300kA	12.5~25kA(2)	320/550HL
PS240HN%1/*CA			✓	✓	✓	✓	1200-2000HL	2000-3000HL	1200	2000-3000HL	150~300kA	12.5~25kA	320/550HL
PS240HG%1/*CA			✓	✓	✓	✓	2000-3000HL	1200-2000HL	1200	2000-3000HL	150~300kA	12.5~25kA	320/550HL
PS240HC%1/*CA			×	✓	×	✓	-	1200-2000HL	-	2000-3000HL	150~300kA	12.5~25kA	320/550HL
PS240D%2/*CA	240V Three-phase delta	20	×	✓	×	✓	-	1200	-	1200	300~900kA	25~80kA	320
PS240DG%1/*CA			×	✓	×	✓	-	1200	-	1500	150~450kA	12.5~40kA	320
PS480D%N2/*CA	480V Three-phase delta	20	×	✓	×	✓	-	1800	-	1800	300~600kA	25~50kA	550
PS480DGx1/*CA			×	✓	×	✓	-	1800	-	3000	150~300kA	12.5~25kA	550
PS600D%2/*CA	600V Three-phase delta	20	×	✓	×	✓	-	2000	-	2000	300~600kA	25~50kA	690
PS600DG%1/*CA			×	✓	×	✓	-	2000	-	4000	150~300kA	12.5~25kA	690
PS120S%2/*CA	120V Single-phase	20	✓	✓	✓	×	700	700	700	-	300~900kA	25~40kA	150
PS120SN%1T/*CA			✓	✓	✓	×	700	1500	1500	-	150~450kA	12.5~40kA(2)	150
PS120SN%1/*CA			✓	✓	✓	×	700	1200	700	-	150~450kA	12.5~40kA	150
PS120SG%1/*CA			✓	✓	✓	×	1200	700	700	-	150~450kA	12.5~40kA	150
PS127S%2/*CA	127V Single-phase	20	✓	✓	✓	×	700	700	700	-	300~900kA	25~40kA	150
PS127SN%1T/*CA			✓	✓	✓	×	700	1500	1500	-	150~450kA	12.5~40kA(2)	150
PS127SN%1/*CA			✓	✓	✓	×	700	1200	700	-	150~450kA	12.5~40kA	150
PS127SG%1/*CA			✓	✓	✓	×	1200	700	700	-	150~450kA	12.5~40kA	150
PS230S%2/*CA	230V Single-phase	20	✓	✓	✓	×	1200	1200	1200	-	300~900kA	25~40kA	320
PS230SN%1T/*CA			✓	✓	✓	×	1200	1500	1500	-	150~450kA	12.5~40kA(2)	320
PS230SN%1/*CA			✓	✓	✓	×	1200	2000	1200	-	150~450kA	12.5~40kA	320
PS230SG%1/*CA			✓	✓	✓	×	2000	1200	1200	-	150~450kA	12.5~40kA	320
PS240S%2/*CA	240V Single-phase	20	✓	✓	✓	×	1200	1200	1200	-	300~900kA	25~40kA	320
PS240SN%1T/*CA			✓	✓	✓	×	1200	1500	1500	-	150~450kA	12.5~40kA(2)	320
PS240SN%1/*CA			✓	✓	✓	×	1200	2000	1200	-	150~450kA	12.5~40kA	320
PS240SG%1/*CA			✓	✓	✓	×	2000	1200	1200	-	150~450kA	12.5~40kA	320
PS277S%2/*CA	277V Single-phase	20	✓	✓	✓	×	1200	1200	1200	-	300~600kA	25~50kA	420
PS277SN%1/*CA			✓	✓	✓	×	1200	2000	1200	-	150~300kA	12.5~25kA	420
PS277SG%1/*CA			✓	✓	✓	×	2000	1200	1200	-	150~300kA	12.5~25kA	420
PS347S%2/*CA	347V Single-phase	20	✓	✓	✓	×	1500	1500	1500	-	300~600kA	25~50kA	420
PS347SN%1/*CA			✓	✓	✓	×	1500	2500	1500	-	150~300kA	12.5~25kA	420
PS347SG%1/*CA			✓	✓	✓	×	2500	1500	1500	-	150~300kA	12.5~25kA	420

PS Series - Basic Circuit Diagram

Un/ Power system (50/60 HZ)	Basic Surge Protection Circuit Diagram		Basic Surge Protection Circuit Diagram		
	Normal model	N-G mode use GDT, Delete L-G mode (if present)	Delete L-G mode (if present)	Delete L-N or L-L mode (if present)	Delete N-G mode (if present)
120/240VAC split phase 240/480VAC split phase …	PS…SP%2…(3W+G) 	PS..SPN%1T…(3W+G) 			PS…SPC%1…(2W+G) 
120VAC single phase 127VAC single phase 220VAC single phase 230VAC single phase 240VAC single phase 277VAC single phase 347VAC single phase …	PS…S%2…(2W+G) 	PS…SN%1T…(2W+G) 	PS…SN%1…(2W+G) 	PS…SG%1…(2W+G) 	
120/208VAC WYE 127/220VAC WYE 220/380VAC WYE 230/400VAC WYE 240/415VAC WYE 277/480VAC WYE 347/600VAC WYE …	PS…Y%2…(4W+G) 	PS…YN%1T…(4W+G) 	PS…YN%1…(4W+G) 	PS…YG%1…(4W+G) 	PS…YC%1…(3W+G) 
240VAC Delta 480VAC Delta 600VAC Delta …	PS…D%2…(3W+G) 			PS…DG%1…(3W+G) 	
120/240VAC High-leg delta 240/480VAC High-leg delta …	PS…H%2… (4W+G, L2 is High-leg) 	PS…HN%1T…(4W+G, L2 is High-leg) 	PS…HN%1…(4W+G, L2 is High-leg) 	PS…HG%1…(4W+G, L2 is High-leg) 	PS…HC%1…(3W+G, L2 is High-leg) 

Load center | Plug-on SPD | 50kA | Split phase POSP

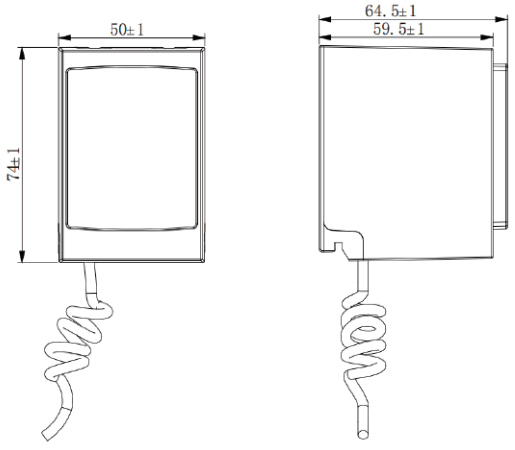
ProSurge®
Maximum Safety in Surge Protection

POSP series plug-on SPDs are extra compact UL Type 1 SPD with nominal discharge current up to 20kA, designed to use in service entrance locations/load center/panel board to protect single phase against the harmful effects of transient surges. Plug-on design for universal 1-inch spaces single phase load center, the SPD is directly plugged on to the bus and requires two adjacent mounting spaces.

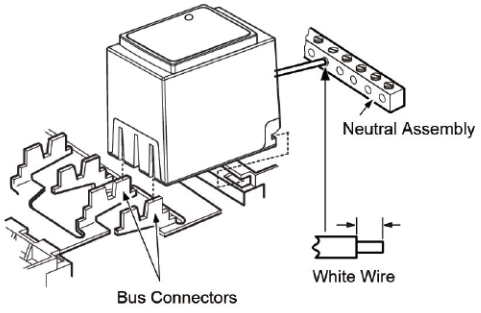
Due to be constructed with Prosurge patented PTMOV , POSP has a significant advantage in abnormal over-voltage & high fault current safety and thus ensure industry's highest level of safety and performance.An indicator LED to demonstrate the power & protection status. POSP is tested and listed as Type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

Model No.	POSP120SP20
Certification	ANSI/UL1449 5th, Type1
Nominal Voltage (AC)	120/240V Split phase
Protection Mode	L-L,L-N
Surge Capacity	50kA per Phase
Nominal Discharge Current(In)	20kA
Maximum Continuous Operating Voltage (MCOV)	L-N :150Vac, L-L:300Vac
Voltage Protection Rating (VPR)	L-N:600V, L-L:1000V
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, connect to neutral bus
Installation Width	Two 1-inch poles
Enclosure	Plastic enclosure
Dimensions, W x D x H	74x50x64.5mm
Working Environments	Temperature –40°C+75°C, Humidity relative 5~95% (25°C) , Altitude≤3km
Net Weight (Typical Value)	0.2 kg

- Dimension drawing



- Plug-on installation



DIN-rail SPDs | AC Power | 50kA | UL SP

Prosurge SP series DIN-rail SPD is a Type 1CA SPD according to UL1449 5th & CSA C22.2, designed for low-voltage power supply system surge protection, especially for point of entry (Category C, D, ANSI/IEEE C62.41) and sub-circuit (Category B, ANSI/IEEE C62.41) protection.

Rating:

- **MCOV (Vac): 150V~690V**
- **Max. discharge current (8/20us): 50kA**
- **Short circuit current rating (SCCR): 200kArms - tested without external CB or fuse**

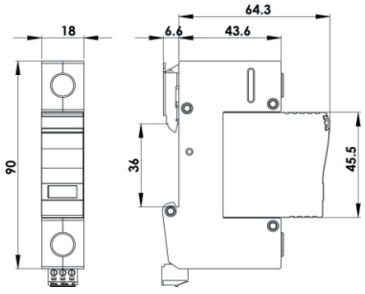
Features:

- UL recognized Type 1CA SPD per ANSI/UL 1449 5th and CSA C22.2 -UL file No. E319871, KEMA certified Class II (T2) SPD per IEC/EN 61643-11
- Low voltage protection level
- DIN-rail mounting configuration
- Failure indication and optional remote signal contact
- Pluggable module for easy replacement
- Meet both standards of UL1449 5th and IEC 61643-11
- Global patented thermal disconnector design with arc extinguishing device, fail-safe & self-protected, quick thermal response and perfect circuit cutoff function. No additional over-current protection devices required

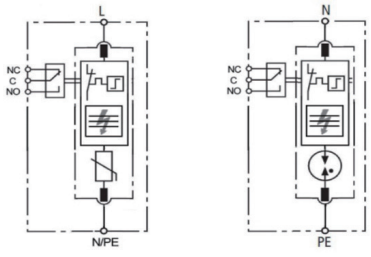
Single pole

Part No.		Pole	Max. Discharge Current, Imax (8/20μs) (kA)	Nominal Discharge Current, In (8/20μs) (kA)	Nominal Voltage (VAC)	Max. Continuous Operating Voltage, MCOV (VAC)	Voltage Protection Rating, VPR (kV)	SCCR Rating (kArms)
Type 1CA	Type 2CA							
SP150-S	SP150C-S	1	50	20	120	150	0.7	200
SP180-S	SP180C-S	1	50	20	127	180	1.0	200
SP275A-S	SP275AC-S	1	50	20	240	275	1.0	200
SP320-S	SP320C-S	1	50	20	277	320	1.2	200
SP385-S	SP385C-S	1	50	20	277	385	1.5	200
SP420-S	SP420C-S	1	50	20	347	420	1.5	200
SP550-S	SP550C-S	1	50	20	480	550	1.8	200
SP690-S	SP690C-S	1	40	20	600	690	2.5	200
SP150T-S	SP150TC-S	1	50	20	Neutral	150	0.9	200
SP255T-S	SP255TC-S	1	50	20	Neutral	255	0.9	200

- Dimension drawing



- Basic circuit diagram



L-N/PE (1P)

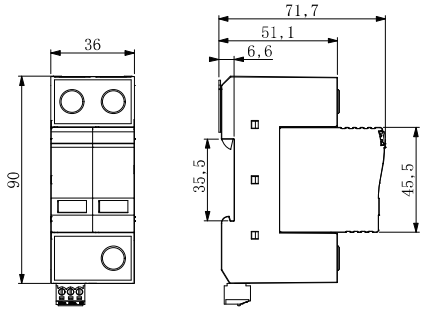
N-PE (1P)

Single-phase
Two-wire + Ground

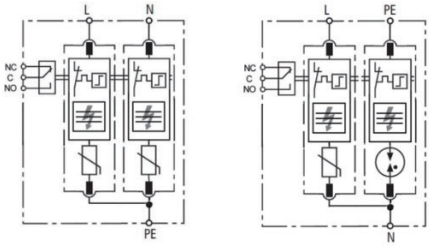
Part No.		Pole	Max. Discharge Current, Imax (8/20μs) (kA)	Nominal Discharge Current, In (8/20μs) (kA)	Nominal Voltage (VAC)	Max. Continuous Operating Voltage, MCOV (VAC)			Voltage Protection Rating, VPR (kV)			SCCR Rating (kArms)
Type 1CA	Type 2CA					L-N	L-G	N-G	L-N	L-G	N-G	
SP150/2P-S	SP150C/2P-S	2	50	20	120V	-	150	150	-	0.7	0.7	200
SP150/PN-S*	SP150C/PN-S*	2	50	20	120V	150	-	150*	0.7	-	0.9	200
SP180/2P-S	SP180C/2P-S	2	50	20	127V	-	180	180	-	1.0	1.0	200
SP180/PN-S*	SP180C/PN-S*	2	50	20	127V	180	-	150*	1.0	-	0.9	200
SP275A/2P-S	SP275AC/2P-S	2	50	20	230V	-	275	275	-	1.0	1.0	200
SP275A/PN-S*	SP275AC/PN-S*	2	50	20	230V	275	-	255*	1.0	-	0.9	200
SP320/2P-S	SP320C/2P-S	2	50	20	240V	-	320	320	-	1.2	1.2	200
SP320/PN-S*	SP320C/PN-S*	2	50	20	240V	320	-	255*	1.2	-	0.9	200
SP385/2P-S	SP385C/2P-S	2	50	20	277V	-	385	385	-	1.5	1.5	200
SP385/PN-S*	SP385C/PN-S*	2	50	20	277V	385	-	255*	1.5	-	0.9	200
SP420/2P-S	SP420C/2P-S	2	50	20	347V	-	420	420	-	1.5	1.5	200
SP420/PN-S*	SP420C/PN-S*	2	50	20	347V	420	-	255*	1.5	-	0.9	200

