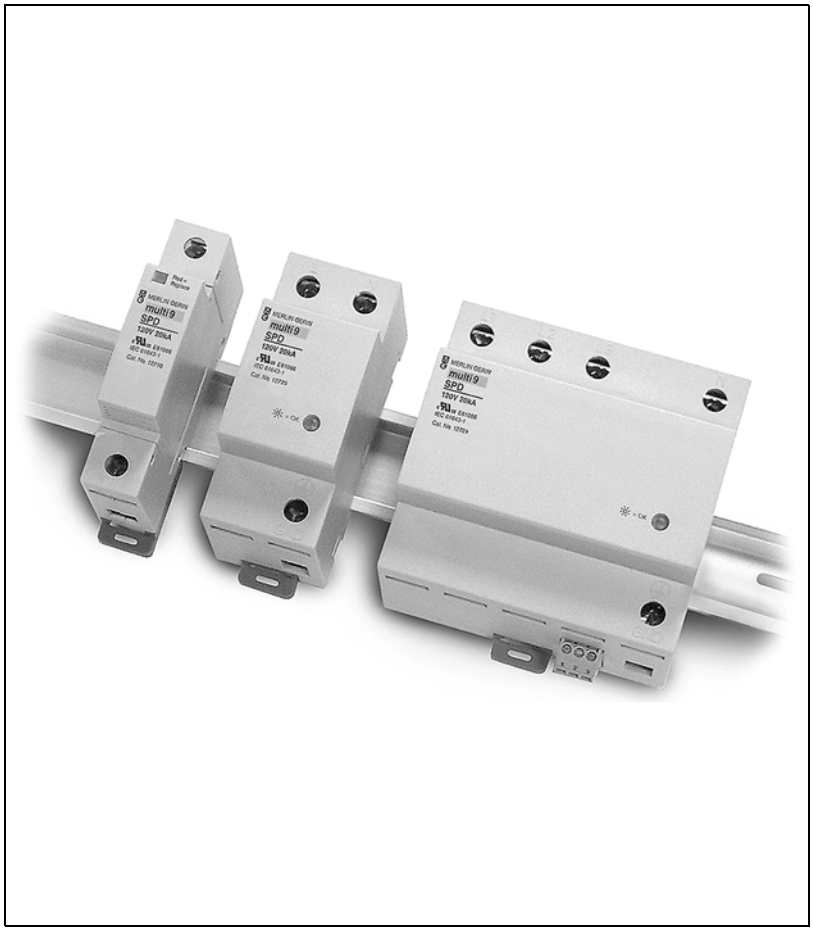
Surge Protective Device

Transient Voltage Surge Suppressor (TVSS)

MULTI 9™ SPD Series

Class 1312



Merlin Gerin
Modicon
Square D
Telemecanique

Schneider Electric Brands

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SQUARE D
Schneider Electric

PRODUCT DESCRIPTION

The MULTI 9™ Surge Protective Device (SPD), also referred to as Transient Voltage Surge Suppressor (TVSS), manufactured by Square D provides high-quality surge protection for electronic equipment. These devices can be mounted on a 35 mm rail on the load side of the incoming power to protect from transient voltage surges. This product is ideal for control-panel manufacturers and electrical installers requiring integral power protection.

The SPD provides protection for single- and multi-pole circuits and is ideal for manufacturers and integrators of industrial, medical, and commercial instrumentation equipment. These devices provide protection up to 80 kA (refer to the “Performance Features” table on page 3) from voltage surges generated by lightning, power supplier network switching, motors, frequency converters, etc.

The MULTI 9 circuit breakers and the SPDs mount quickly and easily to 35 mm mounting rails. The connectors provide easy parallel connection and greater installation flexibility. The plug-in module of the single-pole device allows replacement of a damaged SPD while still connected to the mounting rail and circuits.

Design Features

- Thermally fused suppression mode(s).
- Solid state bi-directional.
- Status indicator shows proper operation of the device.
- Optional dry contacts for remote monitoring (on many models).

NOTE: The SPD must be used with C60N Merlin Gerin Supplementary Protectors (MGSP) of proper rating according to the “Selection” table on page 5.

