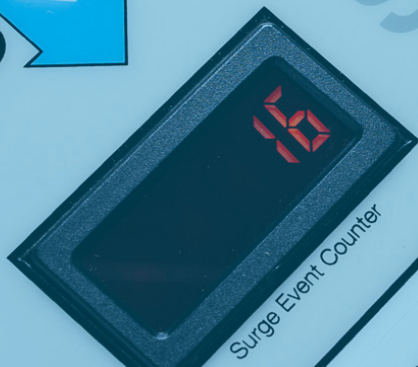


CE
SurgeFree™

SE Series



SE-EC2-DIN
20kA
10/2018

MCG

Surge Protection

AC Power Line Surge Protection Catalog

Made in the
USA

1-800-851-1508
www.mcgsurge.com


UL 1449 4th Edition Listed

Q&A

Why is surge protection needed?

Surge Protection Devices (SPD) prevent upset or damage to sensitive equipment, thereby preventing significant economic loss due to downtime.

Where do transients come from?

- Lightning: 9 to 20 million strikes a year in USA alone
- Utility generated switching surges
- Elevators, welding machines, copiers, air conditioners, etc.
- Scheduled test operation of equipment such as standby motor-generator sets

Where are surge protectors most helpful?

- Critical Applications: production lines, waste water treatment plants, water districts, broadcast
- Sensitive computer-controlled machinery
- Residences: the average household has thousands of dollars worth of electronics
- Banks, investment firms, brokerages, etc.
- Critical Sites: emergency response sites, consulates, airports, hospitals, shopping malls, etc.
- Offices, retail, and restaurants

Why is low “let-through” voltage critical for sensitive equipment?

Surge protectors divert very large transient surge currents to ground. However, sensitive equipment will be exposed to the SPD’s clamping voltage plus the voltage drop across its connecting cable. The equipment is not properly protected unless the “let-through” voltage is considered.

Are there other concerns regarding SPDs?

Yes. One should expect a useful life of more than 20 years. SPDs may fail from a direct lightning strike, but this is a rare occurrence. Internal MOV damage can occur due to excessive AC line voltages due to misapplication.

How is MCG addressing that problem?

MCG’s proprietary low voltage drop “Micro-Z” cable, when combined with higher voltage MOVs, provides a much greater safety margin (headroom) between the sine wave peak and the MOV’s “turn-on” threshold.

Where to Buy:

MCG Surge Protection has sales representatives worldwide.

Please visit www.mcgsurge.com/where-to-buy to find your local sales representative

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Informational Material:

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- 5. The Importance of Protection Redundancy
- 6. What Do You Really Need in a Surge Protector?
- 7. Coordinated Protection Recommendations
- 8. Systemwide Protection Overview Diagram

Comprehensive Surge Protection with On-Board Power Metering:

- 9. LS Executive Metered Surge Protector Information
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- 12. 560LS Executive Surge Protector with Metering
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- 20. 120LS Executive Surge Protector with Metering

LS Series Modular Surge Protectors

- 22. 560LS 560kA Surge Protector
- 24. 400LS 400kA Surge Protector
- 26. 300LS 300kA Surge Protector
- 28. 200LS 200kA Surge Protector
- 30. 120LS 120kA Surge Protector

M Series Modular Surge Protectors

- 32. 120/160M 120kA/160kA Surge Protector
- 34. 90/125/150M Surge Protectors

PT Series Surge Protectors

- 36. PT120/160/250 Surge Protectors
- 38. PT40/80 Surge Protectors
- 40. PT40/80-BB Affordable Surge Protectors

IEC Spec. Surge Protectors

- 42. SE Series SF40 200kA Surge Protector
- 44. SE Series SF40 100kA Surge Protector

- 46. CPT SE Series Surge Protector (100/200kA)

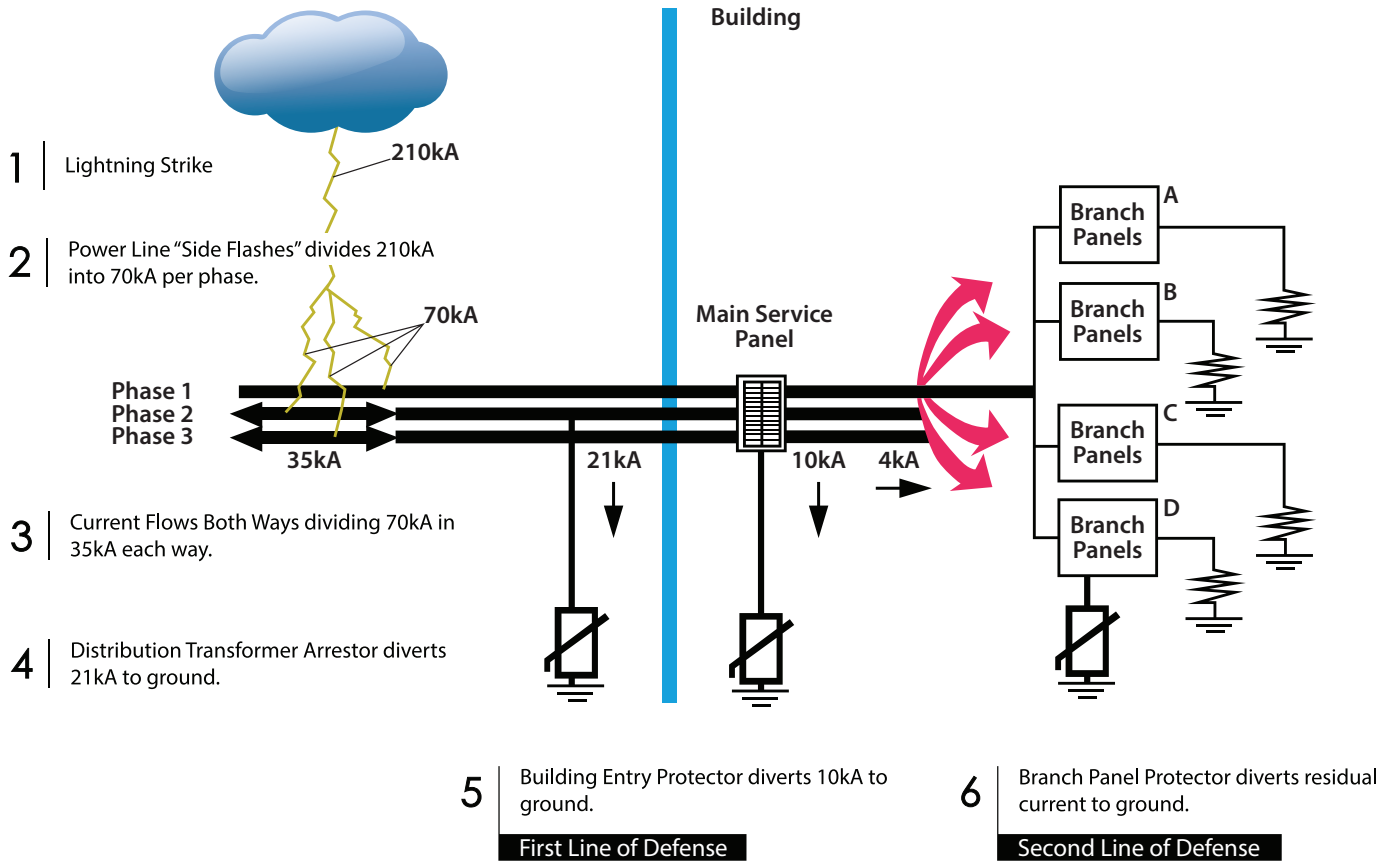
- 48. 500 Series Surge Protector

OEM Surge Protectors

- 50. CCP Control Cabinet Surge Protector
- 52. 400 Series OEM Surge Protectors
- 53. About MCG

ANATOMY OF A LIGHTNING STRIKE

How a 210kA Strike Becomes 10kA at the Building Entry



YOUR FIRST LINE OF DEFENSE BUILDING ENTRY PROTECTION

One of the largest lightning transient currents recorded was a 210kA with a duration in the tens of micro-seconds. By far, the greatest outside threat to sensitive equipment is from lightning strikes to overhead AC power lines which then couple the transient into your facility. Lightning strikes directly to the facility occur much less frequently.

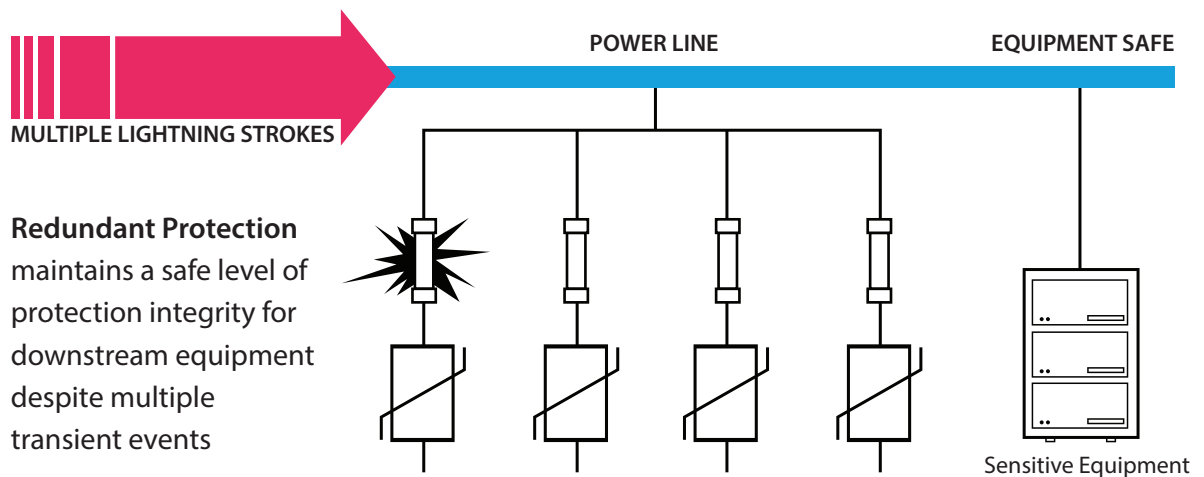
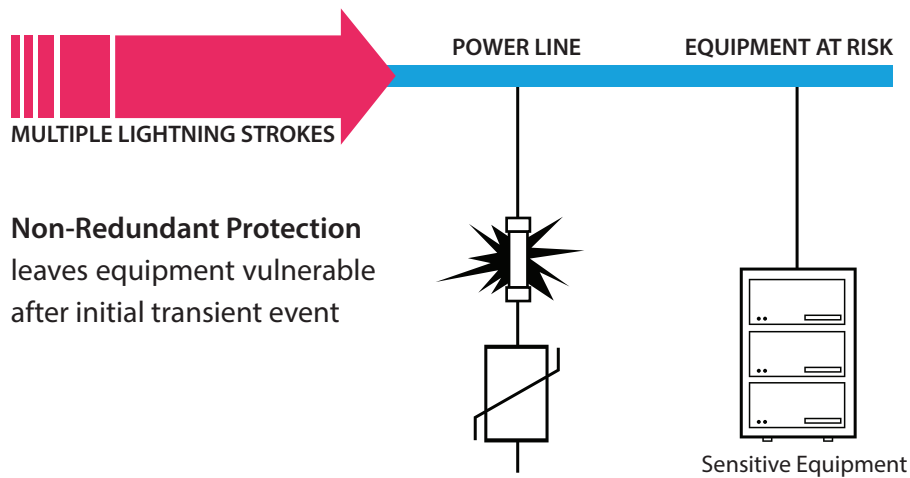
YOUR SECOND LINE OF DEFENSE MID-BUILDING PROTECTION

Other very common sources of transient voltage spikes occur deep within a building and are caused by elevators, copiers, air conditioners, arc-welders, etc. - a suitably-sized surge protector located at the branch and local panels will very effectively suppress these locally-generated transients to safe voltage levels.

THE IMPORTANCE OF PROTECTION REDUNDANCY

Multiple protection pathways to ground are critical. A lightning strike often consists of multiple current strokes to the power lines, or earth. As many as two to twenty strokes can occur in a single lightning event.

To provide proper system protection, the building entry surge protector needs to have at least two, and preferably several, independently-fused, parallel protection sections per phase. The failure of a single protection section in a redundant surge protector, in a severe lightning storm for example, would not be catastrophic. System protection would continue to be maintained.



It is recommended that this redundant concept be continued at the mid-building/branch level, while the local service panel protectors can safely employ single protection approaches.

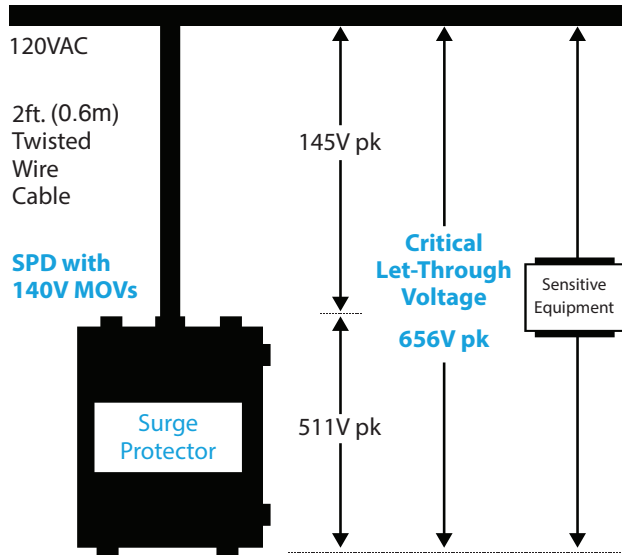
WHAT DO YOU REALLY NEED IN A SURGE PROTECTOR?

IMPROVED CLAMPING + INCREASED HEADROOM:

Micro-Z cabling forces a very efficient magnetic field cancellation within the cable. This results in a correspondingly low inductive voltage drop along the cable that is lower than what is achieved with conventional wiring.