* PN : GDT Module for N-PE pole

- Dimension drawing



- Basic circuit diagram

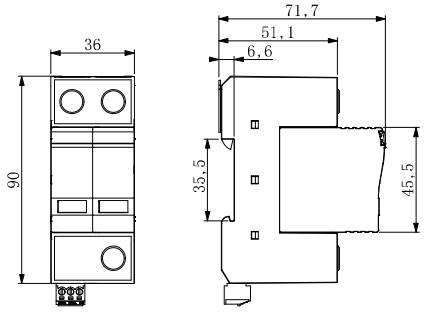


2+0 (2P) 1+1(2P)

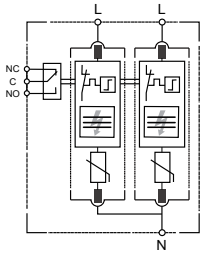
Split-phase
Three -wire

Part No.		Pole	Max. Discharge Current, Imax (8/20μs) (kA)	Nominal Discharge Current, In (8/20μs) (kA)	Nominal Voltage (VAC)	Max. Continuous Operating Voltage, MCOV (VAC)			Voltage Protection Rating, VPR (kV)			SCCR Rating (kArms)
Type 1CA	Type 2CA					L-N	L-G	N-G	L-N	L-G	N-G	
SP150/2SPN-S	SP150C/2SPN-S	2	50	20	120/240V	150	-	-	0.7	-	-	200
SP180/2SPN-S	SP180C/2SPN-S	2	50	20	120/240V	180	-	-	1.0	-	-	200
SP320/2SPN-S	SP320C/2SPN-S	2	50	20	240/480V	320	-	-	1.2	-	-	200

- Dimension drawing



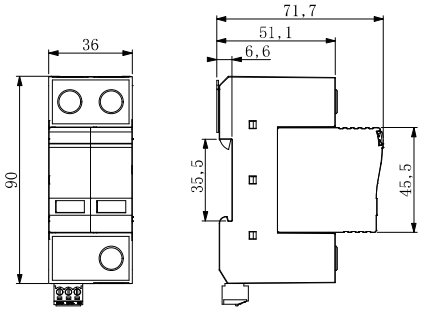
- Basic circuit diagram



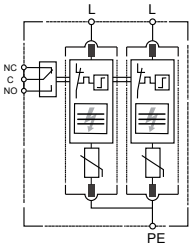
Split-phase
Two-wire + Ground

Part No.		Pole	Max. Discharge Current, Imax (8/20μs) (kA)	Nominal Discharge Current, In (8/20μs) (kA)	Nominal Voltage (VAC)	Max. Continuous Operating Voltage, MCOV (VAC)			Voltage Protection Rating, VPR (kV)			SCCR Rating (kArms)
Type 1CA	Type 2CA					L-N	L-G	N-G	L-N	L-G	N-G	
SP150/2SPG-S	SP150C/2SPG-S	2	50	20	120/240V	-	150	-	-	0.7	-	200
SP180/2SPG-S	SP180C/2SPG-S	2	50	20	120/240V	-	180	-	-	1.0	-	200
SP320/2SPG-S	SP320C/2SPG-S	2	50	20	240/480V	-	320	-	-	1.2	-	200

- Dimension drawing



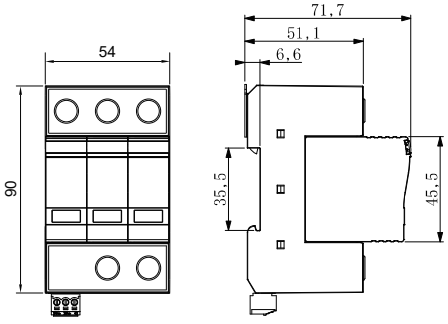
- Basic circuit diagram



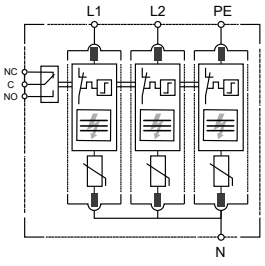
Split-phase
Three-wire + Ground

Part No.		Pole	Max. Discharge Current, Imax (8/20μs) (kA)	Nominal Discharge Current, In (8/20μs) (kA)	Nominal Voltage (VAC)	Max. Continuous Operating Voltage, MCOV (VAC)			Voltage Protection Rating, VPR (kV)			SCCR Rating (kArms)
Type 1CA	Type 2CA					L-N	L-G	N-G	L-N	L-G	N-G	
SP150/3SP-S	SP150C/3SP-S	3	50	20	120/240V	150	-	150	0.7	-	0.7	200
SP180/3SP-S	SP180C/3SP-S	3	50	20	120/240V	180	-	180	1.0	-	1.0	200
SP320/3SP-S	SP320C/3SP-S	3	50	20	240/480V	320	-	320	1.2	-	1.2	200

- Dimension drawing



- Basic circuit diagram

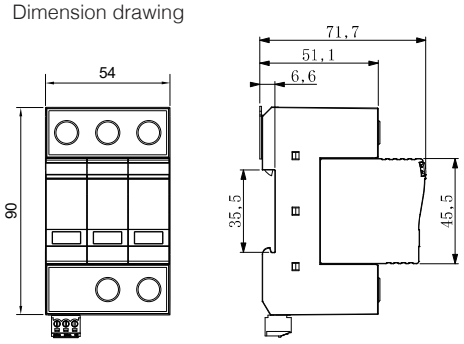


Three-phase WYE

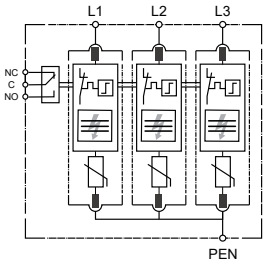
Three-wire + Ground

Part No.		Pole	Max. Discharge Current, Imax (8/20μs) (kA)	Nominal Discharge Current, In (8/20μs) (kA)	Nominal Voltage (VAC)	Max. Continuous Operating Voltage, MCOV (VAC)			Voltage Protection Rating, VPR (kV)			SCCR Rating (kArms)
Type 1CA	Type 2CA					L-N	L-G	N-G	L-N	L-G	N-G	
SP150/3P-S	SP150C/3P-S	3	50	20	208Y/120V	-	150	-	-	0.7	-	200
SP180/3P-S	SP180C/3P-S	3	50	20	220Y/127V	-	180	-	-	1.0	-	200
SP275A/3P-S	SP275AC/3P-S	3	50	20	400Y/230V	-	275	-	-	1.0	-	200
SP320/3P-S	SP320C/3P-S	3	50	20	415Y/240V	-	320	-	-	1.2	-	200
SP385/3P-S	SP385C/3P-S	3	50	20	480Y/277V	-	385	-	-	1.5	-	200
SP420/3P-S	SP420C/3P-S	3	50	20	600Y/347V	-	420	-	-	1.5	-	200
SP550/3P-S	SP550C/3P-S	3	50	20	600Y/347V	-	550	-	-	1.8	-	200

- Dimension drawing



- Basic circuit diagram



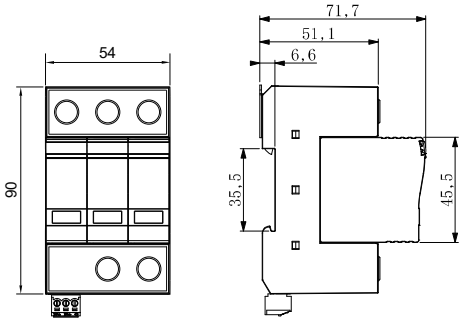
3+0 (3P)

Three-phase Delta

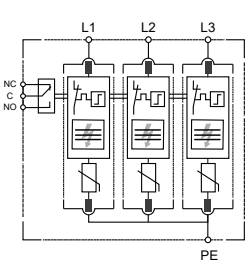
Three-wire + Ground

Part No.		Pole	Max. Discharge Current, Imax (8/20μs) (kA)	Nominal Discharge Current, In (8/20μs) (kA)	Nominal Voltage (VAC)	Max. Continuous Operating Voltage, MCOV (VAC)			Voltage Protection Rating, VPR (kV)			SCCR Rating (kArms)
Type 1CA	Type 2CA					L-N	L-G	N-G	L-N	L-G	N-G	
SP320/3D-S	SP320C/3D-S	3	50	20	240V	-	320	-	-	-	1.2	200
SP550/3D-S	SP550C/3D-S	3	50	20	480V	-	550	-	-	-	1.8	200
SP690/3D-S	SP690C/3D-S	3	40	20	600V	-	690	-	-	-	2.5	200

- Dimension drawing



- Basic circuit diagram



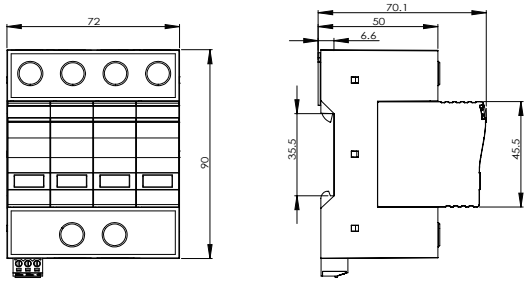
Three-phase WYE

Four-wire + Ground

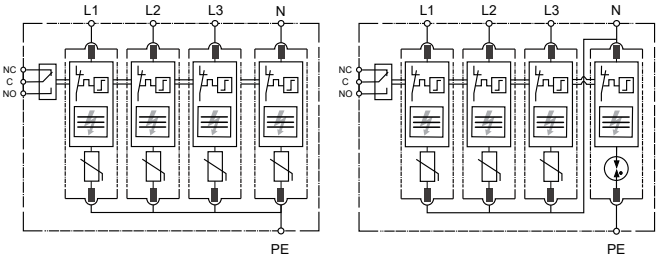
Part No.		Pole	Max. Discharge Current, Imax (8/20μs) (kA)	Nominal Discharge Current, In (8/20μs) (kA)	Nominal Voltage (VAC)	Max. Continuous Operating Voltage, MCOV (VAC)			Voltage Protection Rating, VPR (kV)			SCCR Rating (kArms)
Type 1CA	Type 2CA					L-N	L-G	N-G	L-N	L-G	N-G	
SP150/4P-S	SP150C/4P-S	4	50	20	208Y/120V	-	150	150	-	0.7	0.7	200
SP150/3PN-S*	SP150C/3PN-S*	4	50	20	208Y/120V	150	-	150*	0.7	-	0.9	200
SP180/4P-S	SP180C/4P-S	4	50	20	220Y/127V	-	180	180	-	1.0	1.0	200
SP180/3PN-S*	SP180C/3PN-S*	4	50	20	220Y/127V	180	-	150*	1.0	-	0.9	200
SP275A/4P-S	SP275AC/4P-S	4	50	20	400Y/230V	-	275	275	-	1.0	1.0	200
SP275A/3PN-S*	SP275AC/3PN-S*	4	50	20	400Y/230V	275	-	255*	1.0	-	0.9	200
SP320/4P-S	SP320C/4P-S	4	50	20	415Y/240V	-	320	320	-	1.2	1.2	200
SP320/3PN-S*	SP320C/3PN-S*	4	50	20	415Y/240V	320	-	255*	1.2	-	0.9	200
SP385/4P-S	SP385C/4P-S	4	50	20	480Y/277V	-	385	385	-	1.5	1.5	200
SP385/3PN-S*	SP385C/3PN-S*	4	50	20	480Y/277V	385	-	255*	1.5	-	0.9	200
SP420/4P-S	SP420C/4P-S	4	50	20	600Y/347V	-	420	420	-	1.5	1.5	200
SP420/3PN-S*	SP420C/3PN-S*	4	50	20	600Y/347V	420	-	255*	1.5	-	0.9	200

* 3PN : GDT Module for N-PE pole

- Dimension drawing



- Basic circuit diagram



4+0 (4P)

3+1 (4P)

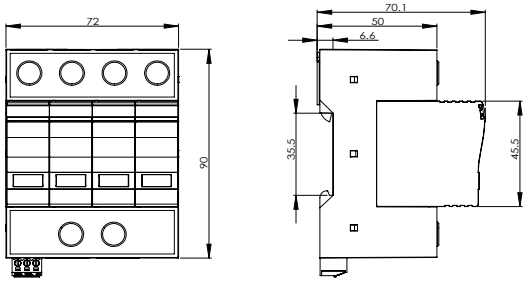
Three-phase WYE

Four-wire + Ground

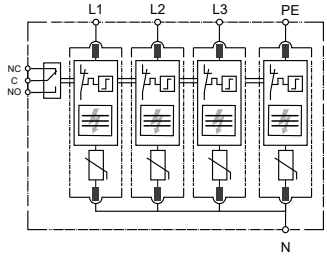
Part No.		Pole	Max. Discharge Current, Imax (8/20μs) (kA)	Nominal Discharge Current, In (8/20μs) (kA)	Nominal Voltage (VAC)	Max. Continuous Operating Voltage, MCOV (VAC)			Voltage Protection Rating, VPR (kV)			SCCR Rating (kArms)
Type 1CA	Type 2CA					L-N	L-G	N-G	L-N	L-G	N-G	
SP320/4PN-S*	-	4	50	20	480Y/277V	320	-	320	1.2	-	1.2	200
SP420/4PN-S*	-	4	50	20	600Y/347V	420	-	420	1.5	-	1.5	200

* 4PN : MOV Module for N-PE pole

- Dimension drawing



- Basic circuit diagram



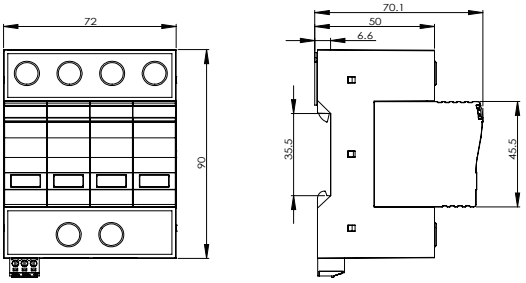
3+1 (4P)

