

### Features

- Board mount
- 330 V surge protector
- UL Recognized
- Economical, reliable choice for all paired copper communications circuits
- Solid-state responsiveness combined with robust GDT

### Applications

- Telecommunications
- High speed data networks
- Hybrid fiber-coax networks
- Broadband powered networks

## MSP® Series - Multi-Stage Protector Sub-Assembly

Bourns® MSP® Multi-Stage Protector Series is a new generation of telecommunications protector designed to be the best all-around protection choice on both today and tomorrow's copper pair based communications circuits. It combines the strengths of gas tube and solid-state protectors while eliminating their weaknesses. Bourns® MSP® Multi-Stage Protector series is the synergistic integration of three advanced protection technologies; sixth generation gas tube, precision matched MOVs, and switch-grade fail-short. Working together, these three technologies meet the challenges of the evolving high-speed network.

Bourns® MSP® Series can be used universally on POTS, ISDN, ADSL, SDSL, HDSL, RADSL, VDSL, 10BaseT, and T1 carrier. Bourns® MSP® Series is the most economical, reliable, and best performing choice for all paired copper communications circuits.

### Characteristics

Test Methods per ITU-T K.12, IEEE C62.31 and IEC 61643-311 GDT standards.

Characteristic	Model No.
	2026-33-CxM143
DC Breakdown @ 100-2000 V/s	300 to 400 V
AC Breakdown @ 60 Hz	300 to 400 V
Impulse Breakdown <sup>(1)</sup>	
100 V/μs	600 V
1000 V/μs	650 V

<sup>(1)</sup> Impulse Sparkover voltage is defined as typical values of distribution.

Insulation Resistance .....	100 Vdc .....	> GΩ 1
Insertion Loss .....	10 MHz .....	0.01 dB
Capacitance Line to Line.....	1 MHz .....	10 pF typical
Capacitance Line to Ground .....	1 MHz .....	20 pF typical
Impulse Reset (DC Extinguishing) .....	52 V, 260 mA .....	< 10 ms
	135 V, 200 mA .....	< 10 ms <sup>(2)</sup>
Impulse Life Characteristics .....	100 A, 10/1000 μs .....	> 3000 operations <sup>(3)</sup>
	300 A, 10/1000 μs .....	> 1000 operations <sup>(3)</sup>
	500 A, 10/1000 μs .....	> 1000 operations <sup>(4)</sup>
	2000 A, 10/250 μs .....	> 100 operations <sup>(3)</sup>
	5000 A, 20/100 μs .....	> 10 operations <sup>(3)</sup>
	5000 A, 10/350 μs .....	1 operation <sup>(5)</sup>
	20000 A, 8/20 μs .....	> 10 operations <sup>(3), (5)</sup>
AC Life Characteristics.....	0.5 A rms continuous .....	> 30 seconds
	1 A rms, 1 second, 600 ft. cable .....	> 60 operations
	1 A rms, 1 second, 1 mile cable.....	> 60 operations
	10 A rms, 1 second .....	> 20 operations
	65 A rms, 11 cycles.....	> 1 operation <sup>(4)</sup>
	120 A rms, 0.1 second .....	1 operation
Life Test Criteria.....	Insulation Resistance Throughout the Life Test .....	MΩ100
	Life Test Failures.....	0.0 %
	Failures During Environmental Cycling w/Surges .....	0.0 %
Fail-Short (vented or non-vented gas tube).....		> 30 A rms, simultaneously
Operation and Storage Temperature.....		-55 to +85 °C
Climatic Category (IEC 60068-1).....		40/90/21

### Notes:

- UL, cUL Listed. File E153537
- Line to Line voltage is approximately 1.8 to 2 times the stated Line to Ground breakdown voltage.
- At delivery AQL 0.65 Level II, DIN ISO 2859.
- <sup>(2)</sup> Surpasses Telcordia GR 974 (network applied).
- <sup>(3)</sup> Exceeds Telcordia GR 1361.
- <sup>(4)</sup> RUS (REA) PE-80.
- <sup>4</sup> Total current equally divided between each line to ground.

\*RoHS Directive 2015/863, Mar 31, 2015 and Annex. Specifications are subject to change without notice.

Users should verify actual device performance in their specific applications.

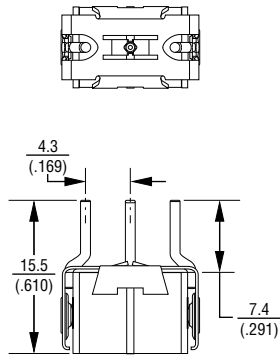
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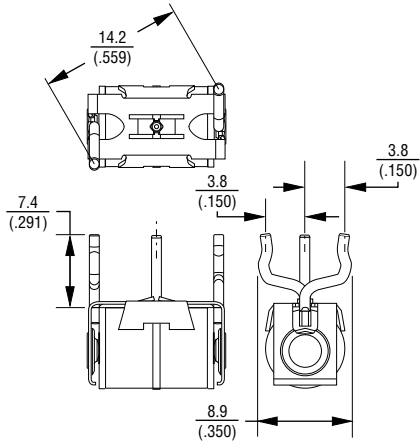
**WARNING Cancer and Reproductive Harm**  
[www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)

How to Order / Product Dimensions

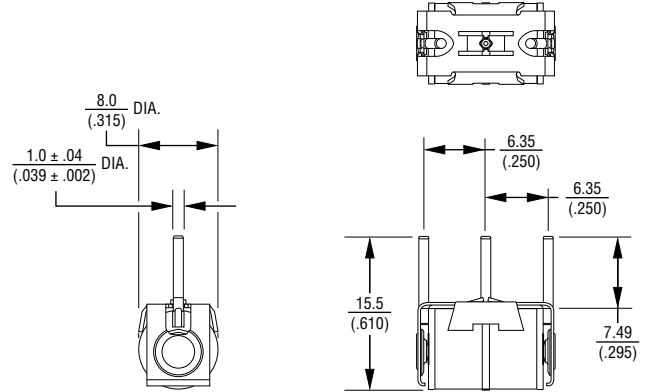
2026-33-C2M143



2026-33-C16M143



2026-33-C4M143



DIMENSIONS:  $\frac{\text{MM}}{\text{(INCHES)}}$

Contact factory for custom configurations.

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