CONVENTIONAL SPD INSTALLATION

6kV, 1.2/50µs-3kA, 8/20µs

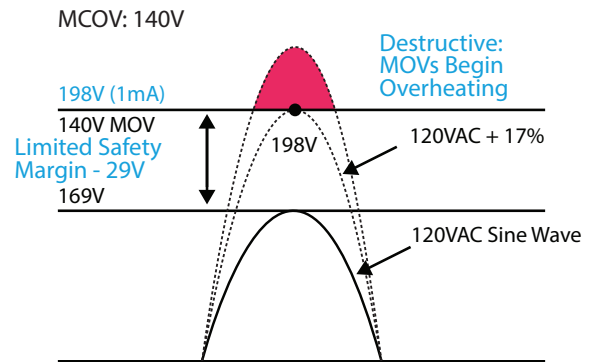


Transient: 6kV, 1.2/50µs - 3kA, 8/20µs

MCOV: 140V rms

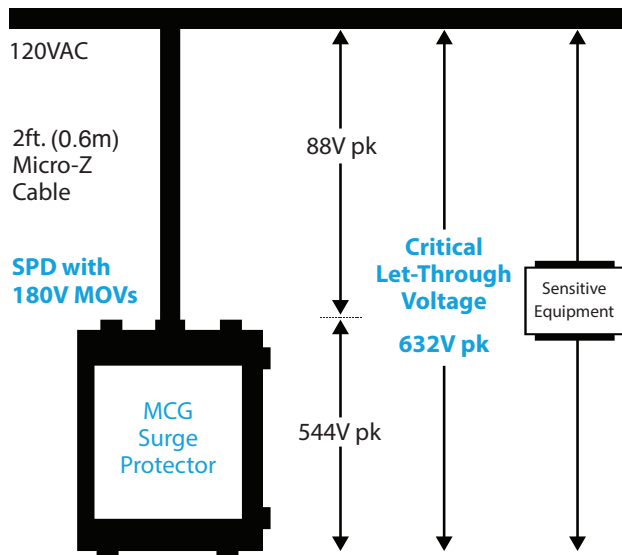
Headroom: 17%

"Let-Through" Voltage: 656V



MCG SPD WITH MICRO-Z CABLE INSTALLATION

6kV, 1.2/50µs-3kA, 8/20µs

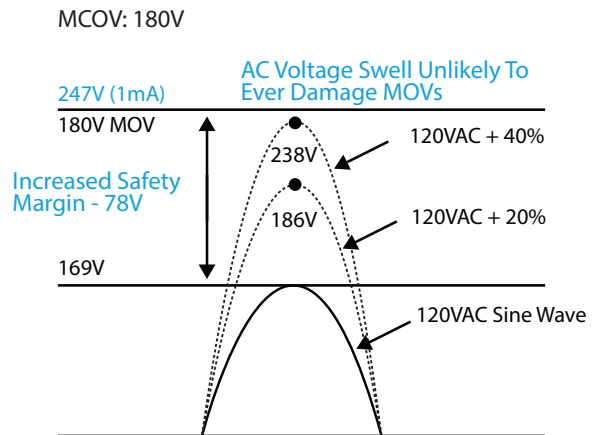


Transient: 6kV, 1.2/50µs - 3kA, 8/20µs

MCOV: 180V rms

Headroom: 50% (greatly improved)

"Let-Through" Voltage: 632V (24V lower clamping)

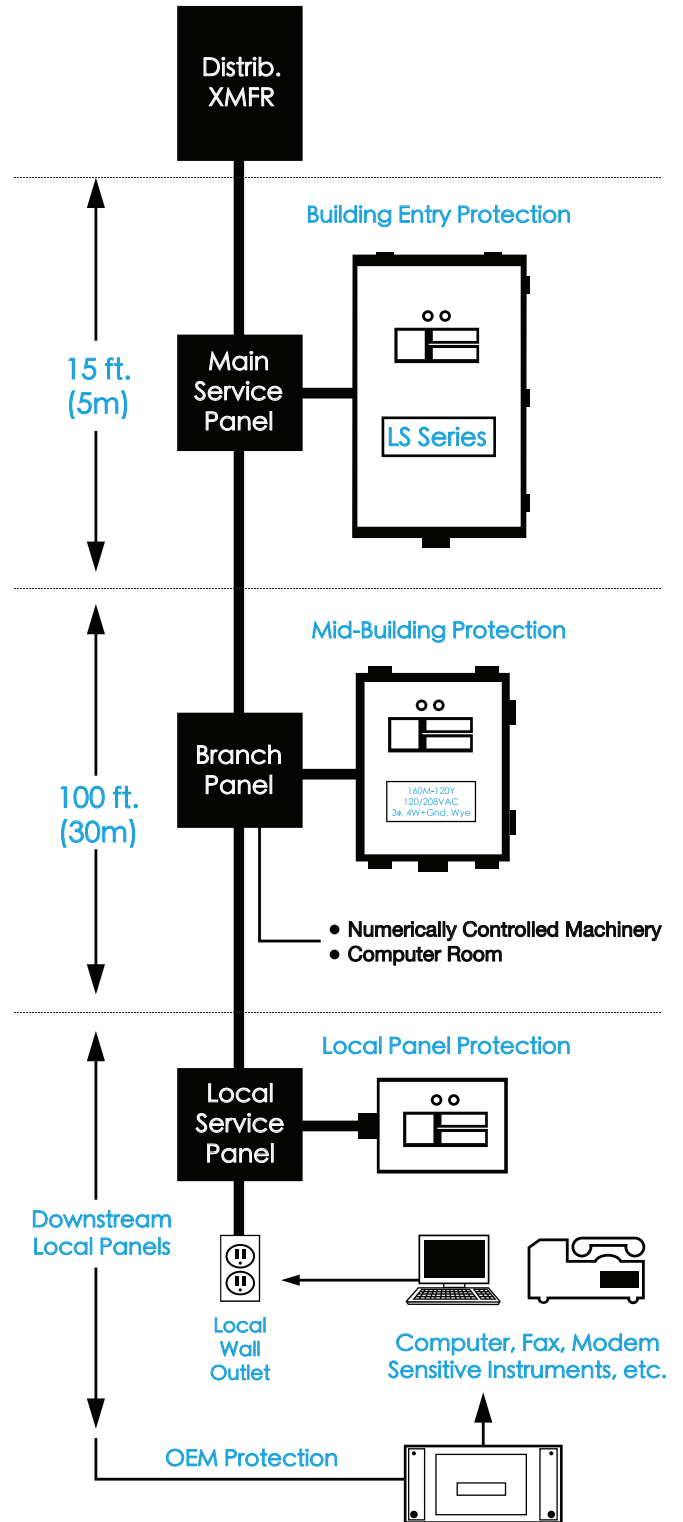


COORDINATED PROTECTION RECOMMENDATIONS

This chart shows a typical power distribution system within a building and the appropriate protectors for use throughout

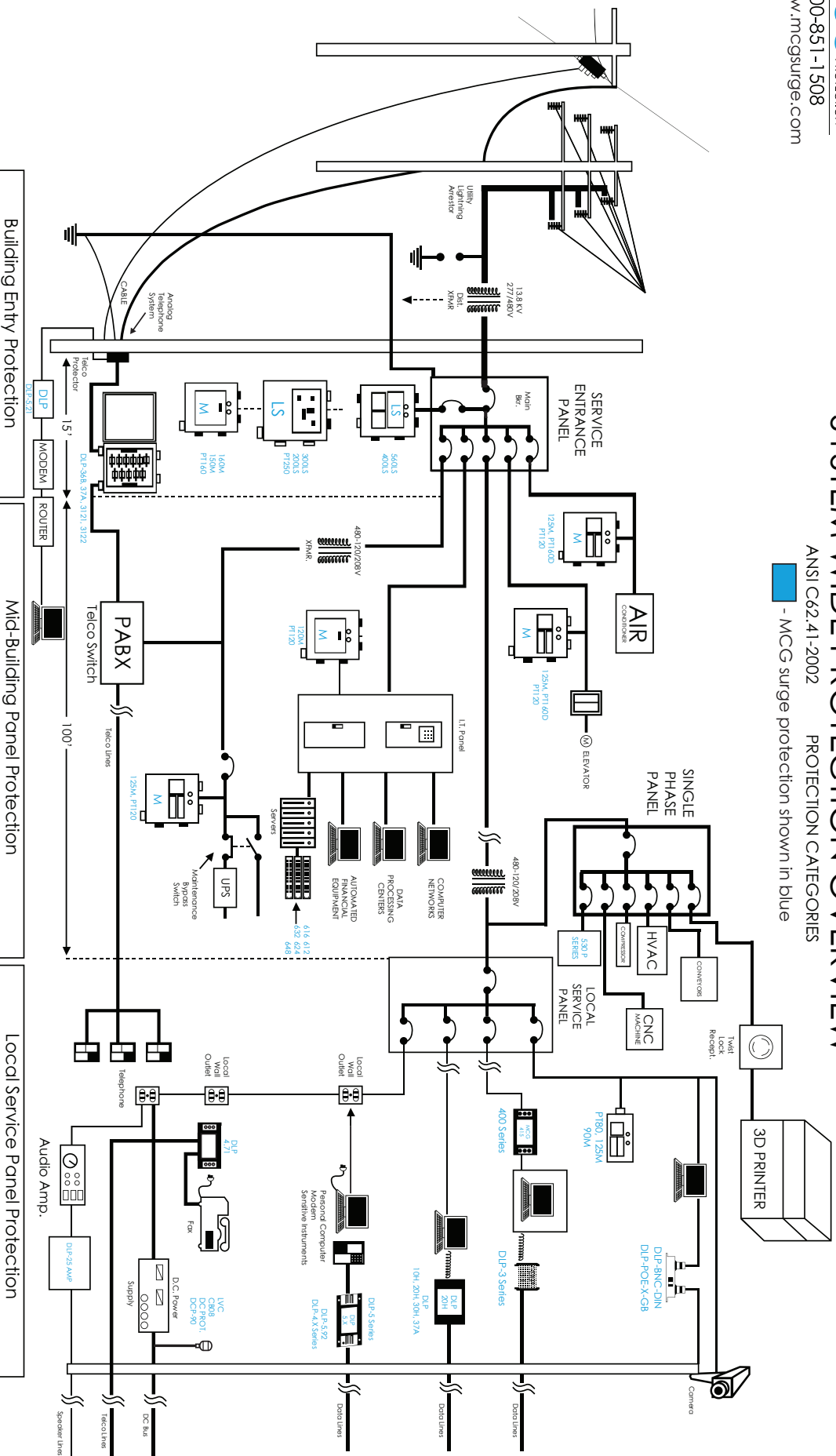
Heavy Exposure	Heavy Exposure
C62.41 Cat. C IEC Class II	C62.41 Cat. C IEC Class II
560 LS Exec. 300LS Exec.	200LS PT250 160M
560LS 300LS	
C62.41 Cat. B IEC Class III	C62.41 Cat. B IEC Class III
120LS 150M 120M	125M PT120
PT160 PT160D	
C62.41 Cat. A IEC Class III	C62.41 Cat. A IEC Class III
90M PT80	PT40
OEM Applications	
400 Series	

Utility Power



SYSTEM WIDE PROTECTION OVERVIEW

ANSI C62.41-2002 PROTECTION CATEGORIES
 - MCG surge protection shown in blue



Protection Category	IEEE Location	Surge Voltage	Surge Current	Surge Frequency
Building Entry Protection	1.2/50µs	8/20µs	20KV	10KA
Mid-Building Panel Protection	1.2/50µs	8/20µs	6KV	3KA
Local Service Panel Protection	0.5µs	100KHz	6KV	200A

**LS EXECUTIVE SERIES
WITH ENHANCED POWER AND
ENERGY METER**

METER SELECTION TABLE

**C.T.
Compatibility**

*

Most facilities incorporate surge protection devices and power/energy meters in tandem. MCG's new LS Executive series of AC Power Line Surge Protectors combine the brute force surge protection you know and trust along with a new onboard, revenue grade power and energy meter. The onboard meter is conveniently located on and accessed from the protector's front panel. Standard features include: protection redundancy (multiple fused surge paths per phase), thermally protected and 100% monitored varistors, modularity, bus bar construction, filtering, and powder coated steel enclosure.

The meter is factory prewired to the protector so once the protector is installed and wired, so is the meter. Once power is applied to the protector, the onboard meter automatically energizes. The LS Executive series with onboard meter safely and reliably protects and monitors your critical operation.

Along with the new onboard meter, MCG offers a complete line of high-quality current transducers (CTs). Most customers will want to utilize CTs for monitoring of advanced load current-based parameters like power and energy. Without the use of a current transducer, basic parameters are still monitored. These include primarily split core CTs, but we also offer solid core CTs and rope CTs. Simply order the protector with the particular meter you need, and order the CTs required for your application.