Part No.		Pole	Max. Discharge Current, Imax (8/20μs) (kA)	Nominal Discharge Current, In (8/20μs) (kA)	Nominal Voltage (VAC)	Max. Continuous Operating Voltage, MCOV (VAC)			Voltage Protection Rating, VPR (kV)			SCCR Rating (kArms)
Type 1CA	Type 2CA					L-N	L-G	N-G	L-N	L-G	N-G	
SP240/3H-S	SP240C/3H-S	4	50	20	240H/120V	150 320(HL)	-	150	0.7 1.2(HL)	-	0.7	200
SP480/3H-S	SP480C/3H-S	4	50	20	480H/240V	320 550(HL)	-	320	1.2 1.8(HL)	-	1.2	200

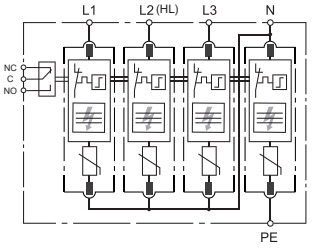
Three-phase Hi-Leg Delta

Four-wire + Ground

- Dimension drawing



- Basic circuit diagram



Accessory for SP series

Plug-in protection module

Part No		Module Type	Max. Discharge Current, Imax (8/20μs) (kA)	Nominal Discharge Current, In (8/20μs) (kA)	Max. Continuous Operating Voltage, MCOV (VAC)	Voltage Protection Rating, VPR (kV)	SCCR Rating (kArms)
Type 1CA	Type 2CA						
MSP150	MSP150C	MOV	50	20	150	0.7	200
MSP180	MSP180C	MOV	50	20	180	1.0	200
MSP275A	MSP275AC	MOV	50	20	275	1.0	200
MSP320	MSP320C	MOV	50	20	320	1.2	200
MSP385	MSP385C	MOV	50	20	385	1.5	200
MSP420	MSP420C	MOV	50	20	420	1.5	200
MSP550	MSP550C	MOV	50	20	550	1.8	200
MSP690	MSP690C	MOV	40	20	690	2.5	200
MSP150T	MSP150TC	GDT	50	20	150	0.9	200
MSP255T	MSP255TC	GDT	50	20	255	0.9	200

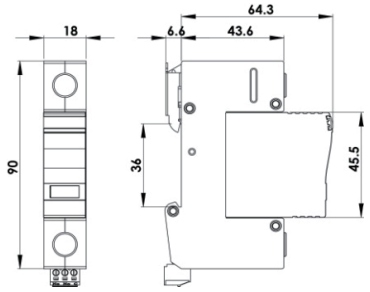
Rating:

- **MCOV (Vac): 150V~420V**
- **Max. discharge current (8/20us): 75kA**
- **Short circuit current rating (SCCR): 200kArms - tested without external CB or fuse**

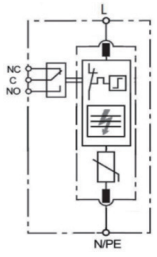
Part No.		Pole	Max. Discharge Current, Imax (8/20μs) (kA)	Nominal Discharge Current, In (8/20μs) (kA)	Nominal Voltage (VAC)	Max. Continuous Operating Voltage, MCOV (VAC)	Voltage Protection Rating, VPR (kV)	SCCR Rating (kArms)
Type 1CA	Type 2CA							
SPD150-S	SPD150C-S	1	75	20	120	150	0.7	200
SPD180-S	SPD180C-S	1	75	20	127	180	1.0	200
SPD275A-S	SPD275AC-S	1	75	20	230	275	1.0	200
SPD320-S	SPD320C-S	1	75	20	277	320	1.2	200

Single pole

- Dimension drawing



- Basic circuit diagram



L-N/PE(1P)

DIN-rail SPDs | DC PV | 50kA | UL SPV

ProSurge®
Maximum Safety in Surge Protection

Prosurge SPV series is a Type 1CA DC PV SPD according to UL1449 5th & CSA C22.2, designed for Photovoltaic system DC-side and EV DC charge pile protection against the damage from surges caused by lightning and other electrical sources.

Rating:

- **Max. permitted DC voltage (Vpvdc): 85V~1500Vdc**
- **Max. discharge current (8/20us): 50kA**
- **Short circuit current rating (SCCR): 100kA - tested without external CB or fuse**

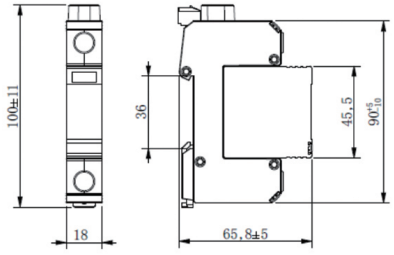
Technical Features:

- UL recognized Type 1CA PV/DC SPD per ANSI/UL1449 5th and CSA C22.2 for EV (electric vehicle) charger, PV/ Photovoltaic and other DC power system. (UL File No. E319871)
- Pluggable design with window fault indication
- Remote alarm signal optional
- Meet worldwide standards of UL1449 5th, IEC/EN 61643-31
- Global patented thermal disconnector design with arc extinguishing device, fail-safe & self-protected, quick thermal response and perfect circuit cutoff function. No additional over-current protection devices required

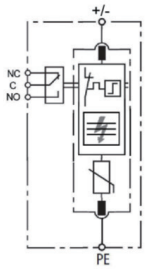
Single mode or I Configuration protection

Part No.		Pole	Nominal Voltage (Vdc)	Max. Permitted DC Voltage, Vpvdc (V)	Nominal Discharge Current, In (8/20μs) (kA)	Max. Discharge Current, Imax (8/20μs) (kA)	Voltage Protection Rating, VPR (kV)	SCCR Rating (kA)
Type 1ca	Type 2ca							
SPV48-V-S	SPV48-V-S/C	1	48	85	20	50	0.4	100
SPV500-V-S	SPV500-V-S/C	1	500	560	20	50	1.5	100
SPV600-V-S	SPV600-V-S/C	1	600	670	20	50	1.5	100

- Dimension drawing



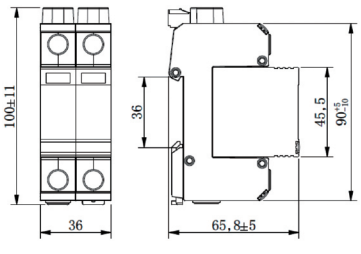
- Basic circuit diagram



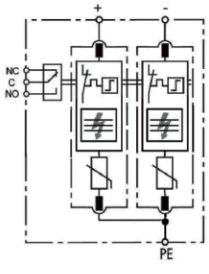
V Configuration protection

Part No.		Pole	Nominal Voltage (Vdc)	Max. Permitted DC Voltage, Vpvdc (V)	Nominal Discharge Current, In (8/20μs) (kA)	Max. Discharge Current, Imax (8/20μs) (kA)	Voltage Protection Rating, VPR (kV)	SCCR Rating (kA)
Type 1ca	Type 2ca							
SPV48-V-C-S	SPV48-V-C-S/C	2	48	85	20	50	0.4	100
SPV500-V-C-S	SPV500-V-C-S/C	2	500	560	20	50	1.5	100
SPV600-V-C-S	SPV600-V-C-S/C	2	600	670	20	50	1.5	100

- Dimension drawing



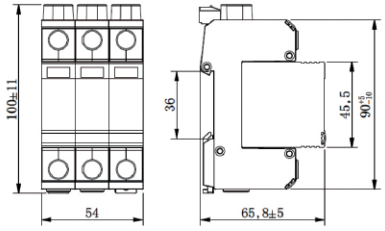
- Basic circuit diagram



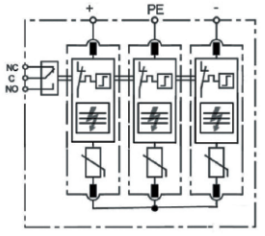
Y Configuration protection

Part No.		Pole	Nominal Voltage (Vdc)	Max. Permitted DC Voltage, Vpvdc (V)	Nominal Discharge Current, In (8/20μs) (kA)	Max. Discharge Current, Imax (8/20μs) (kA)	Voltage Protection Rating, VPR (kV)	SCCR Rating (kA)
Type 1CA	Type 2CA							
SPV600-V-CD-S	SPV600-V-CD-S/C	3	600	700	20	50	1.8	100
SPV800-V-CD-S	SPV800-V-CD-S/C	3	800	920	20	50	2.5	100
SPV1000-V-CD-S	SPV1000-V-CD-S/C	3	1000	1120	20	50	2.5	100
SPV1200-V-CD-S	SPV1200-V-CD-S/C	3	1200	1340	20	50	3.0	100
SPV1500-V-CD-S	SPV1500-V-CD-S/C	3	1500	1500	20	50	3.0	100

- Dimension drawing



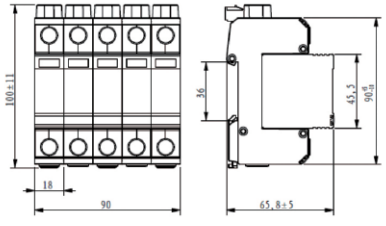
- Basic circuit diagram



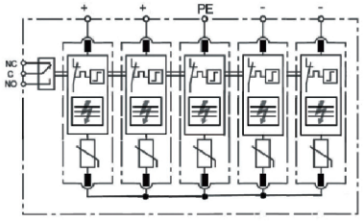
2Y Configuration protection

Part No.		Pole	Nominal Voltage (Vdc)	Max. Permitted DC Voltage, Vpvdc (V)	Nominal Discharge Current, In (8/20μs) (kA)	Max. Discharge Current, Imax (8/20μs) (kA)	Voltage Protection Rating, VPR (kV)	SCCR Rating (kA)
Type 1CA	Type 2CA							
SPV600-V-CD2-S	SPV600-V-CD2-S/C	3	600	700	20	50	1.8	100
SPV800-V-CD2-S	SPV800-V-CD2-S/C	3	800	920	20	50	2.5	100
SPV1000-V-CD2-S	SPV1000-V-CD2-S/C	3	1000	1120	20	50	2.5	100
SPV1200-V-CD2-S	SPV1200-V-CD2-S/C	3	1200	1340	20	50	3.0	100
SPV1500-V-CD2-S	SPV1500-V-CD2-S/C	3	1500	1500	20	50	3.0	100

- Dimension drawing



- Basic circuit diagram



DC PV surge protection modules

Prosurge's SPM series are surge protection modules which are heavy MOV based devices and are constructed with Prosurge thermal protection and arc extinguishing technology, can be easily integrated in or mounted on PCBs. They are the best choice for global customers to develop PV/DC power electronics to minimize the potential impact of lightning events.

Rating:

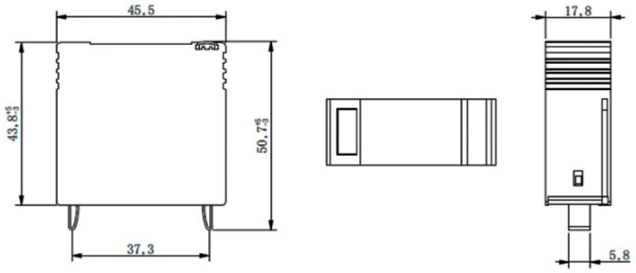
- **Max. permitted DC voltage (Vpvdc): 85V~825Vdc**
- **Max. discharge current (8/20us): 50kA**
- **Short circuit current rating (SCCR): 100kA - tested without external CB or fuse**

Technical Features:

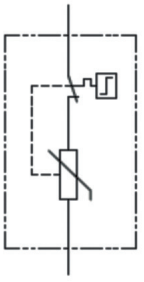
- UL recognized Type 1CA DC SPD per ANSI/UL1449 5th and CSA C22.2 for EV (electric vehicle) charger, PV/ Photovoltaic and other DC power system. (UL File No. E319871)
- Completely meet IEC/EN 61643-11/31 & EN50539-11
- Quick thermal response and perfect circuit cutoff function due to special thermal disconnector design with arc extinguishing device (Patent pending)
- Wide operating temperature range and high reliability
- High surge current capacity and low leakage current
- Provide a number of ways to use on PCB, such as permanent soldering or pluggable
- Floating remote signaling contact for fault indication while additional uses of PVD_Base

Part No.		Nominal Voltage (Vdc)	Max. Permitted DC Voltage, Vpvdc (V)	Nominal Discharge Current, In (8/20μs) (kA)	Max. Discharge Current, Imax (8/20μs) (kA)	Voltage Protection Rating, VPR (kV)	SCCR Rating (kA)
Type 1CA	Type 2CA						
SP85D	SP85D/C	48	85	20	50	0.4	100
SP350D	SP350D/C	300	350	20	50	0.9	100
SP460D	SP460D/C	400	460	20	50	1.2	100
SP560D	SP560D/C	500	560	20	50	1.5	100
SP670D	SP670D/C	600	670	20	50	1.5	100
SP825D	SP825D/C	750	825	20	50	1.8	100

- Dimension drawing

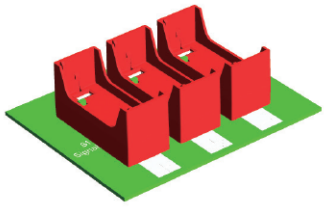


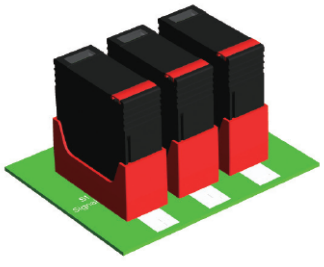
- Basic circuit diagram



PCB mounting method and illustration

PVD_Base is designed for pluggable SPM module to be mounted on the PCB and can be replaced easily, and with floating remote signaling contact for fault indication.