Performance Features

Catalog Number	Service Voltage	Poles	Maximum Surge Current/Phase	UL®		MCOV▲	IEC		Protection Modes
				Suppressed Voltage Rating (SVR)			Nominal Discharge Current	Voltage Protection Level	
				L–N	N–G				
	U_N		I_{MAX}		N–PE	U_C	I_N	U_P (L–N)	
12710	120 V	1	20 kA	500 V	—	150 V	5 kA	600 V	L–N
12711	230 V	1	20 kA	700 V	—	270 V	5 kA	960 V	
12712	400 V	1	20 kA	1500 V	—	480 V	5 kA	1580 V	
12713	120 V	1	45 kA	500 V	—	150 V	10 kA	750 V	
12714	120 V	1	45 kA	500 V	—	150 V	10 kA	750 V	
12715	230 V	1	45 kA	700 V	—	270 V	10 kA	1000 V	
12716	230 V	1	45 kA	700 V	—	270 V	10 kA	1000 V	
12717	400 V	1	45 kA	1500 V	—	480 V	10 kA	1450 V	
12718	400 V	1	45 kA	1500 V	—	480 V	10 kA	1450 V	
12719	120 V	1	65 kA	400 V	—	150 V	20 kA	920 V	
12720	120 V	1	65 kA	400 V	—	150 V	20 kA	920 V	
12721	230 V	1	65 kA	700 V	—	270 V	20 kA	1200 V	
12722	230 V	1	65 kA	700 V	—	270 V	20 kA	1200 V	
12723	400 V	1	65 kA	1200 V	—	480 V	20 kA	1950 V	
12724	400 V	1	65 kA	1200 V	—	480 V	20 kA	1950 V	
12725	120 V	2	20 kA	400 V	500 V	150 V	5 kA	575 V	L–N, N–G (N–PE)
12726	230 V	2	20 kA	700 V	600 V	270 V	5 kA	900 V	
12727	120 V	2	45 kA	400 V	500 V	150 V	10 kA	775 V	
12728	230 V	2	45 kA	700 V	600 V	270 V	10 kA	1080 V	
12729	208Y/120 V	4	20 kA	400 V	500 V	300/150 V	5 kA	560 V	
12730	208Y/120 V	4	20 kA	400 V	500 V	300/150 V	5 kA	560 V	
12731	400Y/230 V	4	20 kA	700 V	600 V	540/270 V	5 kA	900 V	
12732	400Y/230 V	4	20 kA	700 V	600 V	540/270 V	5 kA	900 V	
12733	208Y/120 V	4	45 kA	400 V	500 V	300/150 V	10 kA	760 V	
12734	208Y/120 V	4	45 kA	400 V	500 V	300/150 V	10 kA	760 V	
12735	400Y/230 V	4	45 kA	700 V	600 V	540/270 V	10 kA	1080 V	
12736	400Y/230 V	4	45 kA	700 V	600 V	540/270 V	10 kA	1080 V	
12737	208Y/120 V	4	80 kA	400 V	500 V	300/150 V	20 kA	1040 V	
12738	208Y/120 V	4	80 kA	400 V	500 V	300/150 V	20 kA	1040 V	
12739	400Y/230 V	4	80 kA	700 V	600 V	540/270 V	20 kA	1420 V	
12740	400Y/230 V	4	80 kA	700 V	600 V	540/270 V	20 kA	1420 V	

▲ MCOV=Maximum Continuous Operating Voltage

APPLICATION INFORMATION

The effects of lightning and the damage caused by lightning-generated transients are well known. The failure of sensitive electronic equipment can be attributed directly to lightning-generated transients and lower magnitude transients generated within a facility.

Transient voltages generated from inductive motors, pumps, electric welders, etc., may not always be large enough to cause immediate damage, but they can cause sensitive equipment to malfunction.

As a result of these transient disturbances, it is beneficial for a manufacturer to install protection within their equipment. The DIN rail products shown in this catalog provide a convenient means of incorporating transient voltage protection within a new or existing cabinet using DIN rail mounting configurations. The combination of MULTI 9 supplementary protectors and the DIN rail SPD Series TVSS provides a compact way of incorporating transient voltage protection.