*Popular Meters: M1, M2, M3, M8, M9

	Meter Suffix	Split or Solid Core CTs	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11
	Meter Suffix	Rope CTs	M12	M13	M14	M15	M16	M17	M18	M19	M20	M21	M22
MEASUREMENT COMPATIBILITY - FULL DATA SET													
Bi-directional Energy Measurements										●	●	●	●
Power (3-phase total and per phase): Real (kW) Reactive (kVAR), and Apparent (kVA)			●	●	●	●	●	●	●	●	●	●	●
Power Factor: 3-phase average & per phase			●	●	●	●	●	●	●	●	●	●	●
Present Power Demand: Real (kW), Reactive (kVAR), and Apparent (kVA)			●	●	●	●	●	●	●	●	●	●	●
Import and Export totals of Present Power Demand: Real (kW), Reactive (kVAR), & Apparent (kVA)										●	●	●	●
Peak Power Demand: Real (kW), Reactive (kVAR), and Apparent (kVA)			●	●	●	●	●	●	●	●	●	●	●
Current (3-phase average and per phase)			●	●	●	●	●	●	●	●	●	●	●
Voltage: Line-Line and Line-Neutral (3-phase average and per phase)			●	●	●	●	●	●	●	●	●	●	●
Frequency			●	●	●	●	●	●	●	●	●	●	●
ANSI C12.20 0.2% accuracy, IEC 62053-22 Class 0.2S			●	●	●	●	●	●	●	●	●	●	●
Accumulated Net Energy: Real (kWh), Reactive (kVARh), and Apparent (kVAh)			●	●	●	●	●	●	●	●	●	●	●
Accumulated Real Energy by phase (kWh)			●	●	●	●	●	●	●	●	●	●	●
Import and Export Accumulators of Real and Apparent Energy										●	●	●	●
Reactive Energy Accumulators by Quadrant (3-phase total & per phase)										●	●	●	●
Demand Interval Configuration: Fixed or Rolling Block			●	●	●	●	●	●	●	●	●	●	●
Demand Interval Configuration: External Sync to Comms				●	●	●	●	●	●	●	●	●	●
DATA LOGGING													
Data Logging: 10 16-Bit Configurable (can include Date/Time) Data Buffers					●						●		
Data Logging: 3 Timestamped 32-Bit Configurable Data Buffers							●		●				●
Store up to 60 days of readings at 15-minute intervals					●		●		●		●		●
OUTPUTS													
Alarm Output (N.C.)			●	●	●	●		●		●	●	●	
1 Pulse Output (N.O.)				●	●					●	●		
2 Pulse Outputs (N.O.)			●										
RS-485 Serial (Modbus RTU Protocol)				●	●					●	●		
RS-485 Serial (BACnet MS/TP Protocol)								●	●			●	●
LON FT Serial (LonTalk Protocol)						●	●						
INPUTS													
2 Pulse Contact Accumulator Inputs							●		●				●
1 Pulse Contact Accumulator Input						●		●				●	

Current Transducer Options

Split Core 100A - 2400A (50/60 Hz Accuracy +/- 1% 10% to 100% (Rated Current))				
Popular Models	CT Part Number	Window Size L x W	Physical Size L x W	Lead
X	CT1-100A-.3V	1.2" x 1.3"	4.0" x 3.8"	6' Lead
X	CT1-200A-.3V	1.2" x 1.3"	4.0" x 3.8"	6' Lead
X	CT1-300A-.3V	1.2" x 1.3"	4.0" x 3.8"	6' Lead
	CT Part Number	Window Size L x W	Physical Size L x W	Lead
X	CT2-400A-.3V	2.9" x 2.5"	5.2" x 4.9"	6' Lead
X	CT2-600A-.3V	2.9" x 2.5"	5.2" x 4.9"	6' Lead
X	CT2-800A-.3V	2.9" x 2.5"	5.2" x 4.9"	6' Lead
	CT Part Number	Window Size L x W	Physical Size L x W	Lead
X	CT3-800A-.3V	5.5" x 2.5"	7.9" x 4.9"	6' Lead
X	CT3-1000A-.3V	5.5" x 2.5"	7.9" x 4.9"	6' Lead
X	CT3-1200A-.3V	5.5" x 2.5"	7.9" x 4.9"	6' Lead
X	CT3-1600A-.3V	5.5" x 2.5"	7.9" x 4.9"	6' Lead
X	CT3-2000A-.3V	5.5" x 2.5"	7.9" x 4.9"	6' Lead
X	CT3-2400A-.3V	5.5" x 2.5"	7.9" x 4.9"	6' Lead

0-5000 Amps (Accuracy +/-1% 50A to 5000A 50Hz to 1.5kHz)				
	CT Part Number	Core	Opening	Lead
X	CTA	12" Rope	3.85"	8' Lead
X	CTB	18" Rope	5.75"	8' Lead
X	CTC	24" Rope	7.65"	8' Lead
X	CTD	36" Rope	11.5"	8' Lead
	CT Part Number	Core	Opening	Lead
	CTE	12" Rope	3.85"	12' Lead
	CTF	18" Rope	5.75"	12' Lead
	CTG	24" Rope	7.65"	12' Lead
	CTH	36" Rope	11.5"	12' Lead

Split Core 5A - 600A (+/- 1% Accuracy 10% - 130% of Rated Current .333 VAC Output)				
Popular Models	CT Part Number	Window Size L x W	Physical Size L x W	Lead
	CT4-5A-.3V	.75" X .75"	2.0" X 2.1"	8' Lead
	CT4-10A-.3V	.75" X .75"	2.0" X 2.1"	8' Lead
	CT4-30A-.3V	.75" X .75"	2.0" X 2.1"	8' Lead
	CT4-50A-.3V	.75" X .75"	2.0" X 2.1"	8' Lead
	CT4-70A-.3V	.75" X .75"	2.0" X 2.1"	8' Lead
	CT4-100A-.3V	.75" X .75"	2.0" X 2.1"	8' Lead
	CT4-150A-.3V	.75" X .75"	2.0" X 2.1"	8' Lead
	CT4-200A-.3V	.75" X .75"	2.0" X 2.1"	8' Lead
	CT Part Number	Window Size L x W	Physical Size L x W	Lead
	CT5-50A-.3V	1.25" x 1.25"	3.35" x 3.25"	8' Lead
	CT5-70A-.3V	1.25" x 1.25"	3.35" x 3.25"	8' Lead
	CT5-100A-.3V	1.25" x 1.25"	3.35" x 3.25"	8' Lead
	CT5-150A-.3V	1.25" x 1.25"	3.35" x 3.25"	8' Lead
	CT5-200A-.3V	1.25" x 1.25"	3.35" x 3.25"	8' Lead
	CT5-250A-.3V	1.25" x 1.25"	3.35" x 3.25"	8' Lead
	CT5-300A-.3V	1.25" x 1.25"	3.35" x 3.25"	8' Lead
	CT5-400A-.3V	1.25" x 1.25"	3.35" x 3.25"	8' Lead
	CT5-600A-.3V	1.25" x 1.25"	3.35" x 3.25"	8' Lead

Split Core (1% Accuracy 10% to 100% of Rated Current 50/60Hz 50-200 Amp .333 VAC Output)				
	CT Part Number	Window Size	Physical Size L x W	Lead
X	CT6-50A-.3V	.4" ID	1.6" x 1"	6' Lead
X	CT6-100A-.3V	.6" ID	2.1" x 1.5"	6' Lead
X	CT6-200A-.3V	1.25" ID	2.8" x 1.5"	6' Lead

Series Solid Core (.5% Accuracy 5% to 120% of Rated Current 50/60Hz 50-400 Amp .333 VAC Output)				
	CT Part Number	Window Size	Physical Size L x W	Lead
X	CT7-50A-.3V	.4" ID	1.5" x 1.3"	6' Lead
X	CT7-100A-.3V	.4" ID	1.5" x 1.3"	6' Lead
X	CT7-200A-.3V	1" ID	2.6" x 2.3"	6' Lead
X	CT7-400A-.3V	1.25" ID	3.2" x 2.8"	6' Lead

MCG Surge

MODEL: 560LS Executive

Main Service Panel AC Power Line Protection with Enhanced Power/Energy Metering

The 560LS Executive Series provides 560,000A of rugged surge protection at a main service panel along with new on-board, revenue-grade power and energy meter. Each phase is guarded by three redundant protection paths – reassuring when sensitive equipment’s continuous operation is at stake. Twenty-year, no-nonsense warranty (five-year warranty on power meter); free protection modules for life. Series features mix-and-match options for a customized protector at stock prices.

Standout Feature: Onboard Power Meter

Features:

- 560LS: I peak=560,000A/Phase (8 x 20µs waveform)
- Revenue-grade power and energy meter
- UL Listed 1449 4th 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
- Upgraded front panel with surge event counter, beeper and status relay (1 form C contacts)
- NEMA 1, Powder Coated Steel Enclosure

Mix and Match Options Available:

- Disconnect Switch
- Low Impedance Micro-Z cable (10 AWG)
- Flush-mount Kit.

Made in the
USA



I_{peak} = 560,000A

UL 1449 4th 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-MX

560LS	277Y	DS	MX
SERIES	VOLTAGE	DISCONNECT SWITCH*	METER**

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

*optional **standard

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, 4th Edition

MCG Surge - 560 LS Executive 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: 1240kA; 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: 35,328 - 151,200J
 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 +50 degrees C/-40 degrees to +85 degrees C
 Enclosure: NEMA 1, 14 gauge steel, powder coated
 Dimensions: 17" x 15" x 7.75" (432 x 381 x 197mm)
 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: 49 lbs. (15.9 kg)
 UL File Number: E322161
 UL Certification: UL Listed to 1449 4th Edition, UL96A Compliant
 ARRA Certification: Complies with ARRA 1605 requirements

MODEL 560LS Executive	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	2500	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.

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

MCG Surge

MODEL: 400LS Executive

Main Service Panel AC Power Line Protection with Enhanced Power/Energy Metering

The 400LS Executive Series provides 400,000A of rugged surge protection at a main service panel along with new on-board, revenue-grade power and energy meter. Each phase is guarded by three redundant protection paths – reassuring when sensitive equipment’s continuous operation is at stake. Twenty-year, no-nonsense warranty (five-year warranty on power meter); free protection modules for life. Series features mix-and-match options for a customized protector at stock prices.

Standout Feature: Onboard Power Meter

Features:

- 400LS: I peak=400,000A/Phase (8 x 20µs waveform)
- Revenue-grade power and energy meter
- UL Listed 1449 4th 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
- Upgraded front panel with surge event counter, beeper and status relay (1 form C contacts)
- NEMA 1, Powder Coated Steel Enclosure

Mix and Match Options Available:

- Disconnect Switch
- Low Impedance Micro-Z cable (10 AWG)
- Flush-mount Kit.

Made in the
USA



I_{peak} = 400,000A

UL 1449 4th 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-MX

400LS	277Y	DS	MX
SERIES	VOLTAGE	DISCONNECT SWITCH*	METER**

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

*optional **standard

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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, 4th Edition

MCG Surge - 400 LS Executive 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: 24,496 -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): 0 degrees to +50 degrees C/-40 degrees to +85 degrees C
 Enclosure: NEMA 1, 14 gauge steel, powder coated
 Dimensions: 17" x 15" x 7.75" (432 x 381 x 197mm)
 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: 46 lbs. (20.8 kg)
 UL File Number: E322161
 UL Certification: UL Listed to 1449 4th Edition, UL96A Compliant
 ARRA Certification: Complies with ARRA 1605 requirements

MODEL 400LS Executive	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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MCG Surge

MODEL: 300LS Executive

Main Service Panel AC Power Line Protection with Enhanced Power/Energy Metering

The 300LS Executive Series provides 300,000A of rugged surge protection at a main service panel along with new on-board, revenue-grade power and energy meter. Each phase is guarded by three redundant protection paths – reassuring when sensitive equipment’s continuous operation is at stake. Twenty-year, no-nonsense warranty (five-year warranty on power meter); free protection modules for life. Series features mix-and-match options for a customized protector at stock prices.

Standout Feature: Onboard Power Meter

Features:

- 300LS: I peak=300,000A/Phase (8 x 20µs waveform)
- Revenue-grade power and energy meter
- UL Listed 1449 4th Ed., NEMA LS1-1992
- Seven 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
- Upgraded front panel with surge event counter, beeper and status relay (1 form C contacts)
- NEMA 1, Powder Coated Steel Enclosure

Mix and Match Options Available:

- Disconnect Switch
- Low Impedance Micro-Z cable (10 AWG)
- Flush-mount Kit.

Made in the
USA



I_{peak} = 300,000A

UL 1449 4th 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: 300LS-277Y-DS-MX

300LS	277Y	DS	MX
SERIES	VOLTAGE	DISCONNECT SWITCH*	METER**

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

*optional **standard

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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, 4th Edition

MCG Surge - 300 LS Executive 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 - 300kA.
 Surge Life/Phase(8/20µs): 10,000 Events: 13kA.
 Surge Current/Mode (8/20µs): L-N: 170kA; L-G: 130kA; N-G: 120kA; L-L: 300kA
 Surge Current/Mode, "D" Models (8/20µs): L-G: 300kA; L-L: 300kA
 Response Time: <5 ns
 Energy Absorption (8/20µs) in Joules: 17,664-75,600J
 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 +50 degrees C/-40 degrees to +85 degrees C
 Enclosure: NEMA 1, 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: 37 lbs. (16.8 kg)
 UL File Number: E322161
 UL Certification: UL Listed to 1449 4th Edition, UL96A Compliant
 ARRA Certification: Complies with ARRA 1605 requirements

MODEL 300LS Executive	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	490	580
-120T	120/240VAC, 1Φ, 3W+G	900	900	900	1200	520	614
-120Y	120/208VAC, 3Φ, 4W+G, Wye	900	900	900	1200	520	614
-220Y	220/380VAC, 3Φ, 4W+G, Wye	1500	1500	1500	2000	1008	1164
-220S	220VAC, 1Φ, 2W+G	1500	1500	1500	n/a	960	1110
-240Y	240/415VAC, 3Φ, 4W+G, Wye	1500	1500	1500	2000	1008	1164
-240S	240VAC, 1Φ, 2W+G	1500	1500	1500	n/a	960	1110
-277Y	277/480VAC, 3Φ, 4W+G, Wye	1500	1500	1500	2000	1008	1164
-347Y	347/600VAC, 3Φ, 4W+G, Wye	1800	1800	1500	2500	1280	1410
-240DCT*	240/120/120VAC, 3Φ, 4W+G	900/1500***	900/1500***	900	2000/1800** 1200/2000**	1008/520	1164/614
-240D	240VAC, 3Φ, 3W+G, Delta	n/a	1500	n/a	2000	1008 (L-G)	1164
-480D	480VAC, 3Φ, 3W+G, Delta	n/a	2000	n/a	4000	1566 (L-G)	1766
-600D	600VAC, 3Φ, 3W+G, Delta	n/a	2500	n/a	4000	1776 (L-G)	1970

*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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MCG Surge

MODEL: 200LS Executive

Main Service Panel AC Power Line Protection with Enhanced Power/Energy Metering

The 200LS Executive Series provides 200,000A of rugged surge protection at a main service panel along with new on-board, revenue-grade power and energy meter. Each phase is guarded by three redundant protection paths – reassuring when sensitive equipment’s continuous operation is at stake. Twenty-year, no-nonsense warranty (five-year warranty on power meter); free protection modules for life. Series features mix-and-match options for a customized protector at stock prices.