DIN-rail SPDs | DC Power | Compact Design MDS D

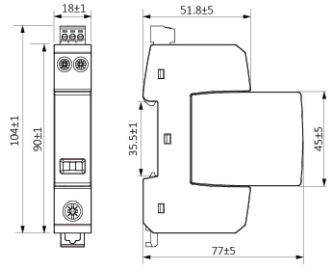
Prosurge MDS...D series is designed for low-voltage DC power supply system protection against the damaging from surges and spikes caused by lightning and other electrical sources, suitable for use in category location B,C (ANSI/IEEE C62.41)

Technical Features

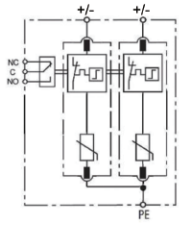
- Type 4CA SPD per UL 1449 5th, Class III SPD per IEC/EN 61643-11/31/41
- MCOV (Vdc): 24V~150Vdc
- Large surge capacity up to 40kA 8/20μs
- Thermally protected MOV technology
- DIN-rail mount configuration and compact design, 18mm width (1 module, DIN 43880)
- Pluggable design with window fault indication
- Remote alarm signal optional

Part No.	Nominal Voltage (Vdc)	MCOV (Vdc)	Nominal Discharge Current, In (8/20μs) (kA)	Max. Discharge Current, Imax (8/20μs) (kA)	MLV (V)
MDS12D(-S)	12	24	20	40	400
MDS24D(-S)	24	38	20	40	400
MDS36D(-S)	36	56	20	40	400
MDS48D(-S)	48	65	20	40	500
MDS60D(-S)	60	85	20	40	500
MDS75D(-S)	75	100	20	40	600
MDS110D(-S)	110	150	20	40	700
MDS130D(-S)	130	170	20	40	700

- Dimension drawing



- Basic circuit diagram



DIN-rail SPDs | AC/DC Power | Compact Design MDS AD

ProSurge®
Maximum Safety in Surge Protection

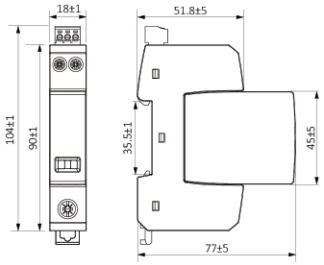
Prosurge MDS...AD series is designed for low-voltage AC/DC power supply system protection against the damaging from surges and spikes caused by lightning and other electrical sources, suitable for use in category location B,C (ANSI/IEEE C62.41)

Technical Features

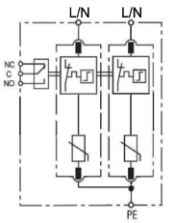
- Type 4CA SPD design per ANSI/UL 1449 5th, Class III SPD per IEC/EN 61643-11
- MCOV (Vac): 175V~440Vac
- Large surge capacity up to 40kA 8/20μs
- Thermally protected MOV technology
- DIN-rail mount configuration and compact design, 18mm width (1 module, DIN 43880)
- Pluggable design with window fault indication
- Remote alarm signal optional

Part No.	Nominal Voltage		MCOV		Nominal Discharge Current, In (8/20μs) (kA)	Max. Discharge Current, Imax (8/20μs) (kA)	MLV (V)
	Vac(V)	Vdc(V)	Vac(V)	Vdc(V)			
MDS120AD(-S)	120	200	175	225	20	40	800
MDS230AD(-S)	230	300	275	350	20	40	1000
MDS277AD(-S)	277	400	350	460	20	40	1200
MDS347AD(-S)	347	500	420	560	20	40	1500
MDS400AD(-S)	400	500	440	585	20	40	1500

- Dimension drawing

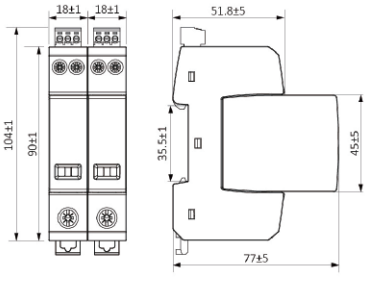


- Basic circuit diagram

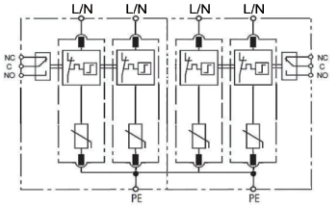


Part No.	Nominal Voltage		MCOV		Nominal Discharge Current, In (8/20μs) (kA)	Max. Discharge Current, Imax (8/20μs) (kA)	MLV (V)
	Vac(V)	Vdc(V)	Vac(V)	Vdc(V)			
MDST120AD(-S)	120	200	175	225	20	40	800
MDST230AD(-S)	230	300	275	350	20	40	1000
MDST277AD(-S)	277	400	350	460	20	40	1200
MDST347AD(-S)	347	500	420	560	20	40	1500
MDST400AD(-S)	400	500	440	585	20	40	1500

- Dimension drawing



- Basic circuit diagram



Surge Protection for LED Lighting WS05

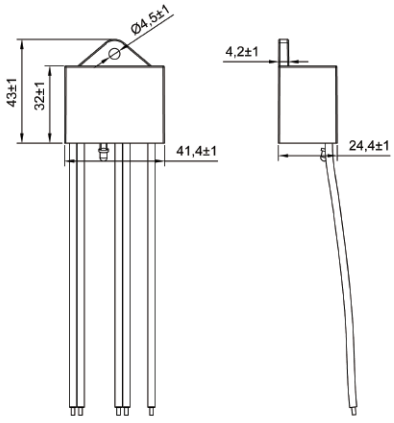
PROSUGE WS05 series Surge Protective Devices are for surge protection of single/ split phase AC power lines. It can effectively suppress the transientover voltage on power line caused by lightning strikes and other electrical source. They are recommended for LED light protection, machine and equipment protection. The products are generally installed in the distribution or power unit of the equipment to be protected.

Technical Features

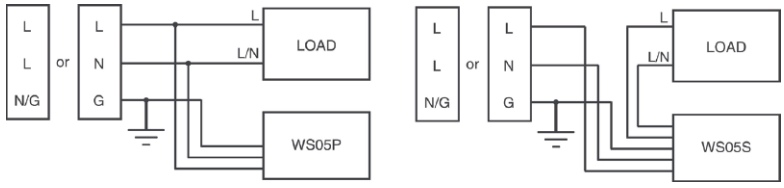
- Type 4CA design per ANSI/UL 1449 5th Edition, Class III compliant with IEC/EN 61643-11
- Suitable for single/ split phase AC power application
- Patented fail-safe technology to prevent a hazard to the facility due to end-of-life of MOV component or extreme failure conditions which may caused by abnormal line voltage fluctuation, etc.
- Nominal discharge current: 5kA
- Max. discharge current up to 15kA 8/20 us and open circuit voltage Uoc to 20kV
- Installed in series (model: WS..S) or parallel(model: WS...P) to power supply
- LED fault indication
- IP66 waterproof enclosure to resist dirt, dust and water

Type	WS05S, WS05P
In Accordance With	IEC/EN 61643-11; UL1449 5th
Category UL/IEC/EN	Type 4CA /III/T3
Connection Type	P-Parallel connection; S-Series connection
Nominal Current IL	10A (for series connection)
Nominal Discharge Current In	5kA
Max. Discharge Current Imax	15kA
Open Circuit Voltage Uoc	20kV
Residual current Ipe	<0.1mA
Backup Fuse(Only required if not already provided in mains)	25A gL/gG
Failure Indication/Stauts	LED ON=Normal; LED OFF=Failure or power off
Thermal Disconnector	thermal fuse
Working Enviroment	- 40°C ~ +85°C; ≤95% RH
Connection Wire	18AWG(L=Black; N=White; PE=Yellow/Green) ,150mm
Mounting	fixed
Enclosure Material	thermoplastic; extinguishing degree UL94 V-0
Degree Of Protection	IP66 (Waterproof)
Dimension	32x41x24mm
Altitude	≤ 4000m
Certification	CE

- Dimension drawing



- Examples of installation



Model No.	System Voltage (50/60Hz)	In (kA)	Installation	Protected Mode				MLV (V)				MCOV (Vac)
				L-N	L-G	N-G	L-L	L-N	L-G	N-G	L-L	
WS05S-120SPN-2P-F	120/240V Split-phase	5	in series	✓	×	×	✓	600	-	-	1000	150/300
WS05S-120SPG-2P-F		5	in series	×	✓	×	✓	-	600	-	1000	150/300
WS05S-240SPN-2P-F	240/480V Split-phase	5	in series	✓	×	×	✓	900	-	-	1800	320/640
WS05S-240SPG-2P-F		5	in series	×	✓	×	✓	-	900	-	1800	320/640
WS05S-120S-2P-F	120V Single-phase	5	in series	×	✓	✓	×	-	600	600	-	150
WS05S-240S-2P-F	240V Single-phase	5	in series	×	✓	✓	×	-	900	900	-	320
WS05S-277S-2P-F	277V Single-phase	5	in series	×	✓	✓	×	-	1000	1000	-	320
WS05P-120SPN-2P-F	120/240V Split-phase	5	in parallel	✓	×	×	✓	600	-	-	1000	150/300
WS05P-120SPG-2P-F		5	in parallel	×	✓	×	✓	-	600	-	1000	150/300
WS05P-240SPN-2P-F	240/480V Split-phase	5	in parallel	✓	×	×	✓	900	-	-	1800	320/640
WS05P-240SPG-2P-F		5	in parallel	×	✓	×	✓	-	900	-	1800	320/640
WS05P-120S-2P-F	120V Single-phase	5	in parallel	×	✓	✓	×	-	600	600	-	150
WS05P-240S-2P-F	240V Single-phase	5	in parallel	×	✓	✓	×	-	900	900	-	320
WS05P-277S-2P-F	277V Single-phase	5	in parallel	×	✓	✓	×	-	1000	1000	-	320

ProSurge®
Maximum Safety in Surge Protection

Surge Protection for Information System BNC

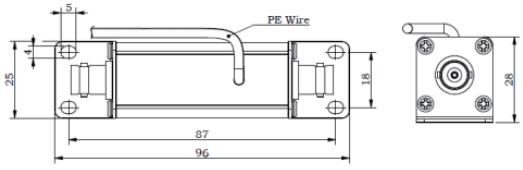
Prosurge D-05/BNC surge arrester is designed for coaxial systems such as camera and video system protection against the damage from surges and spikes caused by lightning and other electrical sources, suitable for use in category location B, C (ANSI/IEEE C62.41) or directly at the upstream near the protected devices.

Technical Features

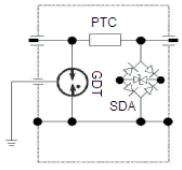
- Data network protector in according with UL 497b, IEC 61643-21
- High discharge capacity, total nominal discharge current up to 20kA 8/20μs
- Two-stage protection circuit
- Limit the transient with gas discharge tubes and transzorb diodes
- Comprising a PTC for overcurrent fault and short-circuit fault protection
- BNC connector for protection of video signal, cameras or TV system
- Low insertion loss

Part No.		D-05/BNC-FF50-B
Nominal Voltage (Vdc)	Un	5V
Max. Continuous Operating Voltage (Vdc/Vac)	Uc	6/5V
C2 Nominal Discharge Current (8/20μs)	In	10kA
C2 Total Nominal Discharge Current (8/20μs)	In	20kA
Voltage Protection Level	L-SG@C2 (8/20μs) Up	≤30V
	L-SG@C3 (1KV/μs) Up	≤24V
Frequency Range	f	0~20MHz
Nominal Current	IL	0.35A
Technology		Two-stage protection circuit, GDT/SAD & PTC technology
Insertion Loss At 20MHz		< 0.2dB
VSWR		< 1.2dB
Continuous Power	P	0.77 Watts
Series Impedance Per Line	R	0.6 Ohm (PTC)
Input / Output Connection Type		BNC, 50 Ohm

- Dimension drawing



- Basic circuit diagram



Multiport Coaxial Protector

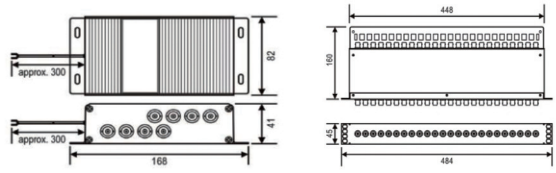
8-ports protector DSB05/BNC-8P

16-ports protector DSB05/BNC-16P 19" bay design

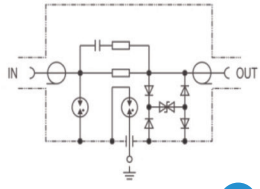
24-ports protector DSB05/BNC-24P 19" bay design

Part No.		DSB05/BNC-8P	DSB05/BNC-16P	DSB05/BNC-24P
Number of Connection Ports		8	16	24
Nominal Voltage (Vdc)	Un	5V		
Max. Continuous Operating Voltage (Vdc)	Uc	8V		
Open Circuit Voltage (1.2/50μs)	Uoc	5kV (L-SG), 10kV (SG-PG)		
Lightning Impulse Current (10/350μs)	Iimp	0.5kA		
Nominal Discharge Current (8/20μs)	In	2.5kA (L-SG), 5kA (SG-PG)		
Max. Discharge Current (8/20μs)	Imax	5kA (L-SG), 10kA(SG-PG)		
Voltage Protection Level at In	Up	≤25V (L-SG)		
Voltage Protection Level at 1kV/μs	Up	≤15V (L-SG), ≤600V (L/SG-PG)		
Bandwidth	fG	300MHz		

- Dimension drawing



- Basic circuit diagram



Surge Protection for Information System RJ45

ProSurge®
Maximum Safety in Surge Protection

Prosurge D-05/RJ45 Protector is designed for Gigabit Ethernet terminals against surges. It is suitable for use in category location B, C (ANSI/IEEE C62.41) or directly at the upstream near the protected devices.

