

Surge Protective Device Module **multicomp**^{PRO}

RoHS
Compliant



Description

Surge protective device module (SPD-M) is an onboard lightning protection module that integrates functions, such as thermal protection, overvoltage protection, and remote signaling, and others. A single module can meet common-mode, differential-mode or full-mode protection requirements.

SPD-M, an integrated solution, can simplify the design and selection of surge protection modules for users, and is suitable for surge protection of low-voltage AC or DC power supply equipment. Surge protective device module (SPD-M) has the characteristics of small board space, high level of integration, and complete protection functions and solutions.

Approvals

UL1449 4th Edition
TUV IEC/EN 61643-11

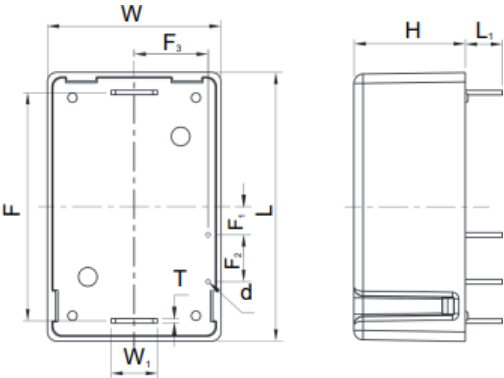
Applications

- Telecom Equipment
- AC / DC Power Supply
- Uninterruptable Power Supply (UPS)
- Surge Protective Device (SPD)

Features

- High Reliability
- Small Size
- Combination Technology of ATCO, MOV and GDT
- Comply with UL 1449 / IEC 61643-11
- Differential-mode / Common-mode Protection

Diagram



L	L ₁	W	W ₁	H	T	d	F	F ₁	F ₂	F ₃	F ₄
28.5 ±1	4 ±1	18.5 ±1	5 ±0.5	17 ±1	0.5 ±0.05	0.5 ±0.05	24.4 ±1	4 ±1	3 ±0.5	5 ±1	8 ±1

Dimensions : Millimetres

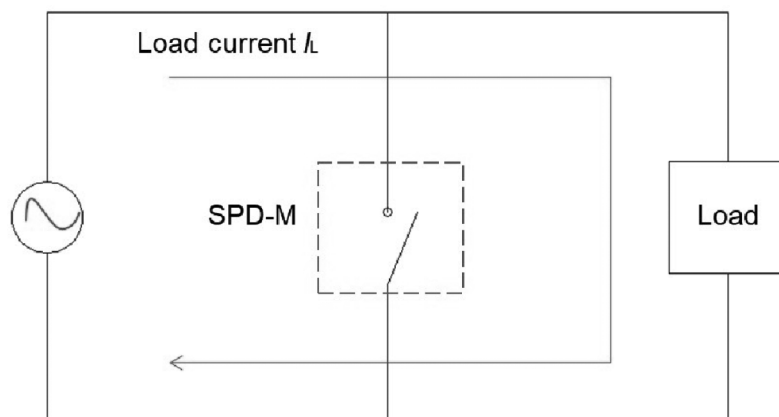
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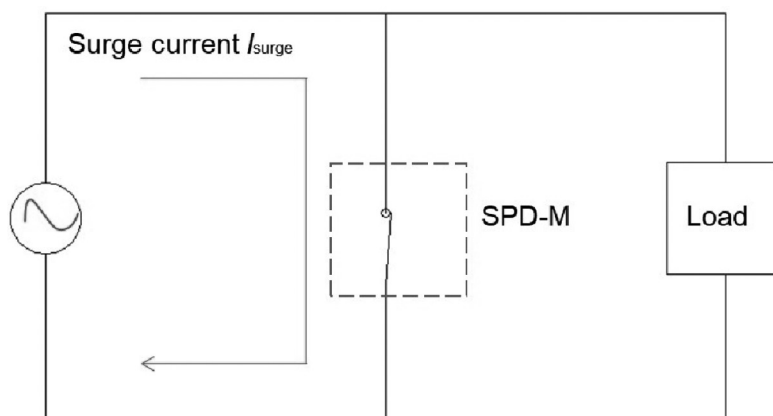
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Operation Principle

SPD-M is equivalent to open circuit when the circuit without surge (Impedance > 100 MΩ)



When a surge invades the circuit, the SPD-M circuit mutates to a low impedance, releasing the surge current into the ground



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Glossary

Item	Description
U_p	Voltage Protection Level Maximum voltage to be expected at the SPD terminals due to an impulse stress with defined voltage steepness and an impulse stress with a discharge current with given amplitude and wave shape.
8/20 μs	8/20 Current Impulse Current impulse with a nominal virtual front time of 8 μs and a nominal time to half-value of 20μs.
1.2/50 μs	1.2/50 Voltage Impulse Voltage impulse with a nominal virtual front time of 1.2 μs and a nominal time to half-value of 50 μs.
U_c	Maximum Continuous Operating Voltage Maximum r.m.s. voltage, which may be continuously applied to the SPD's mode of protection.
I_n	Nominal Discharge Current Crest value of the current through the SPD having a current waveshape of 8/20.
I_{imp}	Impulse Discharge Current for Class I Test Crest value of a discharge current through the SPD with specified charge transfer Q and specified energy W/R in the specified time.
I_{max}	Maximum Discharge Current Crest value of a current through the SPD having an 8/20 waveshape and magnitude according to the manufacturers specification. I _{max} is equal to or greater than I _n .
Modes of protection	Modes of protection An intended current path, between terminals that contains protective components, e.g. line-to-line, line-to-earth, line-to-neutral, neutral-to-earth.
I_p	Degree of protection of enclosure Classification preceded by the symbol IP indicating the extent of protection provided by an enclosure against access to hazardous parts, against ingress of solid foreign objects and possibly harmful ingress of water
TCO	Thermal-Link A non-resettable device incorporating a THERMAL ELEMENT which will open a circuit once only when exposed for a sufficient length of time to a temperature in excess of that for which it has been designed.
ATCO	Alloy Thermal-Link Alloy Type Thermal-Link, Alloy is the thermal element.

Specification Table

Model	Max. Continuous Operating Voltage		Nominal Discharge Current (8/20 μs)	Voltage Protection Level	Response Time	External Overcurrent Protection
	U _s		I _n	U _p		
	(VAC)	(VDC)	(kA)	(V)	(ns)	(A)
MPSM20K820P1NBA	50	65	20	400	<25	16

Note:

a: Recommended External Circuit Breaker Model C 10 A, Curve C.

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Part Number Table

Description	Part Number
SPD Module, 50V AC / 65V DC, 20kA	MPSM20K820P1NBA

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