Standout Feature: Onboard Power Meter

Features:

- 200LS: I peak=200,000A/Phase (8 x 20µs waveform)
- Revenue-grade power and energy meter
- UL Listed 1449 4th Ed., NEMA LS1-1992
- Five 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
- Upgraded front panel with surge event counter, beeper and status relay (1 form C contacts)
- NEMA 1, Powder Coated Steel Enclosure

Mix and Match Options Available:

- Disconnect Switch
- Low Impedance Micro-Z cable (10 AWG)
- Flush-mount Kit.

Made in the
USA



Ipeak = 200,000A

UL 1449 4th 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: 200LS-277Y-DS-MX

200LS	277Y	DS	MX
SERIES	VOLTAGE	DISCONNECT SWITCH*	METER**

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

*optional **standard

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Specifications

- ANSI / IEEE C62.41-2002
- IEC 61643-1-1998
- UL 1449, 4th Edition

MCG Surge - 200 LS Executive 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 - 200kA.
 Surge Life/Phase(8/20µs): 10,000 Events: 10kA.
 Surge Current/Mode (8/20µs): L-N: 120kA; L-G: 80kA; N-G: 120kA; L-L: 200kA
 Surge Current/Mode, "D" Models (8/20µs): L-G: 200kA; L-L: 200kA
 Response Time: <5 ns
 Energy Absorption (8/20µs) in Joules: 13,248 - 54,000J
 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): 0 degrees to +50 degrees C/-40 degrees to +85 degrees C
 Enclosure: NEMA 1, 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: 35 lbs. (15.9 kg)
 UL File Number: E322161
 UL Certification: UL Listed to 1449 4th Edition, UL96A Compliant
 ARRA Certification: Complies with ARRA 1605 requirements

MODEL 200LS Executive	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	506	610
-120T	120/240VAC, 1Φ, 3W+G	900	900	800	1200	534	644
-120Y	120/208VAC, 3Φ, 4W+G, Wye	900	900	800	1200	534	644
-220Y	220/380VAC, 3Φ, 4W+G, Wye	1500	1500	1500	2000	1050	1212
-220S	220VAC, 1Φ, 2W+G	1500	1500	1500	n/a	994	1150
-240Y	240/415VAC, 3Φ, 4W+G, Wye	1500	1500	1500	2000	1050	1212
-240S	240VAC, 1Φ, 2W+G	1500	1500	1500	n/a	994	1150
-277Y	277/480VAC, 3Φ, 4W+G, Wye	1500	1500	1500	2000	1050	1212
-347Y	347/600VAC, 3Φ, 4W+G, Wye	1800	1800	1800	2500	1320	1510
-240DCT*	240/120/120VAC, 3Φ, 4W+G	900/1500***	900/1500***	800	2000/1800** 1200/2000**	1050/534	1212/644
-240D	240VAC, 3Φ, 3W+G, Delta	n/a	1500	n/a	2000	1050 (L-G)	1212
-480D	480VAC, 3Φ, 3W+G, Delta	n/a	2000	n/a	4000	1598 (L-G)	1800
-600D	600VAC, 3Φ, 3W+G, Delta	n/a	2500	n/a	4000	1804 (L-G)	2020

*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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MCG Surge

MODEL: 120LS Executive

Branch Panel AC Power Line Protection with Enhanced Power/Energy Metering

The 120LS Executive Series provides 120,000A of rugged surge protection at a branch service panel along with new on-board, revenue-grade power and energy meter. Each phase is guarded by three redundant protection paths – reassuring when sensitive equipment’s continuous operation is at stake. Twenty-year, no-nonsense warranty (five-year warranty on power meter); free protection modules for life. Series features mix-and-match options for a customized protector at stock prices.

Standout Feature: Onboard Power Meter

Features:

- 120LS: I peak=120,000A/Phase (8 x 20µs waveform)
- Revenue-grade power and energy meter
- UL Listed 1449 4th 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
- Upgraded front panel with surge event counter, beeper and status relay (1 form C contacts)
- NEMA 1, Powder Coated Steel Enclosure

Mix and Match Options Available:

- Disconnect Switch
- Low Impedance Micro-Z cable (10 AWG)
- Flush-mount Kit.

Made in the
USA



I_{peak} = 120,000A

UL 1449 4th 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-MX

120LS	277Y	DS	MX
SERIES	VOLTAGE	DISCONNECT SWITCH*	METER**

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

*optional **standard

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Specifications

- ANSI / IEEE C62.41-2002
- IEC 61643-1-1998
- UL 1449, 4th Edition

MCG Surge - 120 LS Executive 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 - 120kA.
 Surge Life/Phase(8/20µs): 10,000 Events: 10kA.
 Surge Current/Mode (8/20µs): L-N: 80kA; L-G: 40kA; N-G: 120kA; L-L: 200kA
 Surge Current/Mode, "D" Models (8/20µs): L-G: 120kA; L-L: 120kA
 Response Time: <5 ns
 Energy Absorption (8/20µs) in Joules: 13,248 - 54,000J
 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): 0 degrees to +50 degrees C/-40 degrees to +85 degrees C
 Enclosure: NEMA 1, 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: 32 lbs. (14.5 kg)
 UL File Number: E322161
 UL Certification: UL Listed to 1449 4th Edition, UL96A Compliant
 ARRA Certification: Complies with ARRA 1605 requirements

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

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 4th 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_{peak} = 560,000A

UL 1449 4th 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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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, 4th 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 4th 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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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 4th 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 1, 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 4th 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

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Specifications

- ANSI / IEEE C62.41-2002
- IEC 61643-1-1998
- UL 1449, 4th 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 1, 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 4th 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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MCG Surge

MODEL: 300LS

Service Entrance Surge Protector

The 300LS Series provides 300,000A of robust surge protection for rugged and reliable protection at the main service entrance of large facilities. Each phase is guarded by 7 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:

- 300LS: I peak=300,000A/Phase (8 x 20µs waveform)
- UL Listed 1449 4th Ed., NEMA LS1-1992
- Seven 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 1, 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} = 300,000A

UL 1449 4th 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: 300LS-277Y-DS-UFP-SS

300LS	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

Specifications

- ANSI / IEEE C62.41-2002
- IEC 61643-1-1998
- UL 1449, 4th Edition

MCG Surge - 300 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 - 300kA.
 Surge Life/Phase(8/20µs): 10,000 Events: 13kA.
 Surge Current/Mode (8/20µs): L-N: 170kA; L-G: 130kA; N-G: 120kA; L-L: 300kA
 Surge Current/Mode, "D" Models (8/20µs): L-G: 300kA; L-L: 300kA
 Response Time: <5 ns
 Energy Absorption (8/20µs) in Joules: 17,664 - 75,600J
 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 1, 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: 35 lbs. (16.7 kg)
 UL File Number: E322161
 UL Certification: UL Listed to 1449 4th Edition, UL96A Compliant
 ARRA Certification: Complies with ARRA 1605 requirements

MODEL 300LS	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	490	580
-120T	120/240VAC, 1Φ, 3W+G	900	900	900	1200	520	614
-120Y	120/208VAC, 3Φ, 4W+G, Wye	900	900	900	1200	520	614
-220Y	220/380VAC, 3Φ, 4W+G, Wye	1500	1500	1500	2000	1008	1164
-220S	220VAC, 1Φ, 2W+G	1500	1500	1500	n/a	960	1110
-240Y	240/415VAC, 3Φ, 4W+G, Wye	1500	1500	1500	2000	1008	1164
-240S	240VAC, 1Φ, 2W+G	1500	1500	1500	n/a	960	1110
-277Y	277/480VAC, 3Φ, 4W+G, Wye	1500	1500	1500	2000	1008	1164
-347Y	347/600VAC, 3Φ, 4W+G, Wye	1800	1800	1500	2500	1280	1410
-240DCT*	240/120/120VAC, 3Φ, 4W+G	900/1500***	900/1500***	900	2000/1800** 1200/2000**	1008/520	1164/614
-240D	240VAC, 3Φ, 3W+G, Delta	n/a	1500	n/a	2000	1008 (L-G)	1164
-480D	480VAC, 3Φ, 3W+G, Delta	n/a	2000	n/a	4000	1566 (L-G)	1766
-600D	600VAC, 3Φ, 3W+G, Delta	n/a	2500	n/a	4000	1776 (L-G)	1970

*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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MCG Surge

MODEL: 200LS

Main Service Panel Surge Protector

The 200LS Series provides 200,000A of surge protection for rugged and reliable protection at the main service panel. Each phase is guarded by 5 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:

- 200LS: I peak=200,000A/Phase (8 x 20µs waveform)
- UL Listed 1449 4th Ed., NEMA LS1-1992
- Five 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 1, 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} = 200,000A

UL 1449 4th 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: 200LS-277Y-DS-UFP-SS

200LS	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

Specifications

- ANSI / IEEE C62.41-2002
- IEC 61643-1-1998
- UL 1449, 4th Edition

MCG Surge - 200 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 - 200kA.
 Surge Life/Phase(8/20µs): 10,000 Events: 10kA.
 Surge Current/Mode (8/20µs): L-N: 120kA; L-G: 80kA; N-G: 120kA; L-L: 200kA
 Surge Current/Mode, "D" Models (8/20µs): L-G: 200kA; L-L: 200kA
 Response Time: <5 ns
 Energy Absorption (8/20µs) in Joules: 13,248 - 54,00J
 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 1, 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: 33 lbs. (15 kg)
 UL File Number: E322161
 UL Certification: UL Listed to 1449 4th Edition, UL96A Compliant
 ARRA Certification: Complies with ARRA 1605 requirements

MODEL 200LS	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	506	610
-120T	120/240VAC, 1Φ, 3W+G	900	900	800	1200	534	644
-120Y	120/208VAC, 3Φ, 4W+G, Wye	900	900	800	1200	534	644
-220Y	220/380VAC, 3Φ, 4W+G, Wye	1500	1500	1500	2000	1050	1212
-220S	220VAC, 1Φ, 2W+G	1500	1500	1500	n/a	994	1150
-240Y	240/415VAC, 3Φ, 4W+G, Wye	1500	1500	1500	2000	1050	1212
-240S	240VAC, 1Φ, 2W+G	1500	1500	1500	n/a	994	1150
-277Y	277/480VAC, 3Φ, 4W+G, Wye	1500	1500	1500	2000	1050	1212
-347Y	347/600VAC, 3Φ, 4W+G, Wye	1800	1800	1800	2500	1320	1510
-240DCT*	240/120/120VAC, 3Φ, 4W+G	900/1500***	900/1500***	800	2000/1800** 1200/2000**	1050/534	1212/644
-240D	240VAC, 3Φ, 3W+G, Delta	n/a	1500	n/a	2000	1050 (L-G)	1212
-480D	480VAC, 3Φ, 3W+G, Delta	n/a	2000	n/a	4000	1598 (L-G)	1800
-600D	600VAC, 3Φ, 3W+G, Delta	n/a	2500	n/a	4000	1804 (L-G)	2020

*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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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 4th 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 1, 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 4th 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

Specifications

- ANSI / IEEE C62.41-2002
- IEC 61643-1-1998
- UL 1449, 4th 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 1, 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 4th 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.

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

MCG Surge

MODELS: 160M•120M

Main/Branch Panel Surge Protector

The Surge Free 160M and 120M offer powerful modular protection at the main or branch panels for most applications. Computers, sensitive business equipment and other high tech systems are guarded from high speed transients. All models have extended headroom and a twenty-year warranty.