Technical Features

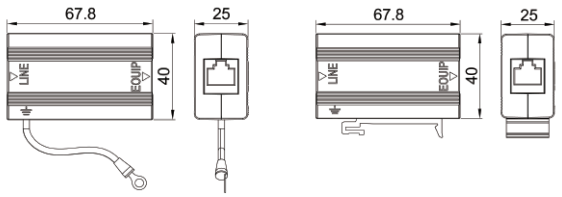
- UL listed Ethernet surge protector per UL 497b standard (UL file: QVGQ.E504171), complied with IEC/EN 61643-21 (D1,C1,C2,C3)
- Suitable for CAT5/CAT5E/CAT6/CAT6A cabling system up to 250MHz
- Applied in offices and industries like Gigabit Ethernet, ATM or ISDN system, and VoIP system (e.g. switch, router, hub, modem and so on)
- High discharge capacity, total nominal discharge current 10kA 8/20μs and Lightning current up to 1.0kA 10/350μs
- Compatible with EN 50173 , ISO/IEC 11801

D-05P/RJ45

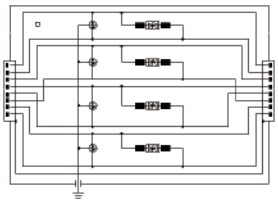
D-05P/RJ45-B

Part No.		D-05P/RJ45	D-05P/RJ45-B
Nominal Voltage (Vdc)	Un	5V	
Max. Continuous Operating Voltage (Vdc)	Uc	6V	
C2 Nominal Discharge Current (8/20μs)	In	2.5kA	
C2 Total Nominal Discharge Current (8/20μs)		10kA	
Voltage Protection Level	@C2 (8/20μs) Up	55V(L-L); 550V(L-G)	
	@C3 (1KV/μs) Up	25V(L-L); 500V(L-G)	
Lightning Impulse Current (10/350μs)	Iimp	1.0kA	
Nominal Current	IL	1A	
Transmission Speed		1000Mbps	
Insertion Loss At 250MHz		≤ 3.0dB	
Transmission Standards		100BaseT / 1000BaseT / 1000BaseTX	
Earthing		Grounding wire	DIN Rail

- Dimension drawing



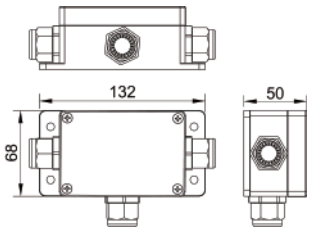
- Basic circuit diagram



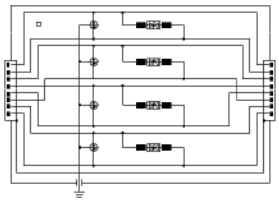
IP66 waterproof plastic enclosure for outdoor applications

Part No.		D-05/RJ45P
Nominal Voltage (Vdc)	Un	5V
Max. Continuous Operating Voltage (Vdc)	Uc	6V
C2 Nominal Discharge Current (8/20μs)	In	2.5kA
C2 Total Nominal Discharge Current (8/20μs)		10kA
Voltage Protection Level	@C2 (8/20μs) Up	55V(L-L); 550V(L-G)
	@C3 (1KV/μs) Up	25V(L-L); 500V(L-G)
Lightning Impulse Current (10/350μs)	Iimp	1.0kA
Nominal Current	IL	1A
Transmission Speed		1000Mbps
Insertion Loss At 250MHz		≤ 3.0dB
Transmission Standards		100BaseT / 1000BaseT / 1000BaseTX
Earthing		Grounding wire

- Dimension drawing



- Basic circuit diagram



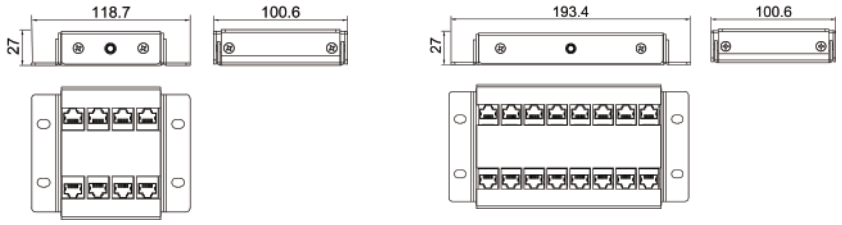
D-05/RJ45-4P

D-05/RJ45-8P

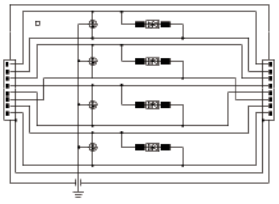
4-port / 8-port protector

Part No.		D-05/RJ45-4P	D-05/RJ45-8P
Number Of Connection Ports		4	8
Nominal Voltage (Vdc)	Un	5V	
Max. Continuous Operating Voltage (Vdc)	Uc	6V	
C2 Nominal Discharge Current (8/20μs)	In	2.5kA	
C2 Total Nominal Discharge Current (8/20μs)		10kA	
Voltage Protection Level	@C2 (8/20μs) Up	55V(L-L); 550V(L-G)	
	@C3 (1KV/μs) Up	25V(L-L); 500V(L-G)	
Lightning Impulse Current (10/350μs)	Iimp	1.0kA	
Nominal Current	IL	1A	
Transmission Speed		1000Mbps	
Insertion Loss At 250MHz		≤ 3.0dB	
Transmission Standards		100BaseT / 1000BaseT / 1000BaseTX	
Earthing		Screw rod	

- Dimension drawing



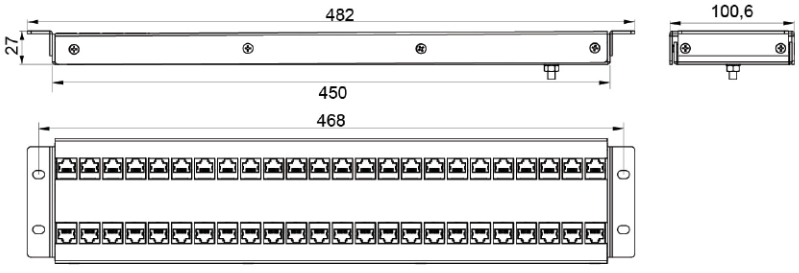
- Basic circuit diagram



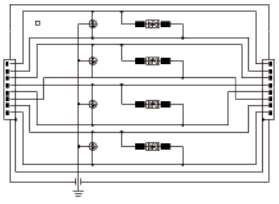
24-port protector / 19'' bay design

Part No.		D-05/RJ45-24P
Number Of Connection Ports		24
Nominal Voltage (Vdc)	Un	5V
Max. Continuous Operating Voltage (Vdc)	Uc	6V
C2 Nominal Discharge Current (8/20μs)	In	2.5kA
C2 Total Nominal Discharge Current (8/20μs)		10kA
Voltage Protection Level	@C2 (8/20μs) Up	55V(L-L); 550V(L-G)
	@C3 (1KV/μs) Up	25V(L-L); 500V(L-G)
Lightning Impulse Current (10/350μs)	Iimp	1.0kA
Nominal Current	IL	1A
Transmission Speed		1000Mbps
Insertion Loss At 250MHz		≤ 3.0dB
Transmission Standards		100BaseT / 1000BaseT / 1000BaseTX
Earthing		Screw rod

- Dimension drawing



- Basic circuit diagram



Surge Protection for Information System RJ45

ProSurge®
Maximum Safety in Surge Protection

Prosurge D-48/RJ45-POE CAT6-PoE Protector is designed for protecting Gigabit Ethernet & Power-over Ethernet (PoE) terminals such as Internet camera, IP Telephone sets, and wireless access point, and are suitable for use in category location B, C (ANSI/IEEE C62.41) or directly at the upstream near the protected devices.

Technical Features

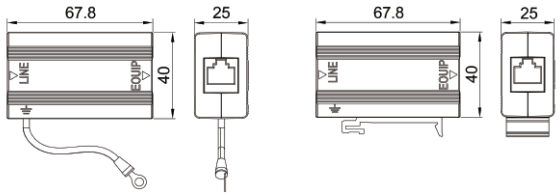
- UL listed PoE surge protector per UL 497b standard (UL file: QVGQ.E504171), complied with IEC/EN 61643-21 (D1,C1,C2,C3)
- Suitable for CAT5/CAT5E/CAT6/CAT6A cabling system up to 250MHz
- Compatible with PoE (Type 1, IEEE 802.3af), PoE+ (Type 2, IEEE 802.3at) and PoE++ (Type 3/4 with 4PPoE, IEEE 802.3bt)
- High discharge capacity, total nominal discharge current 10kA 8/20μs and Lightning current up to 1.0kA 10/350μs
- Compatible with EN 50173 , ISO/IEC 11801

D-48P/RJ45-POE

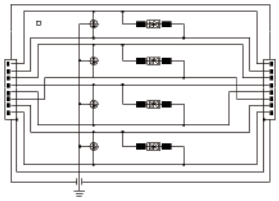
D-48P/RJ45-POEB

Part No.		D-48P/RJ45-POE	D-48P/RJ45-POEB
Nominal Voltage (Vdc)	Un	48V	
Max. Continuous Operating Voltage (Vdc)	Uc	60V	
C2 Nominal Discharge Current (8/20μs)	In	2.5kA	
C2 Total Nominal Discharge Current (8/20μs)		10kA	
Voltage Protection Level	@C2 (8/20μs) Up	150V(L-L); 550V(L-G)	
	@C3 (1KV/μs) Up	110V(L-L); 500V(L-G)	
Lightning Impulse Current (10/350μs)	Iimp	1.0kA	
Nominal Current	IL	1A	
Transmission Speed		1000Mbps	
Insertion Loss At 250MHz		≤ 3.0dB	
Transmission Standards		100BaseT / 1000BaseT / 1000BaseTX / PoE+ / PoE++	
Earthing		Grounding wire	DIN Rail

- Dimension drawing



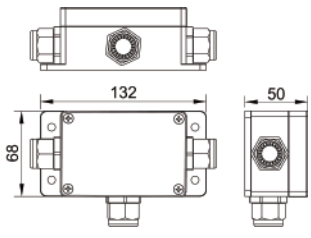
- Basic circuit diagram



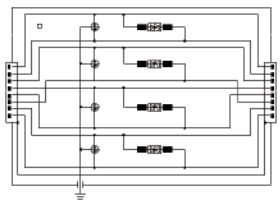
IP66 waterproof plastic enclosure for outdoor applications

Part No.		D-48/RJ45P-POE
Nominal Voltage (Vdc)	Un	48V
Max. Continuous Operating Voltage (Vdc)	Uc	60V
C2 Nominal Discharge Current (8/20μs)	In	2.5kA
C2 Total Nominal Discharge Current (8/20μs)		10kA
Voltage Protection Level	@C2 (8/20μs) Up	150V(L-L); 550V(L-G)
	@C3 (1KV/μs) Up	110V(L-L); 500V(L-G)
Lightning Impulse Current (10/350μs)	Iimp	1.0kA
Nominal Current	IL	1A
Transmission Speed		1000Mbps
Insertion Loss At 250MHz		≤ 3.0dB
Transmission Standards		100BaseT / 1000BaseT / 1000BaseTX / PoE+ / PoE++
Earthing		Grounding wire

- Dimension drawing



- Basic circuit diagram



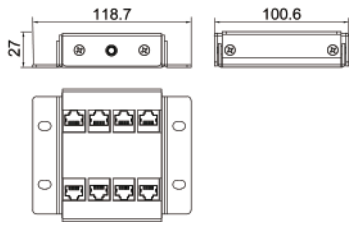
D-48/RJ45-4P-POE

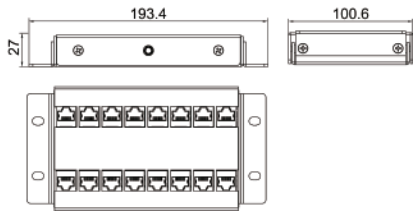
D-48/RJ45-8P-POE

4-port / 8-port protector

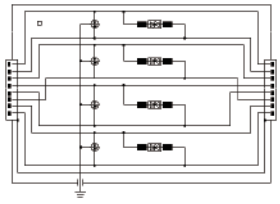
Part No.		D-48/RJ45-4P-POE	D-48/RJ45-8P-POE
Number Of Connection Ports		4	8
Nominal Voltage (Vdc)	Un	48V	
Max. Continuous Operating Voltage (Vdc)	Uc	60V	
C2 Nominal Discharge Current (8/20μs)	In	2.5kA	
C2 Total Nominal Discharge Current (8/20μs)		10kA	
Voltage Protection Level	@C2 (8/20μs) Up	150V(L-L); 550V(L-G)	
	@C3 (1KV/μs) Up	110V(L-L); 500V(L-G)	
Lightning Impulse Current (10/350μs)	Iimp	1.0kA	
Nominal Current	IL	1A	
Transmission Speed		1000Mbps	
Insertion Loss At 250MHz		≤ 3.0dB	
Transmission Standards		100BaseT / 1000BaseT / 1000BaseTX / PoE+ / PoE++	
Earthing		Screw rod	

- Dimension drawing





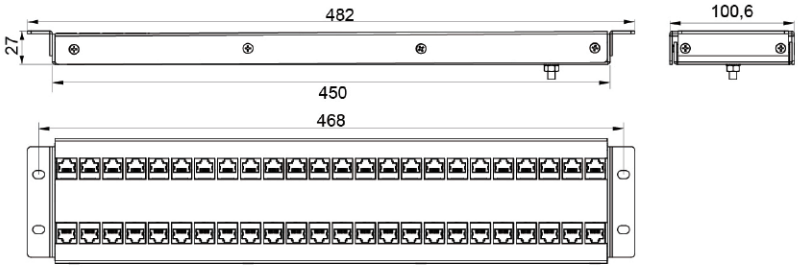
- Basic circuit diagram



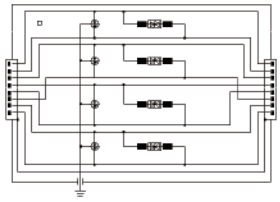
24-port protector / 19'' bay design

Part No.		D-048/RJ45-24P-POE
Number Of Connection Ports		24
Nominal Voltage (Vdc)	Un	48V
Max. Continuous Operating Voltage (Vdc)	Uc	60V
C2 Nominal Discharge Current (8/20μs)	In	2.5kA
C2 Total Nominal Discharge Current (8/20μs)		10kA
Voltage Protection Level	@C2 (8/20μs) Up	150V(L-L); 550V(L-G)
	@C3 (1KV/μs) Up	110V(L-L); 500V(L-G)
Lightning Impulse Current (10/350μs)	Iimp	1.0kA
Nominal Current	IL	1A
Transmission Speed		1000Mbps
Insertion Loss At 250MHz		≤ 3.0dB
Transmission Standards		100BaseT / 1000BaseT / 1000BaseTX / PoE+ / PoE++
Earthing		Screw rod

- Dimension drawing



- Basic circuit diagram



Surge Protection for Information System DM

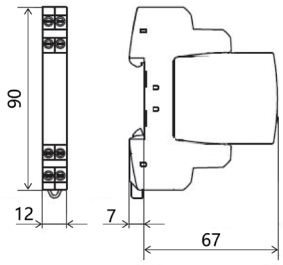
ProSurge®
Maximum Safety in Surge Protection

PROSURGE DM.. data network surge arrester are designed for universal 1 or 2-pair data lines against the damaging from surges and spikes caused by lightning and other electrical sources, suitable for use in category location B, C (ANSI/IEEE C62.41) or directly at the upstream near the protected devices.