SELECTION

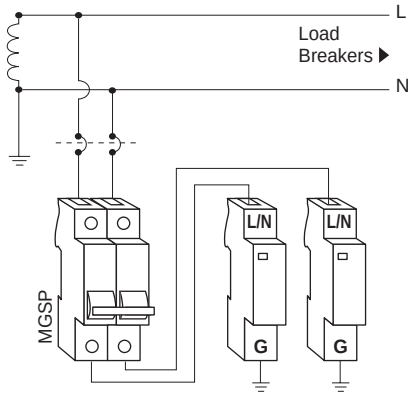
SPD Series Voltage Specifications		Poles	Dry Contacts	Maximum Surge Current/Phase	C60N Merlin Gerin Supplementary Protectors				
Catalog Number	Service Voltage U_N			I_{MAX}	Rating	1 Pole	2 Pole	3 Pole	4 Pole
12710	120 V	1	No	20 kA	10 A, Curve B	MG24116	MG24131	—	—
12711	230 V	1	No	20 kA	10 A, Curve B	MG24116	MG24131	—	—
12712	400 V	1	No	20 kA	10 A, Curve B	MG24116	MG24131	—	—
12713	120 V	1	No	45 kA	20 A, Curve B	MG24119	MG24134	—	—
					10 A, Curve C	MG24432	MG24449	—	—
12714	120 V	1	Yes	45 kA	20 A, Curve B	MG24119	MG24134	—	—
					10 A, Curve C	MG24432	MG24449	—	—
12715	230 V	1	No	45 kA	20 A, Curve B	MG24119	MG24134	—	—
					10 A, Curve C	MG24432	MG24449	—	—
12716	230 V	1	Yes	45 kA	20 A, Curve B	MG24119	MG24134	—	—
					10 A, Curve C	MG24432	MG24449	—	—
12717	400 V	1	No	45 kA	20 A, Curve B	MG24119	MG24134	—	—
					10 A, Curve C	MG24432	MG24449	—	—
12718	400 V	1	Yes	45 kA	20 A, Curve B	MG24119	MG24134	—	—
					10 A, Curve C	MG24432	MG24449	—	—
12719	120 V	1	No	65 kA	25 A, Curve B	MG24120	MG24135	—	—
					20 A, Curve C	MG24435	MG24452	—	—
12720	120 V	1	Yes	65 kA	25 A, Curve B	MG24120	MG24135	—	—
					20 A, Curve C	MG24435	MG24452	—	—
12721	230 V	1	No	65 kA	25 A, Curve B	MG24120	MG24135	—	—
					20 A, Curve C	MG24435	MG24452	—	—
12722	230 V	1	Yes	65 kA	25 A, Curve B	MG24120	MG24135	—	—
					20 A, Curve C	MG24435	MG24452	—	—
12723	400 V	1	No	65 kA	25 A, Curve B	MG24120	MG24135	—	—
					20 A, Curve C	MG24435	MG24452	—	—
12724	400 V	1	Yes	65 kA	25 A, Curve B	MG24120	MG24135	—	—
					20 A, Curve C	MG24435	MG24452	—	—
12725	120 V	2	No	20 kA	10 A, Curve B	MG24116	MG24131	—	—
12726	230 V	2	No	20 kA	10 A, Curve B	MG24116	MG24131	—	—
12727	120 V	2	No	45 kA	20 A, Curve B	MG24119	MG24134	—	—
					10 A, Curve C	MG24432	MG24449	—	—
12728	230 V	2	No	45 kA	20 A, Curve B	MG24119	MG24134	—	—
					10 A, Curve C	MG24432	MG24449	—	—
12729	208Y/120 V	4	No	20 kA	10 A, Curve B	—	—	MG24146	MG24161
12730	208Y/120 V	4	Yes	20 kA	10 A, Curve B	—	—	MG24146	MG24161
12731	400Y/230 V	4	No	20 kA	10 A, Curve B	—	—	MG24146	MG24161
12732	400Y/230 V	4	Yes	20 kA	10 A, Curve B	—	—	MG24146	MG24161
12733	208Y/120 V	4	No	45 kA	20 A, Curve B	—	—	MG24149	MG24164
					10 A, Curve C	—	—	MG24466	MG24483
12734	208Y/120 V	4	Yes	45 kA	20 A, Curve B	—	—	MG24149	MG24164
					10 A, Curve C	—	—	MG24466	MG24483
12735	400Y/230 V	4	No	45 kA	20 A, Curve B	—	—	MG24149	MG24164
					10 A, Curve C	—	—	MG24466	MG24483
12736	400Y/230 V	4	Yes	45 kA	20 A, Curve B	—	—	MG24149	MG24164
					10 A, Curve C	—	—	MG24466	MG24483
12737	208Y/120 V	4	No	80 kA	25 A, Curve C	—	—	MG24470	MG24487
12738	208Y/120 V	4	Yes	80 kA	25 A, Curve C	—	—	MG24470	MG24487
12739	400Y/230 V	4	No	80 kA	25 A, Curve C	—	—	MG24470	MG24487
12740	400Y/230 V	4	Yes	80 kA	25 A, Curve C	—	—	MG24470	MG24487