Standout Feature:

- Economical, compact, and modular

Features:

- Powerful, redundant surge handling capability
Model 160M: $I_p=160kA$
Model 120M: $I_p=120kA$
- UL Listed 1449 4th Ed.
- Field-replaceable, high capability 40mm protection modules
- High-performance, low inductance Micro-Z installed cable
- Event counter and front panel LEDs for status indication
- LED internal diagnostics for on-site maintenance
- Audible fault alarm with mute switch
- Safety deadfront disconnect. (Not available in Delta)
- Filtering is standard
- NEMA 4, Powder Coated Steel Enclosure
- Optional NEMA 4X Stainless Steel Enclosure

Made in the

USA



$I_{peak} = 160,000/120,000A$

UL 1449 4th Edition Listed

20-Year Protector Warranty
Lifetime Module Replacement

Filter Attenuation (MIL STD 220A (50Ohm))

db	120VAC	240VAC	277VAC
-30db	50kHz	50kHz	80kHz
-40db	130kHz	130kHz	180kHz
-50db	195kHz	195kHz	270kHz
-60db	230kHz	230kHz	300kHz

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, 5kA AIC (Delta models only)
Surge Current/Phase (8/20 μ s):	1 Event - 160M: 160kA, 120M: 120kA.
Surge Life/Phase(8/20 μ s):	10,000 Events - 160M: 6kA, 120M: 4kA
Surge Current/Mode (8/20 μ s),160M:	L-N: 80kA; L-G: 80kA; N-G: 80kA; L-L: 160kA
Surge Current/Mode (8/20 μ s),120M:	L-N: 80kA; L-G: 40kA; N-G: 80kA; L-L: 120kA
Surge Current/Mode (8/20 μ s),160M (Delta):	L-L: 160kA; L-G: 80kA
Surge Current/Mode (8/20 μ s),120M (Delta):	L-L: 120kA; L-G: 80kA
Response Time:	<5 ns
Energy Absorption (8/20 μ s) in Joules:	10,300J-37,400J (160M), 8,100J-28,100J (120M)
Status Indicators:	LED Status Indicators, Remote Alarm, Event Counter, Audible Alarm, Protected Dry Contacts
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 1, 14 gauge steel, powder coated
Dimensions:	12" x 10" x 5" (305 x 254 x 127mm)
Mounting:	12.75" x 8"/.313" ID - 4 holes, 324 x 203mm/7.9mm ID - 4 holes
Conduit Fitting Hole:	1" rain tight hub
Weight:	160M: 23 lbs., (11kg); 120M: 17 lbs., (7.7kg)
UL File Number:	E322161
UL Certification:	UL Listed to 1449 4th Edition, UL96A Compliant
ARRA Certification:	Complies with ARRA 1605 requirements

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: 120/160M

- ANSI / IEEE C62.41-2002
- IEC 61643-1-1998
- UL 1449, 4th Edition

MODEL 160M	SERVICE	VPR L-N	VPR L-G	VPR N-G	VPR L-L	16kV, 8kA** Let-Thru V, L-N
-120Y	120/208VAC, 3Φ, 4W+G	800	900	700	1500	704
-120T	120/240VAC, 1Φ, 3W+G	800	900	700	1500	704
-120S	120VAC, 1Φ, 2W+G	800	900	700	n/a	704
-220Y	220/380VAC, 3Φ, 4W+G	1500	1500	1200	2500	1320
-220S	220VAC, 1Φ, 2W+G	1500	1500	1200	n/a	1320
-240Y	240/415VAC, 3Φ, 4W+G	1500	1500	1200	2500	1320
-240S	240VAC, 1Φ, 2W+G	1500	1500	1200	n/a	1320
-240DCT*	240/120/120VAC, 3Φ, 4W+G	800/1500	900/1500	700	1500/2500	704/1320
-277Y	277/480VAC, 3Φ, 4W+G	1500	1500	1200	2500	1320
-277S	277VAC, 1Φ, 2W+G	1500	1500	1200	n/a	1320
-240D	240VAC, 3Φ, 3W+G	n/a	1500	n/a	1500	1320 (L-G)
-380D	280VAC, 3Φ, 3W+G	n/a	1800	n/a	1800	1480 (L-G)
-480D	480VAC, 3Φ, 3W+G	n/a	1800	n/a	2000	2080 (L-G)

*High-leg Delta Center Tapped **Actual Measurements with 6" lead

Energy Absorption (8X20μs) in joules: 10,300J - 37,400J

MODEL 120M	SERVICE	VPR L-N	VPR L-G	VPR N-G	VPR L-L	10kV, 5kA** Let-Thru V, L-N
-120Y	120/208VAC, 3Φ, 4W+G	800	900	700	1200	560
-120T	120/240VAC, 1Φ, 3W+G	800	900	700	1200	560
-120S	120VAC, 1Φ, 2W+G	800	900	700	n/a	560
-220Y	220/380VAC, 3Φ, 4W+G	1500	1500	1200	2500	1140
-220S	220VAC, 1Φ, 2W+G	1500	1500	1200	n/a	1140
-240Y	240/415VAC, 3Φ, 4W+G	1500	1500	1200	2500	1140
-240S	240VAC, 1Φ, 2W+G	1500	1500	1200	n/a	1140
-240DCT*	240/120/120VAC, 3Φ, 4W+G	800/1500	900/1500	700	1500/2500	560/1140
-277Y	277/480VAC, 3Φ, 4W+G	1500	1500	1200	2500	1140
-277S	277VAC, 1Φ, 2W+G	1500	1500	1200	n/a	1140
-240D	240VAC, 3Φ, 3W+G	n/a	1500	n/a	1500	1140 (L-G)
-380D	280VAC, 3Φ, 3W+G	n/a	1800	n/a	1800	1280 (L-G)
-480D	480VAC, 3Φ, 3W+G	n/a	1800	n/a	2000	1800 (L-G)

*High-leg Delta Center Tapped **Actual Measurements with 6" lead

Energy Absorption (8X20μs) in joules: 8,100J - 28,100J

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.

MCG Surge

MODELS: 150M•125M•90M

Branch Panel Surge Protector

The Surge Free 150M, 125M, and 90M offer powerful modular protection at the branch panel. It is ideal when extensive diagnostics are not required, but brute-force surge protection is a #1 priority. The 150/125/90M models are backed by a twenty-year, no-nonsense warranty.

Standout Feature:

- Economical, compact, and modular

Features:

- I peak=160,000A/Phase (150M)
120,000A/Phase (125M)
80,000A/Phase (90M)
- Two times redundant surge paths per phase
- Field-replaceable modules
- Front panel LEDs for status indication
- Audible fault alarm with mute switch (optional)
- Filtering is standard
- Easy installation - 30 minutes or less
- All modes protected: L-G, L-N, L-L, N-G
- NEMA 1, Powder Coated Steel Enclosure
- Optional outdoor non-metallic enclosure kit (NEMA 4X)

Made in the

USA



I_{peak} = 160,000/120,000/80,000A

UL 1449 4th 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

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 - 150M: 160kA; 125M: 120kA; 90M: 80kA

Surge Life/Phase(8/20μs): 10,000 Events - 150M: 6kA, 125M: 4kA, 90M: 2kA

Surge Current/Mode (8/20μs) 150M: L-N: 160kA; L-G: 80kA; N-G: 80kA; L-L: 160kA

Surge Current/Mode (8/20μs) 125M: L-N: 120kA; L-G: 80kA; N-G: 80kA; L-L: 120kA

Surge Current/Mode (8/20μs) 90M: L-N: 120kA; L-G: 80kA; N-G: 80kA; L-L: 80kA

Response Time: <5 ns

Energy Absorption (8/20μs) in Joules: 35,328 - 151,200J

Status Indicators: LED Status Indicators, Protected Dry Contacts

Operating Altitude: 13,000ft. (4000m)

Temp. (Operating/Storage): -40 degrees to +70 degrees C/-40 degrees to +85 degrees C

Enclosure: NEMA 1, 14 gauge steel, powder coated

Dimensions: 8" x 8" x 4" (203mm x 203mm x 120mm)

Mounting: 8.75" x 6".313" ID - 4 holes, 222mm x 152mm/7.9mm ID - 4 holes

Cable Connection: #10 AWG Cable

Weight: 150M: 11 lbs., (5kg); 125M: 10 lbs., (4.58kg), 90M: 9 lbs., (4.1kg)

UL File Number: E322161

UL Certification: UL Listed to 1449 4th Edition

ARRA Certification: Complies with ARRA 1605 requirements

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: 150/125/90M

- ANSI / IEEE C62.41-2002
- IEC 61643-1-1998
- UL 1449, 4th Edition

MODEL 150M	SERVICE	VPR L-N	VPR L-G	VPR N-G	VPR L-L	16kV (1.2X50µs) 8kA (8X20µs)
-120Y	120/208VAC, 3Φ, 4W+G	700	1200	700	1200	584
-120T	120/240VAC, 1Φ, 3W+G	700	1200	700	1200	584
-120S	120VAC, 1Φ, 2W+G	700	1200	700	n/a	584
-220Y	220/380VAC, 3Φ, 4W+G	1200	2500	1200	2500	1096
-220S	220VAC, 1Φ, 2W+G	1200	2500	1200	n/a	1096
-240Y	240/415VAC, 3Φ, 4W+G	1200	2500	1200	2500	1096
-240S	240VAC, 1Φ, 2W+G	1200	2500	1200	n/a	1096
-240DCT*	240/120/120VAC, 3Φ, 4W+G	700/1200	1200/2500	700	1200/1800	1096/584
-277Y	277/480VAC, 3Φ, 4W+G	1200	2500	1200	2500	1096
-277S	277VAC, 1Φ, 2W+G	1200	2500	1200	n/a	1096

MODEL 125M	SERVICE	VPR L-N	VPR L-G	VPR N-G	VPR L-L	10kV (1.2X50µs) 5kA (8X20µs)
-120Y	120/208VAC, 3Φ, 4W+G	700	1500	700	1200	490
-120T	120/240VAC, 1Φ, 3W+G	700	1500	700	1200	490
-120S	120VAC, 1Φ, 2W+G	700	1500	700	n/a	490
-220Y	220/380VAC, 3Φ, 4W+G	1200	2500	1200	2500	1050
-220S	220VAC, 1Φ, 2W+G	1200	2500	1200	n/a	1050
-240Y	240/415VAC, 3Φ, 4W+G	1200	2500	1200	2500	1050
-240S	240VAC, 1Φ, 2W+G	1200	2500	1200	n/a	1050
-240DCT*	240/120/120VAC, 3Φ, 4W+G	700/1200	1200/2500	700	1200/1800	1050/490
-277Y	277/480VAC, 3Φ, 4W+G	1200	2500	1200	2500	1050
-277S	277VAC, 1Φ, 2W+G	1200	2500	1200	n/a	1050

MODEL 125M	SERVICE	VPR L-N	VPR L-G	VPR N-G	VPR L-L	10kV (1.2X50µs) 5kA (8X20µs)
-120Y	120/208VAC, 3Φ, 4W+G	700	1500	800	1200	520
-120T	120/240VAC, 1Φ, 3W+G	700	1500	800	1200	520
-120S	120VAC, 1Φ, 2W+G	700	1500	800	n/a	520
-220Y	220/380VAC, 3Φ, 4W+G	1200	2500	1200	2500	920
-220S	220VAC, 1Φ, 2W+G	1200	2500	1200	n/a	920
-240Y	240/415VAC, 3Φ, 4W+G	1200	2500	1200	2500	920
-240S	240VAC, 1Φ, 2W+G	1200	2500	1200	n/a	920
-240DCT*	240/120/120VAC, 3Φ, 4W+G	700/1200	1200/2500	800	1200/1800	520/920
-277Y	277/480VAC, 3Φ, 4W+G	1200	2500	1200	2500	920
-277S	277VAC, 1Φ, 2W+G	1200	2500	1200	n/a	920

*High-leg Delta Center Tapped **High-Leg

MCG Surge

MODELS: PT250•160•120

Critical Load Surge Protector

Taking compact protectors to the next level, MCG's PT Series is the most advanced non-modular surge protector that money can buy. Within its compact 10x10" enclosure, there are up to 20 high-energy, thermally protected varistors packed inside. These high performance varistors are typically only found in much higher priced protectors. The PT Series guards small to medium sized electrical panels. Delta models also available, contact the factory for more information.

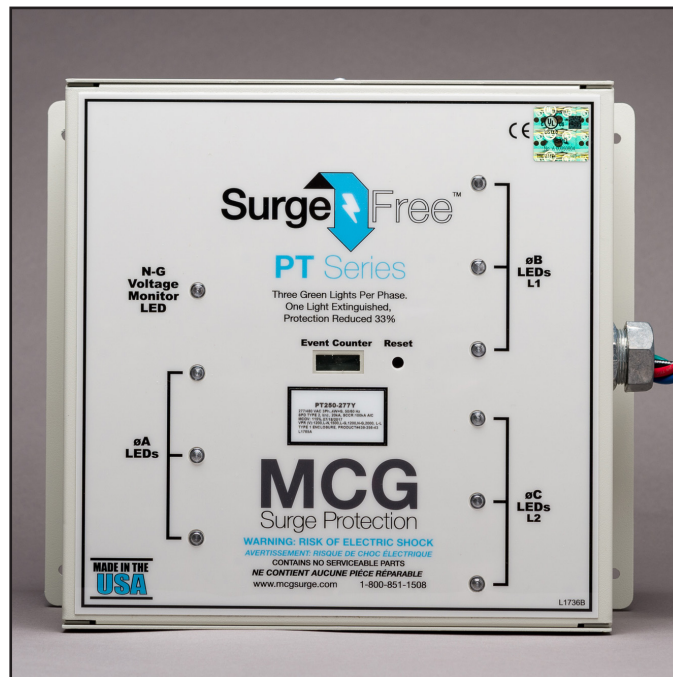
Standout Feature: Thermally-protected MOVs

Features:

- I_{peak}=250,000A/Phase (PT250)
160,000A/Phase (PT160)
120,000A/Phase (PT120)
- Redundancy: 3x (PT250), 2x (PT160/120)
- Thermally protected varistors with integral fuse
- Surge event counter optional (Standard on PT250)
- Remote 1 Form C relay contacts with status LED
- Neutral-Ground Voltage Monitor LED
- All modes protected: L-G, L-N, L-L, N-G
- Front panel status monitoring
- 10 AWG connection cable
- NEMA 1, Powder Coated Steel Enclosure
- DIN-Rail mounting kit available
- Optional outdoor non-metallic enclosure kit (NEMA 4X)

Made in the

USA



I_{peak} = 250,000/160,000/120,000A

UL 1449 4th Edition Listed

20-Year Warranty

Filter Attenuation (MIL STD 220A (50Ohm))

db	120VAC	240VAC	277VAC
-30db	50kHz	50kHz	80kHz
-40db	130kHz	130kHz	180kHz
-50db	195kHz	195kHz	270kHz
-60db	230kHz	230kHz	300kHz