Technical Features

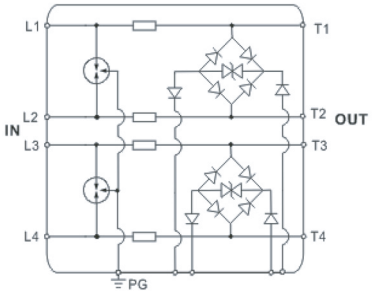
- Data network protector in according with UL497b, IEC/EN61643-21
- 12mm pluggable surge protector for DIN-Rail mounting
- Signal transmission is not interrupted when exchanging module
- Two-stage protection circuit. Limit the transients with gas discharge tubes and transzorb diodes
- Earthing is possible on DIN rail
- Different model are suitable to use for universal 4-20mA current loop, TTL, analog telephone line, measurement system and high-frequency bus and data transmission systems etc

- Dimension drawing

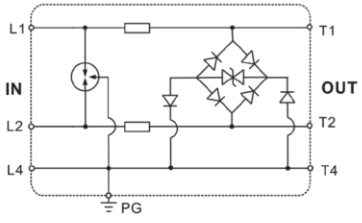


Model		DM-05-M2N1 DM-05-M4N1	DM-12-M2N1 DM-12-M4N1	DM-24-M2N1 DM-24-M4N1	DM-48-M2N1 DM-48-M4N1	DM-110-M2N1 -
Lines Protected		1-Pair / 2-Pair				1-Pair
Nominal Voltage (Vdc)	Un	5V	12V	24V	48V	110V
Max. Continuous Operating Voltage (Vdc/Vac)	Uc	6V/4.2V	15V/10.6V	33V/23.3V	54V/38.1V	170V/120V
C2 Nominal Discharge Current (8/20μs)	In	10kA				
Lightning Impulse Current (10/350μs)	Iimp	2.5kA				
Voltage Protection Level	@C2 (8/20μs) Up	30V(L-L); 30V(L-G)	45V(L-L); 45V(L-G)	55V(L-L); 55V(L-G)	100V(L-L); 100V(L-G)	300V(L-L); 300V(L-G)
	@C3 (1KV/μs) Up	24V(L-L); 24V(L-G)	38V(L-L); 38V(L-G)	48V(L-L); 48V(L-G)	75V(L-L); 75V(L-G)	250V(L-L); 250V(L-G)
Rated Load Current	IL	1A				
Cut-off Frequency	fG	100 MHz				
Series Impedance Per Line	R	0.68 Ω				

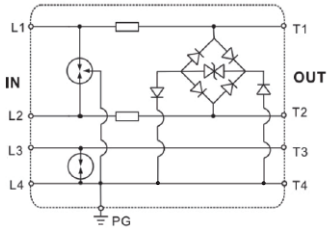
- Basic circuit diagram



For 2-pair data line
DM-…-M4N1



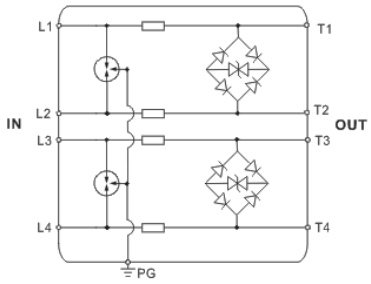
For 1-pair data line
DM-…-M2N1



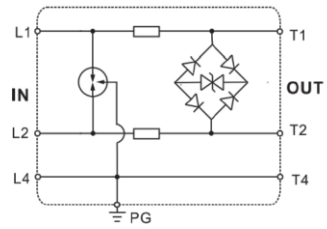
For 1-pair+shield data line
DM-…-M2N3

Model		DM-05-M2N2	DM-12-M2N2	DM-24-M2N2	DM-48-M2N2	DM-110-M2N2
		DM-05-M4N2	DM-12-M4N2	DM-24-M4N2	DM-48-M4N2	
Lines Protected		1-Pair / 2-Pair				1-Pair
Nominal Voltage (Vdc)	Un	5V	12V	24V	48V	110V
Max. Continuous Operating Voltage (Vdc/Vac)	Uc	6V/4.2V	15V/10.6V	33V/23.3V	54V/38.1V	170V/120V
C2 Nominal Discharge Current (8/20μs)	In	10kA				
C2 Total Nominal Discharge Current (8/20μs)		20kA				
Lightning Impulse Current (10/350μs)	Iimp	2.5kA				
Voltage Protection Level	@C2 (8/20μs) Up	30V(L-L); 500V(L-G)	45V(L-L); 500V(L-G)	55V(L-L); 500V(L-G)	100V(L-L); 500V(L-G)	300V(L-L); 500V(L-G)
	@C3 (1KV/μs) Up	24V(L-L); 600V(L-G)	38V(L-L); 600V(L-G)	48V(L-L); 600V(L-G)	75V(L-L); 600V(L-G)	250V(L-L); 600V(L-G)
Rated Load Current	IL	1A				
Cut-off Frequency	fG	100 MHz				
Series Impedance Per Line	R	0.68 Ω				

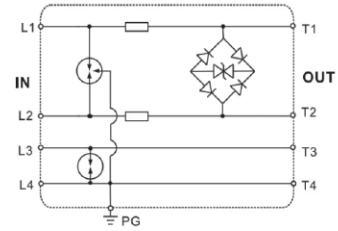
- Basic circuit diagram



For 2-pair data line
DM-…-M4N2



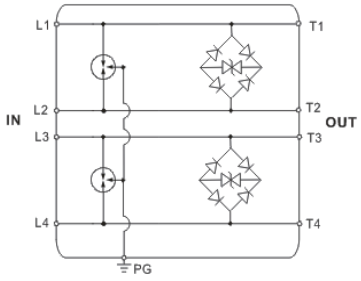
For 1-pair data line
DM-…-M2N2



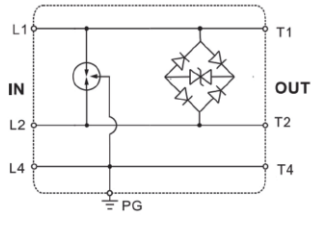
For 1-pair+shield data line
DM-…-M2N4

Model		DM-05-M2N6	DM-12-M2N6	DM-24-M2N6	DM-48-M2N6
		DM-05-M4N6	DM-12-M4N6	DM-24-M4N6	DM-48-M4N6
Lines Protected		1-Pair / 2-Pair			
Nominal Voltage (Vdc)	Un	5V	12V	24V	48V
Max. Continuous Operating Voltage (Vdc/Vac)	Uc	6V/4.2V	15V/10.6V	33V/23.3V	54V/38.1V
C2 Nominal Discharge Current (8/20μs)	In	10kA			
C2 Total Nominal Discharge Current (8/20μs)		20kA			
Lightning Impulse Current (10/350μs)	Iimp	2.5kA			
Voltage Protection Level	@C2 (8/20μs) Up	30V(L-L); 500V(L-G)	45V(L-L); 500V(L-G)	55V(L-L); 500V(L-G)	100V(L-L); 500V(L-G)
	@C3 (1KV/μs) Up	24V(L-L); 600V(L-G)	38V(L-L); 600V(L-G)	48V(L-L); 600V(L-G)	75V(L-L); 600V(L-G)
Rated Load Current	IL	2A			
Cut-off Frequency	fG	100 MHz			
Series Impedance Per Line	R	0 Ω			

- Basic circuit diagram



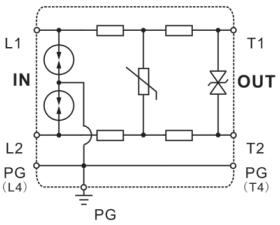
For 2-pair data line
DM-…-M4N6



For 1-pair data line
DM-…-M2N6

Model		DM-12-M2N5	DM-24-M2N5	DM-48-M2N5	DM-110-M2N5
Lines Protected		1-Pair			
Nominal Voltage (Vdc)	Un	12V	24V	48V	110V
Max. Continuous Operating Voltage (Vdc/Vac)	Uc	15V/10.6V	33V/23.3V	54V/38.1V	170V/120V
C2 Nominal Discharge Current (8/20μs)	In	10kA			
C2 Total Nominal Discharge Current (8/20μs)		20kA			
Lightning Impulse Current (10/350μs)	Iimp	2.5kA			
Voltage Protection Level	@C2 (8/20μs) Up	25V(L-L); 750V(L-G)	50V(L-L) 750V(L-G)	100V(L-L) 750V(L-G)	260V(L-L); 750V(L-G)
	@C3 (1KV/μs) Up	19V(L-L); 650V(L-G)	45V(L-L); 650V(L-G)	70V(L-L); 650V(L-G)	230V(L-L); 650V(L-G)
Rated Load Current	IL	1A			
Cut-off Frequency	fG	2 MHz			
Series Impedance per Line	R	1.36 Ω			

- Basic circuit diagram

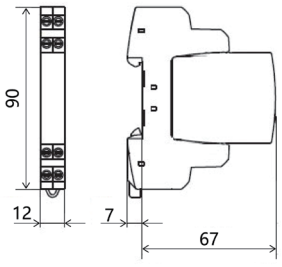


For 1-pair data line
DM-...-M2N5

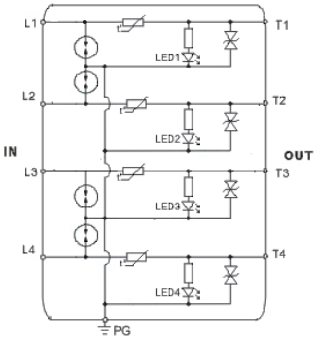
DM-..-M..N7 data network protector is with **failure indication and fault-current** protection inside to make protection module replacement timely and prevent failure or even destruction of signal or communication system.
These modules are suitable for digital I/O signal or analog power surge protection.

Model		DM-05-M2N7 / DM-05-M4N7	DM-12-M2N7 / DM-12-M4N7	DM-24-M2N7 / DM-24-M4N7	DM-48-M2N7 / DM-48-M4N7
Lines Protected		1-Pair / 2-Pair			
Nominal Voltage (Vdc)	Un	5V	12V	24V	48V
Max. Continuous Operating Voltage (Vdc/Vac)	Uc	6V/4.2V	15V/10.6V	33V/23.3V	54V/38.1V
C2 Nominal Discharge Current (8/20μs)	In	L-L:300A, L-G:10kA			
C2 Total Nominal Discharge Current (8/20μs)		L-L:500A, L-G:20kA			
Lightning Impulse Current (10/350μs)	Iimp	2.5kA			
Voltage Protection Level	@C2 (8/20μs) Up	30V(L-L); 500V(L-G)	45V(L-L) 500V(L-G)	55V(L-L) 500V(L-G)	100V(L-L); 500V(L-G)
	@C3 (1KV/μs) Up	24V(L-L); 600V(L-G)	38V(L-L); 600V(L-G)	48V(L-L); 600V(L-G)	75V(L-L); 600V(L-G)
Rated Load Current	IL	1A			
Cut-off Frequency	fG	2 MHz			
Series Impedance per Line	R	PTC			

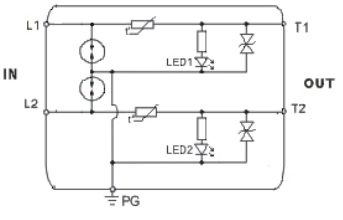
- Dimension drawing



- Basic circuit diagram



For 2-pair data line
DM-...-M4N7



For 1-pair data line
DM-...-M2N7

The PROSURGE LEC-MC and LEC-ME series lightning & surge event counter is a device automatically detects and counts the lightning strikes received by the lightning protection system. The counter is mounted directly onto the lightning down conductor (cable, rod or plate) or the PE line of the surge protection device, no modifications to existing wiring are required.

