

# 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.

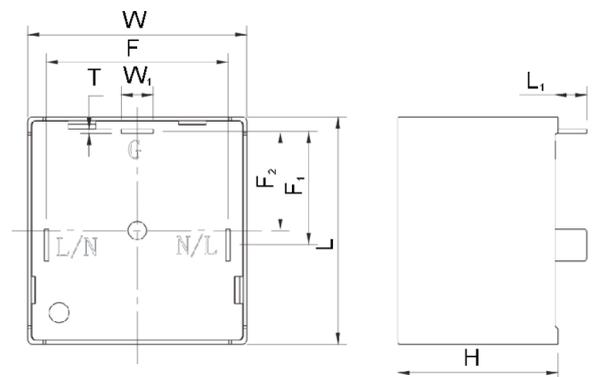
SPD-M, an integrated solution, can simplify the design and selection of surge protection modules for users, and is suitable for surge protection of low-voltage AC or DC power supply equipment. Surge protective device module (SPD-M) has the characteristics of small board space, high level of integration,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

## 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



L	L <sub>1</sub>	W	W <sub>1</sub>	H	T	F	F <sub>1</sub>	F <sub>2</sub>
25 ±1	3.5 ±1	24 ±1	3.5 ±0.5	17.6 ±1	0.5 ±0.05	20 ±1	12.5 ±1	11 ±1

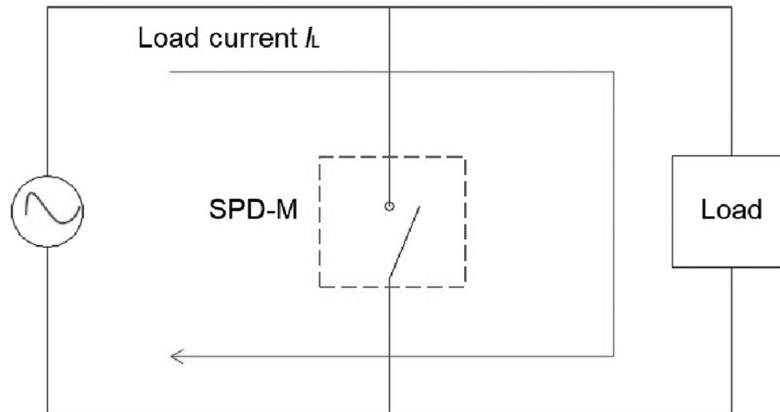
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Farnell.com/multicomp-pro  
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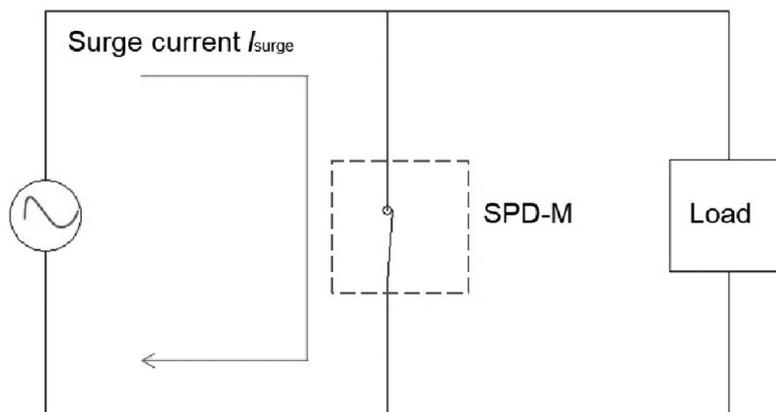
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## Operation Principle

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



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
$U_p$	<b>Voltage Protection Level</b> 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. — (IEC 61643-11)
8/20 $\mu$ s	<b>8/20 Current Impulse</b> Current impulse with a nominal virtual front time of 8 $\mu$ s and a nominal time to half-value of 20 $\mu$ s. — (IEC 61643-11)
1.2/50 $\mu$ s	<b>1.2/50 Voltage Impulse</b> Voltage impulse with a nominal virtual front time of 1.2 $\mu$ s and a nominal time to half-value of 50 $\mu$ s. — (IEC 61643-11)
$U_c$	<b>Maximum Continuous Operating Voltage</b> Maximum r.m.s. voltage, which may be continuously applied to the SPD's mode of protection. — (IEC 61643-11)
$I_n$	<b>Nominal Discharge Current</b> Crest value of the current through the SPD having a current waveshape of 8/20. — (IEC 61643-11)
$I_{imp}$	<b>Impulse Discharge Current for Class I Test</b> Crest value of a discharge current through the SPD with specified charge transfer Q and specified energy W/R in the specified time. — (IEC 61643-11)
$I_{max}$	<b>Maximum Discharge Current</b> 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 $I_n$ . — (IEC 61643-11)
<b>Modes of protection</b>	<b>Modes of protection</b> An intended current path, between terminals that contains protective components, e.g. line-to-line, line-to-earth, line-to-neutral, neutral-to-earth. — (IEC 61643-11)
$I_p$	<b>Degree of protection of enclosure</b> 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 — (IEC 61643-11)
<b>TCO</b>	<b>Thermal-Link</b> 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.
<b>ATCO</b>	<b>Alloy Thermal-Link</b> Alloy Type Thermal-Link, Alloy is the thermal element.

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## Specification

Model	Max. Continuous Operating Voltage		Nominal Discharge Current (8/20 $\mu$ s)	Max. Discharge Current (8/20 $\mu$ s)	Voltage Protection Level	Response Time	External Overcurrent Protection
	$U_s$		$I_n$	$I_{max}$	$U_p$		
	(VAC)	(VDC)	(kA)	(kA)	(V)	(ns)	(A)
MPSM15S241P3NBB	150	--	5	10	800	<25	10
MPSM15S271P3NBB	175				1200		
MPSM15S471P3NBB	300				1500		
MPSM15S511P3NBB	320				800	<100	
MPSM15S241P3GBB	150				1200		
MPSM15S271P3GBB	175				1500		
MPSM15S471P3GBB	300				800		
MPSM15S511P3GBB	320				1200		
MPSM15S561P3GBB	350	1500					

Note:

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

## Part Number Table

Description	Part Number
SPD Module, 5kA, 150V AC	MPSM15S241P3NBB
SPD Module, 5kA, 175V AC	MPSM15S271P3NBB
SPD Module, 5kA, 300V AC	MPSM15S471P3NBB
SPD Module, 5kA, 320V AC	MPSM15S511P3NBB
SPD Module, 5kA, 150V AC	MPSM15S241P3GBB
SPD Module, 5kA, 175V AC	MPSM15S271P3GBB
SPD Module, 5kA, 300V AC	MPSM15S471P3GBB
SPD Module, 5kA, 320V AC	MPSM15S511P3GBB
SPD Module, 5kA, 350V AC	MPSM15S561P3GBB

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