1-Pole Replacement Modules			
Catalog Number	**Service Voltage**	**Maximum Surge Current/Phase**	**Dry Contacts**
	U_N	I_{MAX}	
12710M	120 V	20 kA	No
12711M	230 V	20 kA	No
12712M	400 V	20 kA	No
12713M	120 V	45 kA	No
12714M	120 V	45 kA	Yes
12715M	230 V	45 kA	No
12716M	230 V	45 kA	Yes
12717M	400 V	45 kA	No
12718M	400 V	45 kA	Yes
12719M	120 V	65 kA	No
12720M	120 V	65 kA	Yes
12721M	230 V	65 kA	No
12722M	230 V	65 kA	Yes
12723M	400 V	65 kA	No
12724M	400 V	65 kA	Yes

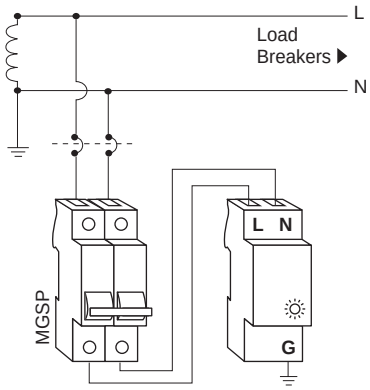
GENERAL SPECIFICATIONS

Maximum Surge Current	Refer to the I_{MAX} column in the table on page 5.
Housing Rating	Type 1 (IP20)
Connection Method	Parallel
Termination	#12 to #4 AWG (3-25 mm^2)
Terminal Torque	45 lb-in (5 N•m)
Thermal Fusing	Yes
Operating Temperature	-22° to +160°F (-30° to +70°C)
Operating Frequency	50/60/400 Hz
Diagnostics	1 Pole, Status indicator; 2 and 4 Pole, Status LED
Product Standards	c UL us to UL 1449–Second Edition and CSA C22.2 No. 0-M91, IEC 61643-1.

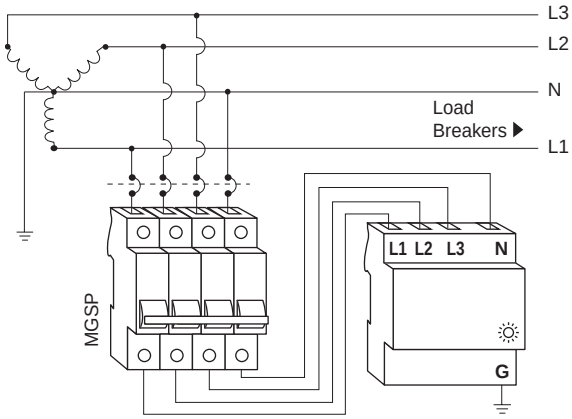
WIRING DIAGRAMS



1-phase, 2-wire 120 Vac, 230 Vac, or 400 Vac
using 1-pole surge protective devices (SPDs)



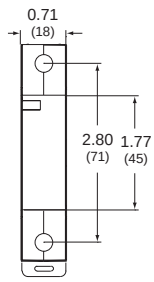
1-phase, 2-wire 120 Vac or
230 Vac using a 2-pole SPD



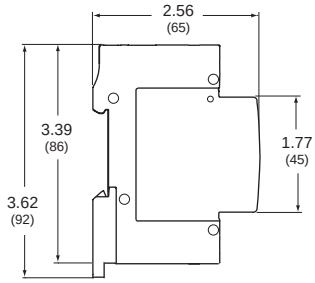
3-phase, 4-wire 208Y/120 Vac or 400Y/230 Vac using a 4-pole SPD

MULTI 9™ SPD Series
Dimensions and Weights

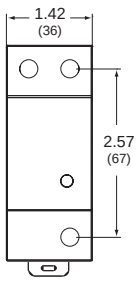
DIMENSIONS



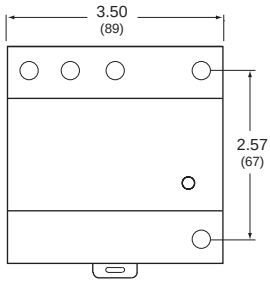
1-Pole Front

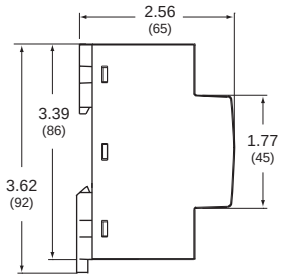


1-Pole Side



2-Pole Front





2- and 4-Pole Side

WEIGHTS

Poles	Weight lb (grams)
1	.22 (100)
2	.24 (109)
4	.56 (255)

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