Mechanical Lightning Event Counter

LEC-MC

Features:

- Needs no maintenance and long service life
- High sensitive response with trigger current 1.5kA
- Can register very high lightning strike up to 100kA (10/350μs, 8/20μs)
- Mechanical strike counter with 6 digit display
- Fast installation directly on the round wire or flat strip of an existing down conductor, no need to remove the enclosure
- Does not require external power or batteries for operation, maintenance free operation
- Can not be manual reset to ensures accurate continued recording of lightning strokes
- IP67 enclosure with UV resistant & anti-aging plastic,water-proof, dust-proof, suitable for outdoor installation
- Complaince with standards IEC/EN 62561-6

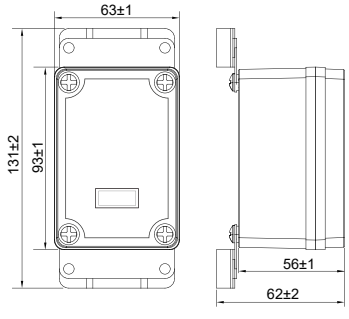
Digital Lightning Event Counter

LEC-ME

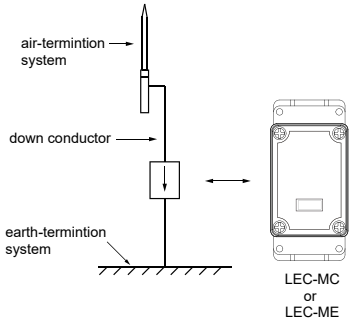
Features:

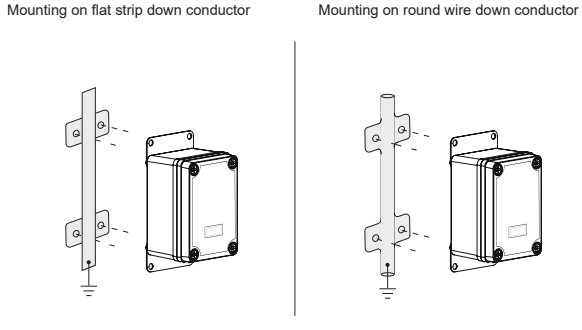
- Low maintenance and long service life
- High sensitive response with trigger current 150A
- Can register very high lightning strike up to 100kA (10/350μs, 8/20μs)
- Easy viewable LCD display
- Fast installation directly on the round wire or flat strip of an existing down conductor, no need to remove the enclosure
- CR2450 lithium coin battery for easy installation and replacement
- Can be reset through the internal reset button
- IP67 enclosure with UV resistant & anti-aging plastic,water-proof, dust-proof, suitable for outdoor installation
- Complaince with standards IEC/EN 62561-6

- Dimension drawing



- Examples of installation





Surge Monitoring & Measurement LEC & iSPM

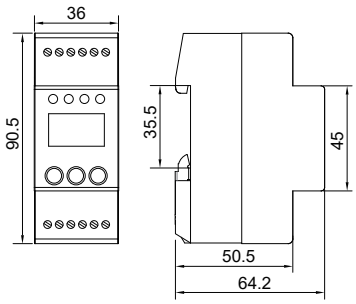
ProSurge®
Maximum Safety in Surge Protection

The PROSURGE Intelligent Surge & Power Monitor is a multi-function monitoring device for power system and LPS (lightning Protecting System), a core unit for Intelligent LPS or Surge Protective Devices (iSPDs), which is an innovative solution to make your LPS smart and intelligent.
It can be widely used in Telecom, Railway electrical system, Wind power plant, Photovoltaic power plant, Network communication system, Building electrical system and Automatic industrial lightning protection etc..
It has a leading technology and stable functions.Through local Man-Machine interface or connecting to remote monitoring center, users can check completed LPS information.

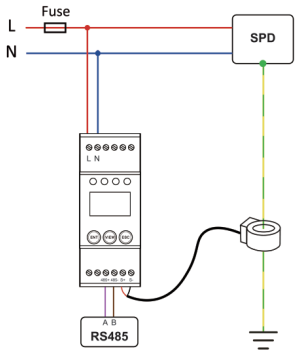
LEC-ATB

- ✓**Monitor and record 999's lightning and surge event (polarity, event time, total events quantity)**
- ✓**Buzzer alarm when the number of lightning and surge event reaches a settable value**
- OLED display, support history events information query
- The system date/time will be retained even during power interruptions
- RS-485 communication interface, users can browse history events information on the far-end PC

- Dimension drawing



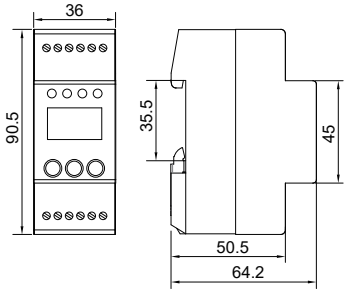
- Examples of installation



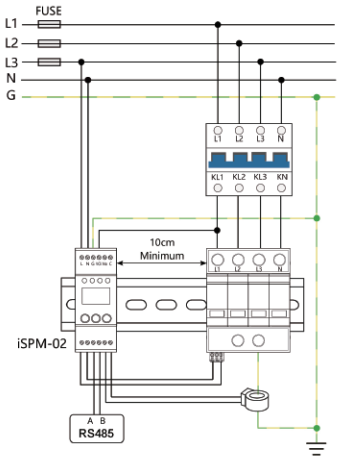
iSPM-02

- ✓**Monitor and record 999's lightning and surge event (polarity, event time, total events quantity)**
- ✓**SPD working status with alarm**
- ✓**SPD's aging with alarm when close to end-of-life**
- ✓**Backup over-current protection device working status (circuit breaker or fuse) with alarm**
- ✓**Voltage on SPD in real-time, overvoltage alarm**
- ✓**Grounding conditions of SPD with alarm**
- ✓**N line monitor (screen light off while lost, alarm by remote signal contact)**
- OLED display, support history events information query
- RS-485 communication interface, users can browse history events information on the far-end PC

- Dimension drawing



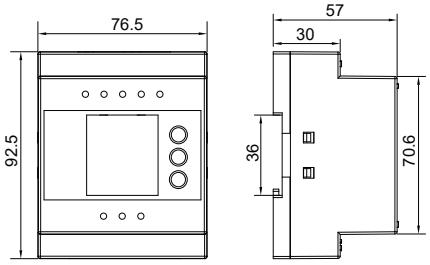
- Examples of installation



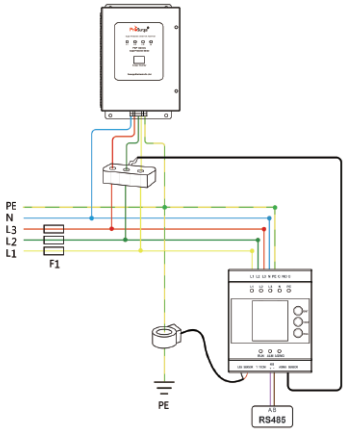
iSPM-03

- ✓Monitor and record 5000's lightning and surge event (surge amplitude, polarity, event time, total events quantity)
- ✓SPD working status with alarm
- ✓SPD's leakage current measurement
- ✓SPD's aging with alarm when close to end-of-life
- ✓Power line & Grounding monitor with alarm while lost
- ✓Backup over-current protection device working status (circuit breaker or fuse) with alarm
- ✓Voltage on SPD in real-time (all phase lines), overvoltage alarm
- TFT display, support history events information query
- RS-485 communication interface, users can browse history events information on the far-end PC
- Din rail design, easy to install and use

• Dimension drawing



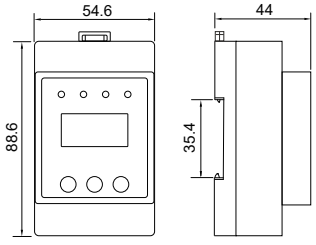
• Examples of installation



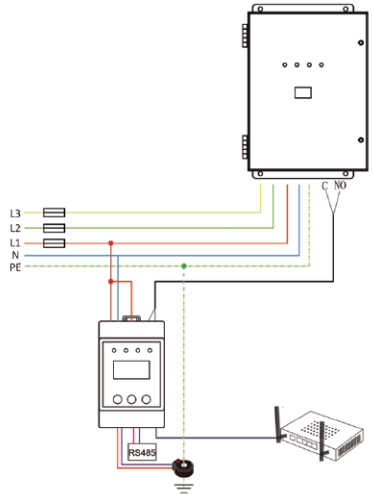
iSPM-04

- ✓Monitor and record 5000's lightning and surge event (polarity, event time, total events quantity) SPD working status with alarm
- ✓Backup over-current protection device working status (circuit breaker or fuse) with alarm
- ✓Voltage on SPD in real-time, overvoltage alarm
- ✓Grounding conditions of SPD with alarm
- ✓N line monitor (screen light off while lost, alarm by remote signal contact)
- ✓Buzzer alarm when the number of lightning and surge event reaches a settable value
- TFT display, support history events information query
- RS-485 communication interface, users can browse history events information on the far-end PC
- Web-based device, can be accessible via standard Web-browsers
- E-mail pushing,users never miss fault information anywhere and anytime
- Din rail design, easy to install and use

• Dimension drawing



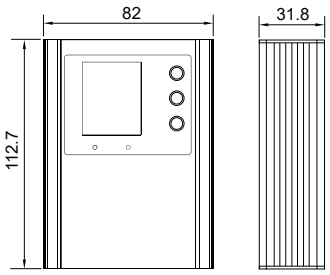
• Examples of installation



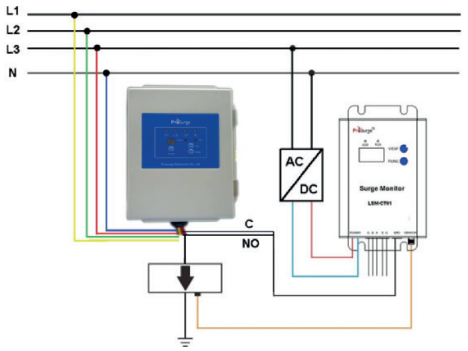
LSM-CT01

- ✓**Monitor and record 500's lightning and surge event (surge amplitude, polarity, event time, totalevents quantity)**
- ✓**SPD working status**
- USB interface for data export
- TFT display, support history events information query
- RS-485 communication interface, users can browse history events information on the far-end PC

- Dimension drawing



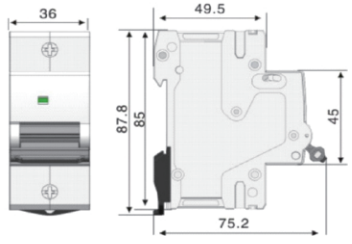
- Examples of installation



Surge Circuit Breaker SCB

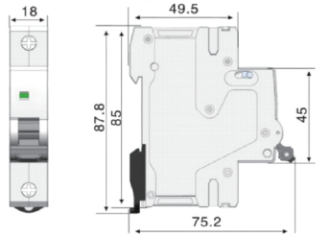
PROSURGE SCB provides enhance backup over-current protection for the SPD, which is located externally upstream of SPD, to avoid overheating and destruction of the SPD. Comparing to normal backup device,like as traditional circuit breaker/fuse, the PROSURGE SCB is fully coordinated with the surge protective device, which achieves a better balance between surge withstand performance (no tripping while expected surge occurs) and sharp reaction against short circuit and abnormal leakage current.
When the Prosurge SCB is used in SPD circuit, the short current will be limited to less than 3A in case the SPD is unable to interrupt the power frequency short circuit current, which usually cause by power frequency temporary overvoltage(TOV). And because of this, the limited short circuit current will not lead to overheating of SPD and even burning, that makes SPDs safe and more reliable in most applications.
The SCB is also featuring the lower residual voltage while surge happens and compact size.

• Used with class I/T1 SPD



Part No.	SCB B15/...-xP	SCB B25/...-xP	SCB B50/...-xP
Pole Number	1~4P		
Nominal Voltage Un	120,127, 240, 347, 400, 480, 600, 690 Vac		
Operating Frequency	50/60Hz		
Rated Max. Impulse Current (10/350us) Iimp	15kA	25kA	50kA
Nominal Discharge Current (8/20us) In	50kA	60kA	80kA
Rated Short Circuit Current Capacity Icn	100kArms (Un 120~347Vac)		
	50kArms (Un 400~690Vac)		
Rated Trip Current (Frequency Current)	3A		
Rated Trip Time	<0.1s		
IP Protection Level	IP20		
Wire Connection	Flexible:2.5~25mm² Stranded:2.5~35mm²		
Operating Temperature	~25°C~60°C		
Installation Width	36mm (single pole)		

• Used with class II/T2 SPD



Part No.	SCB C40/...-xP	SCB C65/...-xP	SCB C80/...-xP
Pole Number	1~4P		
Nominal Voltage Un	120,127, 240, 347, 400, 480, 600, 690 Vac		
Operating Frequency	50/60Hz		
Rated Max. Discharge Current (8/20us) Imax	40kA	65kA	80kA
Nominal Discharge Current (8/20us) In	20kA	35kA	40kA
Rated Short Circuit Current Capacity Icn	50kArms (Un 120~347Vac)		
	50kArms (Un 400~690Vac)		
Rated Trip Current (Frequency Current)	3A		
Rated Trip Time	<0.1s		
IP Protection Level	IP20		
Wire Connection	Flexible:2.5~25mm² Stranded:2.5~35mm²		
Operating Temperature	~25°C~60°C		
Installation Width	18mm (single pole)		

Intelligent Surge Protective Device iSPD

ProSurge®
Maximum Safety in Surge Protection

The PROSURGE iSPD is an intelligent and auto self-protected SPD for the single phase or multi phase power systems. It's an innovative solution for most commercial and industrial environments with critical operations, to make your surge protection smart and intelligent.

The iSPD is composed of three essential parts: surge protective device (SPD), intelligent surge & power monitor (iSPM) or Lightning/Surge event counter LEC-ATB and surge circuit breaker (SCB).

PROSURGE high performance SPDs (Type 1ca per UL1449 5th) of iSPD can protect sensitive equipment from the harmful transient voltage surges resulting from:

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

Prosurge's Type 1ca SPD

PROSURGE iSPM / LEC-ATB technology makes it easy to monitor the power & lightning protecting system. This device allows end user to monitor real time power quality for SPD and Lightning/Surge event and get alarm feedback on failure and fault from power system and device self:

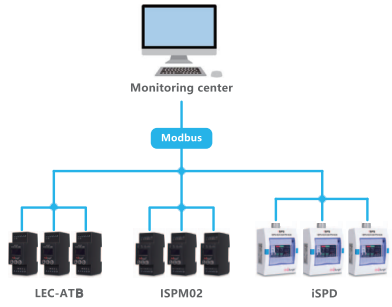
- SPD working status with alarm for SPD Failure, -Model: iSPM02
- SPD's aging with alarm while close to end-of-life of SPD, -Model: iSPM02
- Lightning and surge event (surge polarity, time-to-event, total events quantity) , - Model: iSPM02/LEC-ATB
- Buzzer alarm when the number of surge events reaches a settable number, - Model: LEC-ATB
- Backup over-current protection device working status (circuit breaker or fuse) with alarm for CB or fuse open, - Model: iSPM02
- Voltage on SPD in real-time, alarm for overvoltage event, - Model: iSPM02
- Grounding conditions of SPD with alarm for Grounding fault, - Model: iSPM02
- N line lost alarm (screen light off when lost, alarm by remote signal contact), - Model: iSPM02

Prosurge's intelligent surge & power monitor

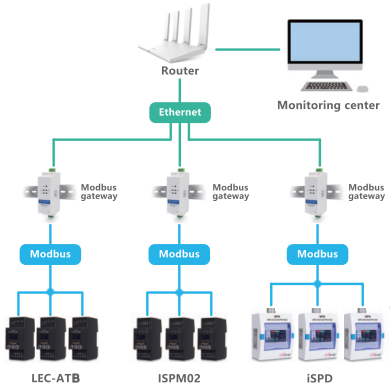
Prosurge 's SCB

PROSURGE SCB provides backup over-current protection for the SPD, which is fully coordinated with the SPD's surge capacity. Comparing to normal backup circuit breaker/fuse, the integrated PROSURGE SCB achieves a better balance between surge withstand performance (no tripping while expected surge occurs) and sharp reaction against short circuit and abnormal leakage current.