SPD Type:	Type 2
I(n):	20kA (PT250 & PT160), 10kA (PT120)
Maximum Continuous Operating VAC (MCOV):	115% Rated Line Voltage
Varistor MCOV:	125% Rated Line Voltage Minimum
SCCR:	100kA AIC
Surge Current/Phase (8/20μs):	PT250 1 Event: 250kA; PT160 1 Event: 160kA; PT120 1 Event: 120kA
Surge Life/Phase(8/20μs):	PT250 10,000 Events: 12kA; PT160 10,000 Events: 6kA; PT120 10,000 Events: 4.5kA
Surge Current/Mode (8/20μs) PT250:	L-N: 125kA; L-G: 125kA; N-G: 80kA; L-L: 250kA
Surge Current/Mode (8/20μs) PT160:	L-N: 80kA; L-G: 80kA; N-G: 80kA; L-L: 160kA
Surge Current/Mode (8/20μs) PT120:	L-N: 80kA; L-G: 40kA; N-G: 80kA; L-L: 120kA
Response Time:	<5 ns
Status Indicators:	LED Status Indicators
Operating Altitude:	13,000ft. (4000m)
Temp. (Operating/Storage):	-40 degrees to +70 degrees C/-40 degrees to +85 degrees C
Enclosure:	NEMA 1, 16 gauge steel, powder coated
Dimensions:	10" x 10" x 4" (254 x 254 x 102mm)
Mounting:	10.75" x 8.5"/.220"ID - 4 holes, (273 x 216mm/5.6mm ID) - 4 holes
Cable Connection:	#10 AWG Cable, 3ft (1M) provided
Conduit Connector:	3/4" compression connector
Weight:	PT250: 12 lbs. (5.5 kg); PT160: 11.40 lbs (5.2kg); PT120: 11.20 lbs (5.1kg)
UL File Number:	E322161
UL Certification:	UL Listed to 1449 4th Edition
ARRA Certification:	Complies with ARRA 1605 requirements

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

Specifications

A Note on PT Series VPR: These VPR represent wiring plus the upstream overcurrent safety device (circuit breaker)

- ANSI / IEEE C62.41-2002
- IEC 61643-1-1998
- UL 1449, 4th Edition

MODEL PT250	SERVICE	VPR L-N	VPR L-G	VPR N-G	VPR L-L	Cat. B3 6kV, 3kA Let-Thru V, L-N***	Cat. C3 20kV, 10kA Let-Thru V, L-N***
-120Y	120/208VAC, 3Φ, 4W+G	800	800	700	1200	620	850
-120T	120/240VAC, 1Φ, 3W+G	800	800	700	1200	620	850
-120S	120VAC, 1Φ, 2W+G	800	800	700	N/A	620	850
-220Y	220/380VAC, 3Φ, 4W+G	1200	1200	1200	2000	1140	1470
-220S	220VAC, 1Φ, 2W+G	1200	1200	1200	N/A	1140	1470
-240Y	240/415VAC, 3Φ, 4W+G	1200	1200	1200	2000	1140	1470
-240S	240VAC, 1Φ, 2W+G	1200	1200	1200	N/A	1140	1470
-240DCT*	240/120/120VAC, 3Φ, 4W+G	800/1200	800/1200	700	1200/1800	620/1100	850/1430
-277Y	277/480VAC, 3Φ, 4W+G	1200	1200	1200	2000	1140	1470
-277S	277VAC, 1Φ, 2W+G	1200	1200	1200	N/A	1140	1470
-347Y**	347/600VAC, 3Φ, 4W+G	N/A	N/A	N/A	N/A	1190	1530
MODEL PT160	SERVICE	VPR L-N	VPR L-G	VPR N-G	VPR L-L	Cat. B3 6kV, 3kA Let-Thru V, L-N***	Cat. C3 20kV, 10kA Let-Thru V, L-N***
-120Y	120/208VAC, 3Φ, 4W+G	800	800	700	1200	650	880
-120T	120/240VAC, 1Φ, 3W+G	800	800	700	1200	650	880
-120S	120VAC, 1Φ, 2W+G	800	800	700	N/A	650	880
-220Y	220/380VAC, 3Φ, 4W+G	1200	1200	1200	2000	1200	1530
-220S	220VAC, 1Φ, 2W+G	1200	1200	1200	N/A	1200	1530
-240Y	240/415VAC, 3Φ, 4W+G	1200	1200	1200	2000	1200	1530
-240S	240VAC, 1Φ, 2W+G	1200	1200	1200	N/A	1200	1530
-240DCT*	240/120/120VAC, 3Φ, 4W+G	800/1200	800/1200	700	1200/1800	650/1130	880/1500
-277Y	277/480VAC, 3Φ, 4W+G	1200	1200	1200	2000	1200	1530
-277S	277VAC, 1Φ, 2W+G	1200	1200	1200	N/A	1200	1530
-347Y**	347/600VAC, 3Φ, 4W+G	N/A	N/A	N/A	N/A	1240	1600
MODEL PT120	SERVICE	VPR L-N	VPR L-G	VPR N-G	VPR L-L	Cat. B3 6kV, 3kA Let-Thru V, L-N***	Cat. C3 20kV, 10kA Let-Thru V, L-N***
-120Y	120/208VAC, 3Φ, 4W+G	800	800	700	1200	650	880
-120T	120/240VAC, 1Φ, 3W+G	800	800	700	1200	650	880
-120S	120VAC, 1Φ, 2W+G	800	800	700	N/A	650	880
-220Y	220/380VAC, 3Φ, 4W+G	1200	1500	1200	2000	1200	1530
-220S	220VAC, 1Φ, 2W+G	1200	1500	1200	N/A	1200	1530
-240Y	240/415VAC, 3Φ, 4W+G	1200	1500	1200	2000	1200	1530
-240S	240VAC, 1Φ, 2W+G	1200	1500	1200	N/A	1200	1530
-240DCT*	240/120/120VAC, 3Φ, 4W+G	800/1200	800/1500	700	1200/1800	650/1130	800/1500
-277Y	277/480VAC, 3Φ, 4W+G	1200	1500	1200	2000	1200	1530
-277S	277VAC, 1Φ, 2W+G	1200	1500	1200	N/A	1200	1530
-347Y**	347/600VAC, 3Φ, 4W+G	N/A	N/A	N/A	N/A	1240	1600

*High-leg Delta Center Tapped **Not tested to UL1449 ***Actual measurements with 6" lead length

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.

MCG Surge

MODELS: PT40 • PT80

Local Panel Surge Protectors

Small, yet packed with the latest technology available for transient voltage surge suppressors. The PT80 and PT40 use high peak current fuses and large thermally-protected varistors to provide both reliable and safe protection for sensitive electronics. Use on local service panels, generators, transfer switches, dedicated equipment, OEM equipment, and residential/smart home applications.

Standout Feature: Small and Mighty

Features:

- Ipeak: PT80: 80,000A/phase / PT40: 40,000A/phase
- Thermally protected varistors with integral fuse element
- All Modes Protected
- Front Panel LED indicators
- Remote 1 Form C relay contacts with status LED
- Neutral - Ground Voltage Monitor LED
- EMI/RFI Filter
- 10 AWG connection cable
- NEMA 1, Powder-Coated Steel Enclosure
- “-EC” option: Event Counter. Add to basic model name.
- DIN-Rail mounting kit available
- Outdoor NEMA 4X enclosure kit w/ clear hinged door option

Made in the

USA



Ipeak = 40,000/80,000A

UL 1449 4th Edition Listed

20-Year Warranty

Filter Attenuation (MIL STD 220A (50Ohm))

db	120VAC	240VAC	277VAC
-30db	50kHz	50kHz	80kHz
-40db	130kHz	130kHz	180kHz
-50db	195kHz	195kHz	270kHz
-60db	230kHz	230kHz	300kHz

SPD Type: Type 2
I(n): 10kA

Maximum Continuous Operating VAC (MCOV): 115% Rated Line Voltage

Varistor MCOV: 125% Rated Line Voltage Minimum (std. models w/o “-xxxV” suffix)

Varistor MCOV: 115% Rated Line Voltage Minimum (models w/ “-xxxV” suffix)

SCCR: 100kA AIC

Surge Current/Phase (8/20µs): 1 Event - PT80: 80kA, PT40: 40kA.

Surge Life/Phase(8/20µs): 10,000 Events - PT80: 3kA, PT40: 2kA

Surge Current/Mode (8/20µs),PT80: L-N: 40kA; L-G: 40kA; N-G: 40kA; L-L: 80kA

Surge Current/Mode (8/20µs),PT40: L-N: 40kA; L-G: 40kA; N-G: 40kA; L-L: 40kA

Surge Current/Mode, “D” Models (8/20µs): **PT80:** L-G: 80KA, L-L: 80KA; **PT40:** L-G: 40KA, L-L: 40kA

Response Time: <5 ns

Status Indicators: LED Status Indicators

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 1, 16 gauge steel, powder coated

Cable Connection: 10 AWG (5.27mm²) cable, 3 ft. (91.4cm) provided

Dimensions: 6.75” x 7.25” x 4.25” (171 x 184 x 108mm)

Mounting: 5.5” x 8.0”/.220”ID - 4 holes, (140 x 203mm/5.6mm ID) - 4 holes

Optional NEMA 4X enclosure dimensions: 12.0” x 10.0” x 7.0” (305 x 254 x 178 mm)

NEMA 4X Mounting: 12.75” x 8.0”/0.31” ID - 4 holes, (324 x 203mm/8mm ID) - 4 holes

Conduit Connector: 3/4” compression connector

Weight: PT80: 5.75 lbs. (2.61 kg); PT40: 5.40 lbs (2.45kg)

UL File Number: E322161

UL Certification: UL Listed to 1449 4th Edition

ARRA Certification: Complies with ARRA 1605 requirements

Specifications: PT40/80

- ANSI / IEEE C62.41-2002
- IEC 61643-1-1998
- UL 1449, 4th Edition

MODEL PT80	SERVICE	VPR L-N	VPR L-G	VPR N-G	VPR L-L	6kV, 3kA Let-Thru V, L-N
-120Y	120/208VAC, 3Φ, 4W+G	800	800	700	1200	630
-120T	120/240VAC, 1Φ, 3W+G	800	800	700	1200	630
-120S	120VAC, 1Φ, 2W+G	800	800	700	N/A	630
-120Y-140V	120/208VAC, 3Φ, 4W+G	700	800	600	1200	590
-120T-140V	120/240VAC, 1Φ, 3W+G	700	800	600	1200	590
-120S-140V	120VAC, 1Φ, 2W+G	700	800	600	N/A	590
-220Y	220/380VAC, 3Φ, 4W+G	1200	1500	1200	2500	1050
-220S	220VAC, 1Φ, 2W+G	1200	1500	1200	N/A	1050
-240DCT	240/120/120VAC, 3Φ, 4W+G	800/1200	800/1500	700	1200/1800	630/990
-240DCT-140V	240/120/120VAC, 3Φ, 4W+G	700/1200	800/1500	600	1200/1800	590/990
-240Y	240/415VAC, 3Φ, 4W+G	1200	1500	1200	2500	1050
-240S	240VAC, 1Φ, 2W+G	1200	1500	1200	N/A	1050
-277Y	277/480VAC, 3Φ, 4W+G	1200	1500	1200	2500	1050
-277S	277VAC, 1Φ, 2W+G	1200	1500	1200	N/A	1050
-347Y*	347VAC, 3Φ, 4W+G	N/A	N/A	N/A	N/A	1300
-240Y-320V	240/415VAC, 3Φ, 4W+G	1200	1200	1000	1800	990
-240S-320V	240VAC, 1Φ, 2W+G	1200	1200	1000	N/A	990
-277Y-320V	277/480VAC, 3Φ, 4W+G	1200	1200	1000	1800	990
-277S-320V	277VAC, 1Φ, 2W+G	1200	1200	1000	N/A	990
-240D	240VAC, 3Φ, 3W+G	N/A	1200	N/A	1800	990 (L-G)
-480D	480VAC, 3Φ, 3W+G	N/A	1800	N/A	4000	1790 (L-G)
-600D*	600VAC, 3Φ, 3W+G	N/A	N/A	N/A	N/A	1940 (L-G)
MODEL PT40	SERVICE	VPR L-N	VPR L-G	VPR N-G	VPR L-L	6kV, 3kA Let-Thru V, L-N
-120Y	120/208VAC, 3Φ, 4W+G	800	1500	700	1500	630
-120T	120/240VAC, 1Φ, 3W+G	800	1500	700	1500	630
-120S	120VAC, 1Φ, 2W+G	800	1500	700	N/A	630
-120Y-140V	120/208VAC, 3Φ, 4W+G	700	1200	600	1500	590
-120T-140V	120/240VAC, 1Φ, 3W+G	700	1200	600	1500	590
-120S-140V	120VAC, 1Φ, 2W+G	700	1200	600	N/A	590
-220Y	220/380VAC, 3Φ, 4W+G	1200	2500	1200	2500	1050
-220S	220VAC, 1Φ, 2W+G	1200	2500	1200	N/A	1050
-240DCT	240/120/120VAC, 3Φ, 4W+G	800/1200	1500/2500	700	1500/1800	630/990
-240DCT-140V	240/120/120VAC, 3Φ, 4W+G	700/1200	1200/2500	600	1500/1800	590/990
-240Y	240/415VAC, 3Φ, 4W+G	1200	2500	1200	2500	1050
-240S	240VAC, 1Φ, 2W+G	1200	2500	1200	N/A	1050
-277Y	277/480VAC, 3Φ, 4W+G	1200	2500	1200	2500	1050
-277S	277VAC, 1Φ, 2W+G	1200	2500	1200	N/A	1050
-347Y*	347VAC, 3Φ, 4W+G	N/A	N/A	N/A	N/A	1300
-240Y-320V	240/415VAC, 3Φ, 4W+G	1200	2000	1000	2000	990
-240S-320V	240VAC, 1Φ, 2W+G	1200	2000	1000	N/A	990
-277Y-320V	277/480VAC, 3Φ, 4W+G	1200	2000	1000	2000	990
-277S-320V	277VAC, 1Φ, 2W+G	1200	2000	1000	N/A	990
-240D	240VAC, 3Φ, 3W+G	N/A	1200	N/A	2000	990 (L-G)
-480D	480VAC, 3Φ, 3W+G	N/A	2000	N/A	4000	1820 (L-G)
-600D*	600VAC, 3Φ, 3W+G	N/A	N/A	N/A	N/A	19630 (L-G)

*not tested to UL1449 standards

MCG Surge

MODELS: PT40 • PT80BB Version

Local Panel Surge Protectors

The PT80 and PT40 “-BB” models offer a low cost local panel protection solution. The “-BB” suffix stands for “bare bones” - meaning we have eliminated some features that not all applications require, and passed the savings on to you. The protection circuits are the same as the standard models, comprised of high peak surge current fuses and large thermally-protected varistors. The front panel LEDs quickly display the protection of the protector. These models may be used on service panels, small generators, transfer switches, or dedicated to a single piece of critical equipment or control panel.

