

# MCG Surge

MODEL: 560LS

## Service Entrance Surge Protector

The 560LS Series provides 560,000A of robust surge protection for rugged and reliable protection at the main service entrance of large facilities. Each phase is guarded by 14 times redundant protection paths – reassuring when sensitive equipment's continuous operation is at stake. Twenty-year, no-nonsense warranty; free protection modules for life. Series features mix and match options for a customized protector at stock prices.

**Standout Feature:** Customizable to many applications

### Features:

- 560LS: I peak=560,000A/Phase (8 x 20µs waveform)
- UL Listed 1449 5th Ed., NEMA LS1-1992
- 14 times redundant protection paths per phase
- Employs new 40kA high headroom varistors with built-in high-speed thermal disconnect and dedicated cartridge fuse per surge path
- Solid copper bus bar construction
- Field-replaceable modules
- EMI/RFI noise filtering
- Continuously monitored protection circuits
- Internal and external status indicators
- NEMA 4, Powder Coated Steel Enclosure

### Mix and Match Options Available:

- Upgraded front panel with surge event counter, beeper and status relay (1 form C contacts)
- Disconnect Switch
- NEMA 4X Enclosure
- Low Impedance Micro-Z cable (10 AWG)
- Flush-mount Kit

Made in the

**USA**



**I<sub>peak</sub> = 560,000A**

**UL 1449 5th Edition Listed**

**20-Year Protector Warranty**  
Lifetime Module Replacement

### Filter Attenuation

MIL STD 220a (50 Ohm)	120VAC	220VAC	240VAC	277VAC	347VAC	480VAC
-30db	25kHz	25kHz	25kHz	50kHz	50kHz	50kHz
-40db	125kHz	180kHz	180kHz	100kHz	100kHz	100kHz
-50db	210kHz	210kHz	210kHz	180kHz	170kHz	170kHz
-60db	250kHz	250kHz	250kHz	200kHz	190kHz	190kHz

Model Ordering Example: 560LS-277Y-DS-UFP-SS

560LS	277Y	DS	UFP	SS
SERIES	VOLTAGE	DISCONNECT SWITCH*	UPGRADED FRONT PANEL*	NEMA 4X ENCL. STAINLESS STEEL*

NOTE: Additional options: Low-impedance MZ Cable (10AWG) and flush-mount kit must be ordered as separate line items.

\*optional

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# Specifications

- ANSI / IEEE C62.41-2002
- IEC 61643-1-1998
- UL 1449, 5th Edition

## MCG Surge - 560 LS Series

SPD Type: Type 2  
 I(n): 20kA  
 Maximum Continuous Operating VAC (MCOV): 115% Rated Line Voltage  
 Varistor MCOV: 125% Rated Line Voltage Minimum  
 SCCR: 100kA AIC  
 Surge Current/Phase (8/20µs): 1 Event - 560kA.  
 Surge Life/Phase(8/20µs): 10,000 Events: 25kA.  
 Surge Current/Mode (8/20µs): L-N: 320kA; L-G: 240kA; N-G: 240kA; L-L: 560kA  
 Surge Current/Mode, "D" Models (8/20µs): L-G: 560kA; L-L: 560kA  
 Response Time: <5 ns  
 Energy Absorption (8/20µs) in Joules: 26,496 - 108,000J  
 Status Indicators: LED Status Indicators (internal & external)  
 Modes of Protection: L-N, L-G, L-L, N-G  
 Operating Altitude: 13,000ft. (4000m)  
 Temp. (Operating/Storage): -40 degrees to +70 degrees C/-40 degrees to +85 degrees C  
 Enclosure: NEMA 4, 14 gauge steel, powder coated  
 Dimensions: 17" x 15" x 6" (432 x 381 x 153mm)  
 Mounting: 17.75" x 13"/.313"ID - 4 holes, (451 x 330mm/7.9mm ID) - 4 holes  
 Conduit Fitting Hole: 1" trade size located at the bottom of enclosure  
 Weight: 47 lbs. (21.4 kg)  
 UL File Number: E322161  
 UL Certification: UL Listed to 1449 5th Edition, UL96A Compliant  
 ARRA Certification: Complies with ARRA 1605 requirements

MODEL 560LS	SERVICE	VPR L-N	VPR L-G	VPR N-G	VPR L-L	6KV (1.2X50µs) 3KA (8X20µs) L-N***	20KV (1.2X50µs) 10KA (8X20µs) L-N***
-120S	120VAC, 1Φ, 2W+G	900	900	900	n/a	470	560
-120T	120/240VAC, 1Φ, 3W+G	900	900	900	1200	494	590
-120Y	120/208VAC, 3Φ, 4W+G, Wye	900	900	900	1200	494	590
-220Y	220/380VAC, 3Φ, 4W+G, Wye	1500	1500	1200	2000	976	1098
-220S	220VAC, 1Φ, 2W+G	1500	1500	1200	n/a	920	1040
-240Y	240/415VAC, 3Φ, 4W+G, Wye	1500	1500	1200	2000	976	1098
-240S	240VAC, 1Φ, 2W+G	1500	1500	1200	n/a	920	1040
-277Y	277/480VAC, 3Φ, 4W+G, Wye	1500	1500	1200	2000	976	1098
-347Y	347/600VAC, 3Φ, 4W+G, Wye	1500	1500	1500	2500	1240	1368
-240DCT*	240/120/120VAC, 3Φ, 4W+G	900/1500***	900/1500***	900	2000/1800** 1200/2000**	976/494	1098/590
-240D	240VAC, 3Φ, 3W+G, Delta	n/a	1500	n/a	2000	976 (L-G)	1098
-480D	480VAC, 3Φ, 3W+G, Delta	n/a	2000	n/a	4000	1532 (L-G)	1678
-600D	600VAC, 3Φ, 3W+G, Delta	n/a	2000	n/a	4000	1736 (L-G)	1910

\*High-leg Delta Center Tapped \*\*High-Leg \*\*\*Actual measurements with 6" Lead Length

**LS Series VPR:** These VPR represent standard wiring plus the upstream overcurrent safety device (circuit breaker). For best performance, use MCG's Micro-Z Cable (optional).

**A Note on Headroom:** A surge protector responds to increases in voltage. Surge protectors triggered by the nominal line voltage are undesirable, consequently headroom is always factored into surge protector design. Long duration voltage swells occur on power lines and can damage a surge protector, leaving facility equipment vulnerable. By employing higher headroom, continuity of surge protection is guaranteed. This feature is standard in MCG surge protectors. Higher headroom allows varistors to ride out voltage swells while ensuring that let-through voltage remains within CBEMA (now ITIC) guidelines. The CBEMA curve is the most accepted graph worldwide for equipment susceptibility analysis.

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