

MCG Surge

MODEL: 120LS

Branch Panel Surge Protector

Protect branch panels with the 120kA/phase 120LS series from MCG Surge Protection. The SPD offers three times redundant protection paths per phase and continuous monitoring of protection status. Sensitive equipment remains online and undamaged by transients, surges, and lightning. Mix and match options are available for a customized protector suited directly to your facility's needs.

Standout Feature: Customizable to many applications

Features:

- 120LS: I peak=120,000A/Phase (8 x 20µs waveform)
- UL Listed 1449 5th Ed., NEMA LS1-1992
- Three 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} = 120,000A

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: 120LS-277Y-DS-UFP-SS

| 120LS | 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
email: info1@mcgsurge.com phone: 631-586-5125 toll-free: 1-800-851-1508

Specifications

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

MCG Surge - 120 LS Series

SPD Type: Type 2
 I(n): 10kA
 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 - 120kA.
 Surge Life/Phase(8/20µs): 10,000 Events: 6kA.
 Surge Current/Mode (8/20µs): L-N: 80kA; L-G: 40kA; N-G: 120kA; L-L: 120kA
 Surge Current/Mode, "D" Models (8/20µs): L-G: 120kA; L-L: 120kA
 Response Time: <5 ns
 Energy Absorption (8/20µs) in Joules: 8,832-32,400J
 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): 0 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: 30 lbs. (14.4 kg)
 UL File Number: E322161
 UL Certification: UL Listed to 1449 5th Edition, UL96A Compliant
 ARRA Certification: Complies with ARRA 1605 requirements

| MODEL 120LS | 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 | 520 | 625 |
| -120T | 120/240VAC, 1Φ, 3W+G | 900 | 900 | 800 | 1200 | 550 | 660 |
| -120Y | 120/208VAC, 3Φ, 4W+G, Wye | 900 | 900 | 800 | 1200 | 550 | 660 |
| -220Y | 220/380VAC, 3Φ, 4W+G, Wye | 1500 | 1500 | 1200 | 2000 | 1110 | 1270 |
| -220S | 220VAC, 1Φ, 2W+G | 1500 | 1500 | 1200 | n/a | 1050 | 1190 |
| -240Y | 240/415VAC, 3Φ, 4W+G, Wye | 1500 | 1500 | 1200 | 2000 | 1110 | 1270 |
| -240S | 240VAC, 1Φ, 2W+G | 1500 | 1500 | 1200 | n/a | 1050 | 1190 |
| -277Y | 277/480VAC, 3Φ, 4W+G, Wye | 1500 | 1500 | 1200 | 2000 | 1110 | 1270 |
| -347Y | 347/600VAC, 3Φ, 4W+G, Wye | 1800 | 1800 | 1500 | 2500 | 1350 | 1580 |
| -240DCT* | 240/120/120VAC, 3Φ, 4W+G | 900/1500*** | 900/1500*** | 800 | 2000/1800** 1200/2000** | 1110/550 | 1270/660 |
| -240D | 240VAC, 3Φ, 3W+G, Delta | n/a | 1500 | n/a | 2000 | 1110 (L-G) | 1270 |
| -480D | 480VAC, 3Φ, 3W+G, Delta | n/a | 2000 | n/a | 4000 | 1640 (L-G) | 1890 |
| -600D | 600VAC, 3Φ, 3W+G, Delta | n/a | 2500 | n/a | 4000 | 1830 (L-G) | 2410 |

*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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