Standout Feature: Bare Bones; Full Protection

Features:

- I_{peak}: PT80: 80,000A/phase / PT40: 40,000A/phase
- Thermally protected varistors with integral fuse element
- All Modes Protected
- Front Panel LED indicators
- 10 AWG connection cable
- NEMA 1, Powder-Coated Steel Enclosure
- DIN-Rail mounting kit available
- Outdoor NEMA 4X encl. kit w/ clear hinged door available
- 20-Year No Nonsense Warranty

Model Ordering Example: A PT80-BB in 120Y vottage configuration
PT80-120Y-BB



I_{peak} = 40,000/80,000A

UL 1449 4th Edition Listed

20-Year Warranty

Made in the
USA



SPD Type: Type 2
I(n): 10kA
Maximum Continuous Operating VAC (MCOV): 115% Rated Line Voltage
Varistor MCOV: 125% Rated Line Voltage Minimum (std. models w/o “-xxxV” suffix)
Varistor MCOV: 115% Rated Line Voltage Minimum (models w/ “-xxxV” suffix)
SCCR: 100kA AIC
Surge Current/Phase (8/20 μ s): 1 Event - PT80: 80kA. PT40: 40kA.
Surge Life/Phase(8/20 μ s): 10,000 Events - PT80: 3kA, PT80: 2kA
Surge Current/Mode (8/20 μ s),PT80: L-N: 40kA; L-G: 40kA; N-G: 40kA; L-L: 80kA
Surge Current/Mode (8/20 μ s),PT40: L-N: 40kA; L-G: 40kA; N-G: 40kA; L-L: 40kA
Surge Current/Mode, “D” Models (8/20 μ s): **PT80**: L-G: 80KA, L-L: 80KA; **PT40**: L-G: 40KA, L-L: 40KA
Response Time: <5 ns
Status Indicators: LED Status Indicators
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 1, 16 gauge steel, powder coated
Cable Connection: 10 AWG (5.27mm²) cable, 3 ft. (91.4cm) provided
Dimensions: 6.75” x 7.25” x 4.25” (171 x 184 x 108mm)
Mounting: 5.5” x 8.0”/.220”ID - 4 holes, (140 x 203mm/5.6mm ID) - 4 holes
Optional NEMA 4X enclosure dimensions: 12.0” x 10.0” x 7.0” (305 x 254 x 178 mm)
NEMA 4X Mounting: 12.75” x 8.0”/0.31” ID - 4 holes, (324 x 203mm/8mm ID) - 4 holes
Conduit Connector: 3/4” compression connector
Weight: PT80: 5.75 lbs. (2.61 kg); PT40: 5.40 lbs (2.45kg)
UL File Number: E322161
UL Certification: UL Listed to 1449 4th Edition
ARRA Certification: Complies with ARRA 1605 requirements

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: PT40/80-BB

- ANSI / IEEE C62.41-2002
- IEC 61643-1-1998
- UL 1449, 4th Edition

MODEL PT80-BB	SERVICE	VPR L-N	VPR L-G	VPR N-G	VPR L-L	6kV, 3kA Let-Thru V, L-N
-120Y	120/208VAC, 3Φ, 4W+G	800	800	700	1200	630
-120T	120/240VAC, 1Φ, 3W+G	800	800	700	1200	630
-120S	120VAC, 1Φ, 2W+G	800	800	700	N/A	630
-120Y-140V	120/208VAC, 3Φ, 4W+G	700	800	600	1200	590
-120T-140V	120/240VAC, 1Φ, 3W+G	700	800	600	1200	590
-120S-140V	120VAC, 1Φ, 2W+G	700	800	600	N/A	590
-220Y	220/380VAC, 3Φ, 4W+G	1200	1500	1200	2500	1050
-220S	220VAC, 1Φ, 2W+G	1200	1500	1200	N/A	1050
-240DCT	240/120/120VAC, 3Φ, 4W+G	800/1200	800/1500	700	1200/1800	630/990
-240DCT-140V	240/120/120VAC, 3Φ, 4W+G	700/1200	800/1500	600	1200/1800	590/990
-240Y	240/415VAC, 3Φ, 4W+G	1200	1500	1200	2500	1050
-240S	240VAC, 1Φ, 2W+G	1200	1500	1200	N/A	1050
-277Y	277/480VAC, 3Φ, 4W+G	1200	1500	1200	2500	1050
-277S	277VAC, 1Φ, 2W+G	1200	1500	1200	N/A	1050
-347Y*	347VAC, 3Φ, 4W+G	N/A	N/A	N/A	N/A	1300
-240Y-320V	240/415VAC, 3Φ, 4W+G	1200	1200	1000	1800	990
-240S-320V	240VAC, 1Φ, 2W+G	1200	1200	1000	N/A	990
-277Y-320V	277/480VAC, 3Φ, 4W+G	1200	1200	1000	1800	990
-277S-320V	277VAC, 1Φ, 2W+G	1200	1200	1000	N/A	990
-240D	240VAC, 3Φ, 3W+G	N/A	1200	N/A	1800	990 (L-G)
-480D	480VAC, 3Φ, 3W+G	N/A	1800	N/A	4000	1790 (L-G)
-600D*	600VAC, 3Φ, 3W+G	N/A	N/A	N/A	N/A	1940 (L-G)

MODEL PT40-BB	SERVICE	VPR L-N	VPR L-G	VPR N-G	VPR L-L	6kV, 3kA Let-Thru V, L-N
-120Y	120/208VAC, 3Φ, 4W+G	800	1500	700	1500	630
-120T	120/240VAC, 1Φ, 3W+G	800	1500	700	1500	630
-120S	120VAC, 1Φ, 2W+G	800	1500	700	N/A	630
-120Y-140V	120/208VAC, 3Φ, 4W+G	700	1200	600	1500	590
-120T-140V	120/240VAC, 1Φ, 3W+G	700	1200	600	1500	590
-120S-140V	120VAC, 1Φ, 2W+G	700	1200	600	N/A	590
-220Y	220/380VAC, 3Φ, 4W+G	1200	2500	1200	2500	1050
-220S	220VAC, 1Φ, 2W+G	1200	2500	1200	N/A	1050
-240DCT	240/120/120VAC, 3Φ, 4W+G	800/1200	1500/2500	700	1500/1800	630/990
-240DCT-140V	240/120/120VAC, 3Φ, 4W+G	700/1200	1200/2500	600	1500/1800	590/990
-240Y	240/415VAC, 3Φ, 4W+G	1200	2500	1200	2500	1050
-240S	240VAC, 1Φ, 2W+G	1200	2500	1200	N/A	1050
-277Y	277/480VAC, 3Φ, 4W+G	1200	2500	1200	2500	1050
-277S	277VAC, 1Φ, 2W+G	1200	2500	1200	N/A	1050
-347Y*	347VAC, 3Φ, 4W+G	N/A	N/A	N/A	N/A	1300
-240Y-320V	240/415VAC, 3Φ, 4W+G	1200	2000	1000	2000	990
-240S-320V	240VAC, 1Φ, 2W+G	1200	2000	1000	N/A	990
-277Y-320V	277/480VAC, 3Φ, 4W+G	1200	2000	1000	2000	990
-277S-320V	277VAC, 1Φ, 2W+G	1200	2000	1000	N/A	990
-240D	240VAC, 3Φ, 3W+G	N/A	1200	N/A	2000	990 (L-G)
-480D	480VAC, 3Φ, 3W+G	N/A	2000	N/A	4000	1820 (L-G)
-600D*	600VAC, 3Φ, 3W+G	N/A	N/A	N/A	N/A	19630 (L-G)

MCG Surge

MODEL: SE Series, SF-40

200kA/phase model

The new SE series provides high current, industrial grade protection in a rugged, yet compact powder coated, steel enclosure. This ultra small series comes standard with the latest thermally protected protection components which are able to divert high repetitive surge currents. All components are monitored by a comprehensive LED status display. This line is compliant to stringent international surge testing standards. Comes with our 20-year "No Nonsense" warranty.

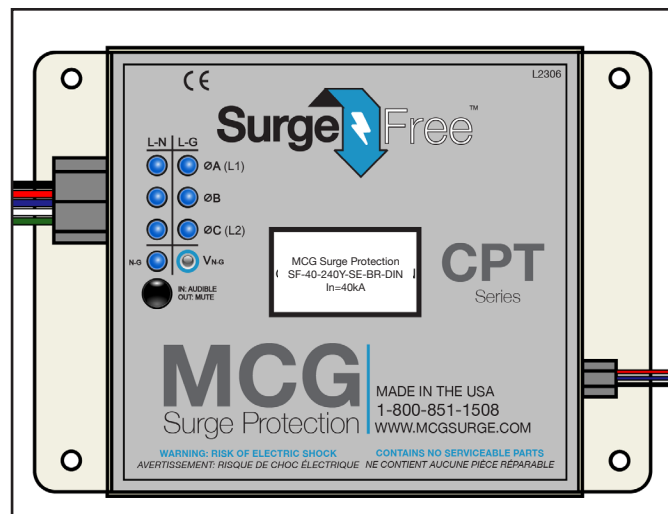
Standout Feature: Compact with thermally-protected MOVs and extensive LED monitoring

Features:

- High repetitive surge current capacity
- Redundant - multiple fused surge paths per phase/line
- IEEE CAT C/B/A all built into one unit
- Thermally-protected, high capacity varistors with individual status monitoring
- 10 gauge, 1m leads are standard
- Space saving, powder coated steel enclosure
- LED status display

Options:

- Relay for remote monitoring
- Comprehensive LED display
- DIN rail mount
- Neutral-Ground voltage LED (models with beeper/relay only)
- Filtering



Ipeak = 200kA per phase

IEC-61643-11

Type 2 Tested & 10/350 Tested

20-Year Warranty

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

Made in the

USA



Ordering information: Choose base model, choose options, specify surge current rating (200kA or 100kA)

Option suffixes (add to base model) :

- For the relay and audible alarm option, add "-BR" suffix. (This option also includes the comprehensive LED display)
- For the beeper option, add "-B" suffix. This option also includes the comprehensive LED display
- For the DIN rail (35mm) mount option, add "-DIN" suffix
- For the filtering option, add "-F" suffix

Ordering example: SF-40-240Y-SE-BR-DIN, 200kA model

This model is a 240/415 Wye, 3 Phase, 4 Wire + Ground protector with the beeper, relay, and DIN rail mount option.

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: SE Series(200kA)

- ANSI / IEEE C62.41-2002 Cats A, B, C
- IEC 61643-11 Type Tested

In: 40kA
 I_{max} (per mode): 80kA
 Up (-220Y and -240Y models): <2.5kV at 40kA In; <1.3kV at 5kA In; (MCOV 300V including cable connection)
 10/350 μs let-thru: UP<2.0 let-thru voltage for 12.5kA impulse at component terminals
 Modes of protection: All modes
 SCCR: 200kA AIC (Note: 150kA AIC for 120VAC models)
 Varistor Headroom: Minimum 25% of nominal AC voltage
 Operating Altitude: 13,000ft. (4000m)
 Temp. (Operating/Storage): -40° to +85°C/-40° to +85°C (-40° to +185°F/-40° to +185°F)
 Cable Connection: 10 AWG (5.27mm sq.) cable, 1 meter (39.37 inches) provided
 Enclosure: NEMA 1, 16 gauge steel (0.050" thick), powder coated
 Dimensions (overall): 7.25"L x 4.25"W x 2.75"D (184 x 108 x 70 mm), Note: L dim includes flanges
 Mounting Dimensions: 6.5" x 3.5"/.220"ID - 4 holes, (165 x 89mm/5.6mm ID) - 4 holes
 Dimensions (overall) for "-xxxD" and relay/beeper models: 7.25"L x 5.25"W x 2.95"D (184 x 134 x 75 mm), Note: L dim includes flanges
 Mounting Dimensions for "-xxxD" and relay/beeper models: 6.5" x 4.5"/.220"ID - 4 holes, (165 x 114mm/5.6mm ID) - 4 holes
 Mounting "-DIN" Models: 35mm DIN rail compatible
 Weight (standard models): 200kA/Phase standard models: 3.5 lbs. (1.6 kg)
 Weight (relay/beeper and "-xxxD" models): 200kA/Phase (relay/beeper and "-xxxD") models: 4.5 lbs. (2.0 kg)
 Conduit Connector Size: 3/4" compression connector. 1/4" cord grip for relay/beeper model leads

MODEL SF-40 Series	SERVICE
SF-40-120Y-SE	120/208VAC, 3PH, 4W+G
SF-40-120T-SE	120/240VAC, 1PH, 3W+G
SF-40-120S-SE	120VAC, 2W+G
SF-40-277Y-SE	277/480VAC, 3PH, 4W+G
SF-40-277S-SE	277VAC, 1PH, 2W+G
SF-40-240DCT-SE	240/120/120VAC, 3PH, 4W+G
SF-40-220Y-SE	220/380VAC, 3PH, 4W+G
SF-40-220S-SE	220VAC, 1PH, 2W+G
SF-40-230Y-SE	230/400VAC, 3PH, 4W+G
SF-40-230S-SE	230VAC, 1PH, 2W+G
SF-40-240Y-SE	240/415VAC, 3PH, 4W+G
SF-40-240S-SE	240VAC, 1PH, 2W+G
SF-40-347Y-SE	347/600VAC, 3PH, 4W+G
SF-40-347S-SE	347VAC, 1PH, 2W+G
SF-40-240D-SE	240VAC, 3PH, 3W+G
SF-40-380D-SE	380VAC, 3PH, 3W+G
SF-40-400D-SE	400VAC, 3PH, 3W+G
SF-40-415D-SE	415VAC, 3PH, 3W+G
SF-40-480D-SE	480VAC, 3PH, 3W+G
SF-40-600D-SE	600VAC, 3PH, 3W+G
SF-40-690D-SE-DIN-EC	690VAC, 3Ph, 3W+G, 50/60Hz
SF-40-690D-SE-DIN-HF	690VAC, 3Ph, 3W+G, 5.0-9.5kHz

Note 1) "W"= WIRE, "G"= GROUND

Note 2) When ordering, specify 200kA or 100kA/Ph. model.

