

MCG Surge

MODEL: 400LS

Service Entrance Surge Protector

The 400LS Series provides 400,000A of robust surge protection for rugged and reliable protection at the main service entrance of large facilities. Each phase is guarded by 10 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:

- 400LS: I peak=400,000A/Phase (8 x 20µs waveform)
- UL Listed 1449 5th Ed., NEMA LS1-1992
- Ten 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_{peak} = 400,000A

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: 400LS-277Y-DS-UFP-SS

400LS	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

MCG Surge Protection - 12 Burt Drive, Deer Park, NY 11729 - Made in the USA - www.mcgsurge.com
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Specifications

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

MCG Surge - 400 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 - 400kA.
 Surge Life/Phase(8/20µs): 10,000 Events: 19kA.
 Surge Current/Mode (8/20µs): L-N: 240kA; L-G: 160kA; N-G: 240kA; L-L: 400kA
 Surge Current/Mode, "D" Models (8/20µs): L-G: 400kA; L-L: 400kA
 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: 43 lbs. (19.5 kg)
 UL File Number: E322161
 UL Certification: UL Listed to 1449 5th Edition, UL96A Compliant
 ARRA Certification: Complies with ARRA 1605 requirements

MODEL 400LS	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	800	n/a	480	570
-120T	120/240VAC, 1Φ, 3W+G	900	900	800	1200	505	600
-120Y	120/208VAC, 3Φ, 4W+G, Wye	900	900	800	1200	505	600
-220Y	220/380VAC, 3Φ, 4W+G, Wye	1500	1500	1500	2000	990	1130
-220S	220VAC, 1Φ, 2W+G	1500	1500	1500	n/a	940	1070
-240Y	240/415VAC, 3Φ, 4W+G, Wye	1500	1500	1500	2000	970	1030
-240S	240VAC, 1Φ, 2W+G	1500	1500	1500	n/a	940	1170
-277Y	277/480VAC, 3Φ, 4W+G, Wye	1500	1500	1500	2000	970	1130
-347Y	347/600VAC, 3Φ, 4W+G, Wye	1800	1800	1500	2500	1260	1400
-240DCT*	240/120/120VAC, 3Φ, 4W+G	900/1500***	900/1500***	900	2000/1800** 1200/2000**	970/505	1130/600
-240D	240VAC, 3Φ, 3W+G, Delta	n/a	1500	n/a	2000	970 (L-G)	1130 (L-G)
-480D	480VAC, 3Φ, 3W+G, Delta	n/a	2000	n/a	4000	1548 (L-G)	1720 (L-G)
-600D	600VAC, 3Φ, 3W+G, Delta	n/a	2500	n/a	4000	1755 (L-G)	1930 (L-G)

*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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