The iSPD can communicate with computer or smart terminal.
It can connect RS485 half-duplex MODBUS RTU protocol communication mode to the remote monitoring center.
Or through the "RS485/Ethernet converter", the MODBUS communication protocol can be converted to the Ethernet protocol, allowing the iSPD to connect to the Internet.
Once the iSPDs are connected to network, end user will be easy to get accurate and convenient information through computer software or smartphone Apps, and be able to act quickly to guarantees system uninterrupted operation based on optimal information.



Connect by 485 MODBUS



Connect by 485 MODBUS / Ethernet

Configuration & Ordering Information:

iSPD Intelligent SPD Model series	-02 Intelligent Surge & Power Monitor Model Series	/C SPD category per IEC/EN	320 Max. operating voltage (Uc)	-PN SPD config	-SCB Back up Surge Circuit Breaker
iSPD	-02: iSPM02 -AT : LEC-ATB ...	B: Class I or T1 C: Class II or T2	320: 75VAC~320VAC	2: Two poles (2+0) PN: Two poles (1+1) 3: Three poles (3+0) 4: Four poles (4+0) 3PN: Four poles (3+1)	With or without

Intelligent Surge & Power Monitor choice:

Function	-02	-ATB
Lightning and surge event logging (surge polarity, time-to-event, total events quantity)	√	√
Pre-set alarm number of surge event		√
SPD working status with alarm	√	
SPD's aging with alarm	√	
Backup over-current protection device working status with alarm	√	
Voltage on SPD in real-time with alarm	√	
Neutral line monitor with alarm	√	

iSPD-02/...-SCB

- SPD + iSPM02 + SCB
- Surge capacity 8/20μs: 50kA

Part No.			iSPD-02/C320-PN-SCB	iSPD-02/C320-3PN-SCB
General	Power System		2W+G, 1ph	WYE 4W+G, 3ph
	System Voltage	U_n	220/380V ~ 240/415V	
	Connection		Connection in parallel	
	Connecting Cable		Power line:10-35mm²; Remote signal:1.5mm²	
	Mounting		Wall mounting	
	Dimension		148x180x87 mm	200x180x87 mm
SPD	SPD Category		Type 1ca per UL1449 5th	
	Max. Continuous Operating Voltage AC	U_c	320VAC	
	Nominal Discharge Current (8/20 μs)	I_n	20kA	20kA
	Max. Discharge Current (8/20 μs)	I_{max}	50kA	50kA
	Voltage Protection Level	U_p	1.5kV	1.5kV
	Thermal Disconnector / Indication		Internal red - failure	
iSPM	Display Screen		OLED screen	
	Event Logging		999 events	
	Surge Event Counting		Counting Current ≥100A (adjustable)	
	Communication Interface		RS485	
	Indication		Buzzer / Indicator / Remote signal	
SCB	Trip Current	I_t	3±1A	
	Trip Time	T_t	≤40ms	

Intelligent Surge Protective Device iSPD

ProSurge®
Maximum Safety in Surge Protection

iSPD-AT/... SCB

- SPD + LEC-ATB + SCB
- Surge capacity 8/20μs: 50kA

Part No.			iSPD-AT/C320-PN-SCB	iSPD-AT/C320-3PN-SCB
General	Power System		2W+G, 1ph	WYE 4W+G, 3ph
	System Voltage	U_n	220/380V ~ 240/415V	
	Connection		Connection in parallel	
	Connecting Cable		Power line:10-35mm^2; Remote signal:1.5mm^2	
	Mounting		Wall mounting	
	Dimension		148x180x87 mm	200x180x87 mm
SPD	SPD Category		Type 1ca per UL1449 5th	
	Max. Continuous Operating Voltage AC	U_c	320VAC	
	Nominal Discharge Current (8/20 μs)	I_n	20kA	20kA
	Max. Discharge Current (8/20 μs)	I_{max}	50kA	50kA
	Voltage Protection Level	U_p	1.5kV	1.5kV
	Thermal Disconnector / Indication		Internal red - failure	
LEC-ATB	Display Screen		OLED screen	
	Event Logging		999 events	
	Surge Event Counting		Counting Current ≥100A (adjustable)	
	Communication Interface		RS485	
	Indication		Buzzer / Indicator	
SCB	Trip Current	I_t	3±1A	
	Trip Time	T_t	≤40ms	

iSPD-AT/...

- SPD + LEC-ATB
- Surge capacity 8/20μs: 50kA

Part No.			iSPD-AT/C320-PN	iSPD-AT/C320-3PN
General	Power System		2W+G, 1ph	WYE 4W+G, 3ph
	System Voltage	U_n	220/380V ~ 240/415V	
	Connection		Connection in parallel	
	Connecting Cable		Power line:10-35mm^2 ; Remote signal:1.5mm^2	
	Mounting		DIN-Rail	
SPD	SPD Category		Type 1ca per UL1449 5th	
	Max. Continuous Operating Voltage AC	U_c	320VAC	
	Nominal Discharge Current (8/20 μs)	I_n	20kA	20kA
	Max. Discharge Current (8/20 μs)	I_{max}	50kA	50kA
	Voltage Protection Level	U_p	1.5kV	1.5kV
	Thermal Disconnector / Indication		Internal red - failure	
LEC-ATB	Display Screen		OLED screen	
	Event Logging		999 events	
	Surge Event Counting		Counting Current ≥100A (adjustable)	
	Communication Interface		RS485	
	Indication		Buzzer / Indicator	

iSPD-...-SCB

- SPD + SCB
- Surge capacity 8/20μs: 50kA

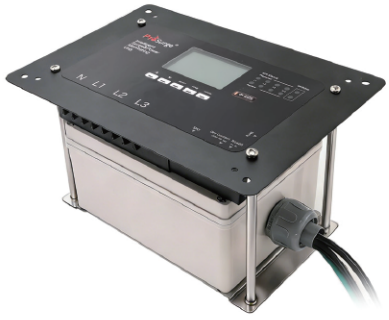
Part No.			iSPD-C320-PN-SCB	iSPD-C320-3PN-SCB
General	Power System		2W+G, 1ph	WYE 4W+G, 3ph
	System Voltage	U_n	220/380V ~ 240/415V	
	Connection		Connection in parallel	
	Connecting Cable		Power line:10-35mm^2 ; Remote signal:1.5mm^2	
	Mounting		DIN-Rail	
SPD	SPD Category		Type 1ca per UL1449 5th	
	Max. Continuous Operating Voltage AC	U_c	320VAC	
	Nominal Discharge Current (8/20 μs)	I_n	20kA	20kA
	Max. Discharge Current (8/20 μs)	I_{max}	50kA	50kA
	Voltage Protection Level	U_p	1.5kV	1.5kV
	Thermal Disconnector / Indication		Internal red - failure	
SCB	Trip Current	I_t	3±1A	
	Trip Time	T_t	≤40ms	

Intelligent Surge Protective Device iSPD

The iSPD is composed of two essential parts: Prosurge's UL-listed PSP series panel SPD and an intelligent monitoring unit iMU. The iMU features a graphic LCD, LED indicators, Query/ Control buttons, a Disable alarm button, and a buzzer, with a graphical interface for intuitive human-machine interaction. It supports RS-485 (Modbus RTU) and Ethernet (Modbus TCP) communication, as well as standard dry contact relays, enabling multiple intelligent power monitoring functions and real-time alarm notifications.

(H)PSP…-iMU-S

(H)PSP…-iMU-I



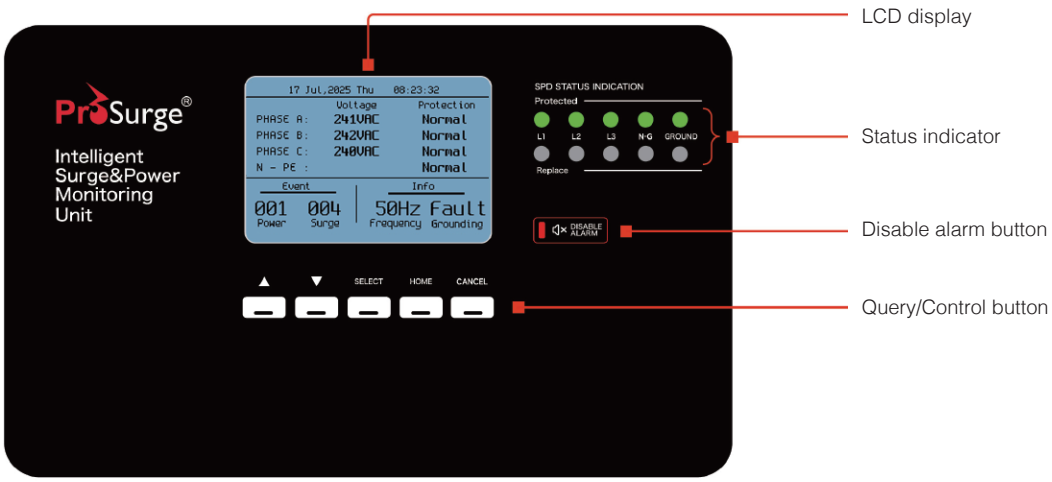
Notes: The iMU and PSP series panel SPD can be mounted separately or integrally as an option. Models with the suffix "-S" are for separate installation (e.g., PSP…-iMU-S), while those with the suffix "-I" are for integrated installation (e.g., PSP…-iMU-I).

Surge Protection Features:

- UL Type 1 SPDs according to UL 1449 5th and CSA C22.2
- UL1283, UL1449 5th and CSA listed Type 2 SPDs with Sine Wave Tracking (EMI/RFI filter)
- Sine Wave Tracking (EMI/RFI filter) filtering up to -45dB from 10kHz to 100MHz
- Nominal discharge current 20kA (8/20μs)
- 100~600kA (8/20μs) surge current capacity ratings
- Supports optional conductor/ terminal lug for power connection
- Optional separate/integrated installation between iMU and panel SPD

PSP Category	PSP C1	HPSP
Certification	ANSI / UL 1449 5th, UL1283, CSA C22.2, Type 1, Type 2	
Connection Type	Parallel Connected	
Nominal Voltage (AC)	120-480V	120-480V
Surge Capacity	100~300kA	400~600kA
Nominal Discharge Current In	20kA	
SCCR	200kArms	
UL1283 EMI / RFI filter	Sine wave tracking, up to -45dB from 10kHz to 100MHz (Type 2 only)	
Power Connection	(H)PSP: 10AWG, 762mm (30") length conductor	
	T (H)PSP: Terminal Lug (For #6 AWG Wire MAX)	
Working Environment	Temperature: -40°C~+75°C; Humidity relative 5~95% (25°C); Altitude:≤3km	
Dimensions, WxDxH	(H)PSP: 232x150x106 mm	
	T (H)PSP: 232x200x136 mm	
Threaded NPT	(H)PSP: 3/4" NPT	
	T (H)PSP: 3/8" NPT	
Enclosure	Waterproof plastic enclosure	
Intelligent Monitoring Unit	iMU	

Intelligent Monitoring Unit (iMU)



Intelligent Monitoring Features:

- Real-time monitor the protection status of each phase, N-G mode, and grounding status
- LCD display and membrane buttons for intuitive operation, plus audible alarm with alarm disable function.
- Multi-functional power quality monitoring to monitor real-time protection status and electrical characteristics
- Stores up to 5000 timestamped event records, capturing magnitude and duration of power quality events
- Capable of distinguishing and recording three levels of surge events(Low,Medium,High)
- Detects and displays surge polarity and direction (line or ground)
- Records only surge currents exceeding 100A to effectively prevent false reporting
- Supports RS-485 (Modbus RTU), RJ45(Ethernet , Modbus TCP), and standard dry relay contacts

Intelligent Monitoring Unit	iMU
Nominal Voltage (AC)	120-480V
Protection Status Indication	A,B,C (L1,L2,L3), N-G mode; Normal=Green LED ON, Fail= Red LED Blinking
Grounding Status Indication	Normal=Green LED ON, Fail= Red LED Blinking
Display Module	LCD Display
Query/Control Button	“SELECT”,”HOME”, “CANCEL”, “UP”, “DOWN”, “DISABLE ALARM”
Communication	Modbus RTU (RS-485), Modbus TCP (RJ45)
Remote Alarm	Dry relay contacts, Rating: 10A 250VAC / 5A 30VDC
Dimensions, WxDxH	286x202x48.4 mm

The Intelligent Monitoring Unit (iMU) features power quality monitoring functionality, which provides the time, date, magnitude, and duration of the following events and functions:

Power quality monitoring events and functions			
1	Voltage Sags (time, date, magnitude and duration)	9	User settable alarm threshold ranges (Frequency and Volts)
2	Voltage Swells (time, date, magnitude and duration)	10	LED status indication per Phase and N-G mode
3	Over Voltage (time, date, magnitude and duration)	11	LED status indication for Grounding
4	Voltage Dropouts(time, date, magnitude and duration)	12	Audible alarm, Disable alarm
5	Voltage Outages (time, date, magnitude and duration)	13	Remote alarm (Dry relay contacts)
6	Surge(time, date, level and polarity): • Low 100 A ~500 A • Medium 500 A~3000 A • High >3000A • Surge polarity	14	Modbus RTU (RS-485) remote communications capability
7	Real-time Power Frequency display	15	Modbus TCP (RJ45) remote communications capability
8	Volts RMS per phase (real time)	16	-

This catalogue is intended as an overview of PROSURGE surge protection devices. More detailed product information can be found at www.prosurge.com or contact us.

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Prosurge's products are distributed in more than 60 countries worldwide via our distributors.