Note 3) Specifications are subject to change without notice.

MCG Surge

MODEL: SE Series, SF-40

100kA/phase model

The new SE series provides high current, industrial grade protection in a rugged, yet compact powder coated, steel enclosure. This ultra small series comes standard with the latest thermally protected protection components which are able to divert high repetitive surge currents. All components are monitored by a comprehensive LED status display. This line is compliant to stringent international surge testing standards. Comes with our 20-year “No Nonsense” warranty.

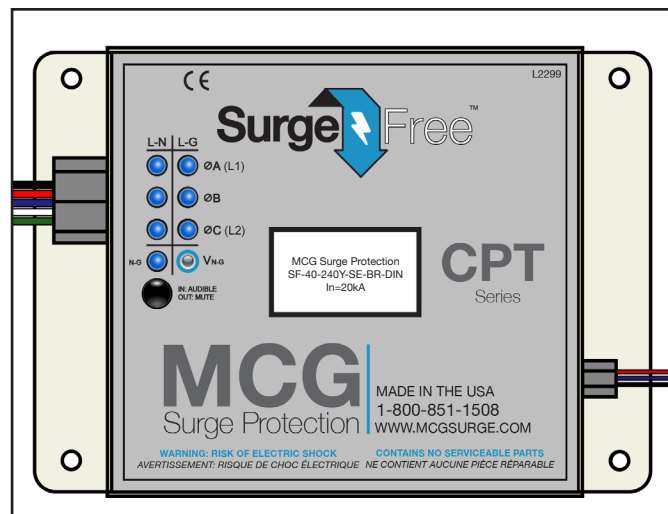
Standout Feature: Compact with thermally-protected MOVs and extensive LED monitoring

Features:

- High repetitive surge current capacity
- Redundant - multiple fused surge paths per phase/line
- IEEE CAT C/B/A all built into one unit
- Thermally-protected, high capacity varistors with individual status monitoring
- 10 gauge, 1m leads are standard
- Space saving, powder coated steel enclosure
- LED status display

Options:

- Relay for remote monitoring
- Comprehensive LED display
- DIN rail mount
- Neutral-Ground voltage LED (models with beeper/relay only)
- Filtering



I_{peak} = 100kA per phase

IEC-61643-11

Cat C/B/A in one unit

20-Year Warranty

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

Made in the

USA



Ordering information: Choose base model, choose options, specify surge current rating (200kA or 100kA)

Option suffixes (add to base model) :

- For the relay and audible alarm option, add “-BR” suffix. (This option also includes the comprehensive LED display)
- For the beeper option, add “-B” suffix. This option also includes the comprehensive LED display
- For the DIN rail (35mm) mount option, add “-DIN” suffix
- For the filtering option, add “-F” suffix

Ordering example: SF-40-240Y-SE-BR-DIN, 100kA model

This model is a 240/415 Wye, 3 Phase, 4 Wire + Ground protector with the beeper, relay, and DIN rail mount option.

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: SE Series(100kA)

• ANSI / IEEE C62.41-2002 Cats A, B, C

In: 20kA
 I_{max} (per mode): 50kA
 Up (-220Y and -240Y models): <2 kV at 20kA In; <1.3kV at 5kA In; (MCOV 300V including cable connection)
 Install Locations: ANSI/IEEE categories C, B, & A (all in one unit); equivalent to IEC Type I, II, III
 Modes of protection: All modes
 SCCR: 200kA AIC (Note: 150kA AIC for 120VAC models)
 Varistor Headroom: Minimum 25% of nominal AC voltage
 Operating Altitude: 13,000ft. (4000m)
 Temp. (Operating/Storage): -40° to +85°C/-40° to +85°C (-40° to +185°F/-40° to +185°F)
 Cable Connection: 10 AWG (5.27mm sq.) cable, 1 meter (39.37 inches) provided
 Enclosure: NEMA 1, 16 gauge steel (0.050" thick), powder coated
 Dimensions (overall): 7.25"L x 4.25"W x 2.75"D (184 x 108 x 70 mm), Note: L dim includes flanges
 Mounting Dimensions: 6.5" x 3.5"/.220"ID - 4 holes, (165 x 89mm/5.6mm ID) - 4 holes
 Dimensions (overall) for "-xxxD" and relay/beeper models: 7.25"L x 5.25"W x 2.95"D (184 x 134 x 75 mm), Note: L dim includes flanges
 Mounting Dimensions for "-xxxD" and relay/beeper models: 6.5" x 4.5"/.220"ID - 4 holes, (165 x 114mm/5.6mm ID) - 4 holes
 Mounting "-DIN" Models: 35mm DIN rail compatible
 Weight (standard models): 100kA/Phase standard models: 3.1 lbs. (1.4 kg) Max for options: 4.1 lbs. (1.9 kg)
 Conduit Connector Size: 3/4" compression connector. ¼" cord grip for relay/beeper model leads

MODEL SF-40 Series	SERVICE
SF-40-120Y-SE	120/208VAC, 3PH, 4W+G
SF-40-120T-SE	120/240VAC, 1PH, 3W+G
SF-40-120S-SE	120VAC, 2W+G
SF-40-277Y-SE	277/480VAC, 3PH, 4W+G
SF-40-277S-SE	277VAC, 1PH, 2W+G
SF-40-240DCT-SE	240/120/120VAC, 3PH, 4W+G
SF-40-220Y-SE	220/380VAC, 3PH, 4W+G
SF-40-220S-SE	220VAC, 1PH, 2W+G
SF-40-230Y-SE	230/400VAC, 3PH, 4W+G
SF-40-230S-SE	230VAC, 1PH, 2W+G
SF-40-240Y-SE	240/415VAC, 3PH, 4W+G
SF-40-240S-SE	240VAC, 1PH, 2W+G
SF-40-347Y-SE	347/600VAC, 3PH, 4W+G
SF-40-347S-SE	347VAC, 1PH, 2W+G
SF-40-240D-SE	240VAC, 3PH, 3W+G
SF-40-380D-SE	380VAC, 3PH, 3W+G
SF-40-400D-SE	400VAC, 3PH, 3W+G
SF-40-415D-SE	415VAC, 3PH, 3W+G
SF-40-480D-SE	480VAC, 3PH, 3W+G
SF-40-600D-SE	600VAC, 3PH, 3W+G
SF-40-690D-SE-DIN-EC	690VAC, 3Ph, 3W+G, 50/60Hz
SF-40-690D-SE-DIN-HF	690VAC, 3Ph, 3W+G, 5.0-9.5kHz

Note 1) "W"= WIRE, "G"= GROUND

Note 2) When ordering, specify 200kA or 100kA/Ph. model.

Note 3) Specifications are subject to change without notice.

MCG Surge

MODEL: CPT SE Series

200kA & 100kA/phase models available

The new CPT SE series provides high current, industrial grade protection in a rugged, yet compact powder coated, steel enclosure. This ultra small series comes standard with the latest thermally protected protection components which are able to divert high repetitive surge currents. All components are monitored by a comprehensive LED status display. This line is compliant to stringent international surge testing standards. Comes with our 20-year "No Nonsense" warranty.

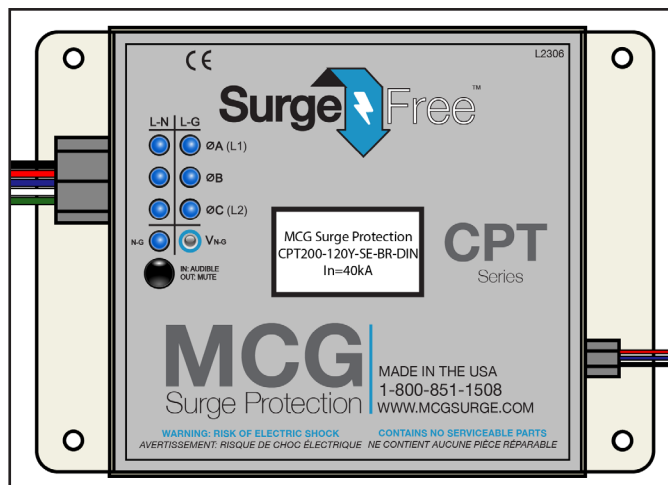
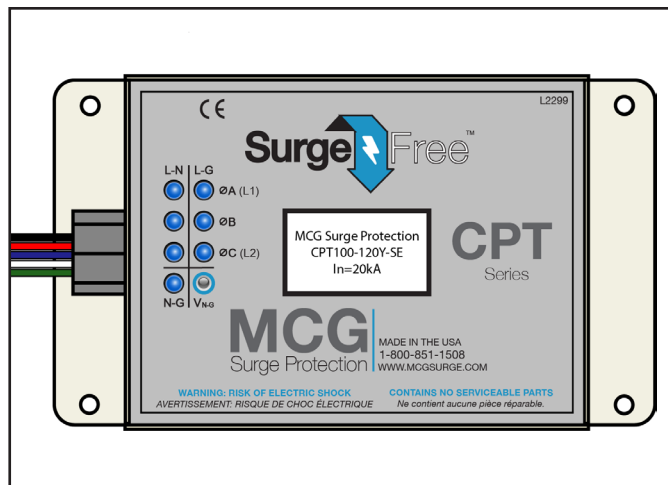
Standout Feature: Most compact thermally protected unit with extensive LED display that meets IEC standard

Features:

- High repetitive surge current capacity
- Redundant - multiple fused surge paths per phase/line
- Design is tested to IEC-61643-11 Type 2
- Thermally protected, high capacity varistors with individual status monitoring
- 10 gauge, 1m leads are standard
- Space saving, powder coated steel enclosure
- Comprehensive LED display
- Neutral to Ground voltage LED

Options:

- Relay for remote monitoring + beeper
- DIN rail mount
- Filtering (CPT100 models only)



Ipeak = up to 200kA per phase

IEC-61643-11 Type 2 Tested

20-Year Warranty

Made in the
USA

UL Certification
Pending - 2019



Ordering information: Choose base model, choose options.

Option suffixes (add to base model) :

- For the relay and audible alarm option, add "-BR" suffix.
- For the beeper option, add "-B" suffix.
- For the DIN rail (35mm) mount option, add "-DIN" suffix
- For the filtering option, add "-F" suffix

Ordering example: CPT200-240Y-SE-BR-DIN

This model is a 240/415 Wye, 3 Phase, 4 Wire + Ground protector with the beeper, relay, and DIN rail mount option.

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: CPT SE Series

• ANSI / IEEE C62.41-2002
• IEC 61643-11 Type 2

In: 40kA for 200kA/phase (100kA/mode) models (CPT200 Family)
 In: 20kA for 100kA/phase (50kA/mode) models (CPT100 Family)
 I_{max} (per mode): 80kA (200kA per phase models), 40kA (100kA per phase models)
 Up: 2500V (for -220Y and -240Y models)
 Modes of protection: All modes
 SCCR: 200kA AIC (Note: 150kA AIC for 120VAC models)
 Varistor Headroom: Minimum 25% of nominal AC voltage
 Operating Altitude: 13,000ft. (4000m)
 Temp. (Operating/Storage): -40° to +85°C/-40° to +85°C (-40° to +185°F/-40° to +185°F)
 Cable Connection: 10 AWG (5.27mm sq.) cable, 1 meter (39.37 inches) provided
 Enclosure: NEMA 1, 16 gauge steel (0.050" thick), powder coated
 Dimensions (overall): 7.25"L x 4.25"W x 2.75"D (184 x 108 x 70 mm), Note: L dim includes flanges
 Mounting Dimensions: 6.5" x 3.5"/.220"ID - 4 holes, (165 x 89mm/5.6mm ID) - 4 holes
 Dimensions (overall) for "-xxxD" and relay/beeper models: 7.25"L x 5.25"W x 2.95"D (184 x 134 x 75 mm), Note: L dim includes flanges
 Mounting Dimensions for "-xxxD" and relay/beeper models: 6.5" x 4.5"/.220"ID - 4 holes, (165 x 114mm/5.6mm ID) - 4 holes
 Mounting "-DIN" Models: 35mm DIN rail compatible
 Weight (standard models): 200kA/Phase standard models: 3.5 lbs. (1.6 kg)
 100kA/Phase standard models: 3.1 lbs. (1.4 kg)
 Weight (relay/beeper and "-xxxD" models): 200kA/Phase (relay/beeper and "-xxxD" models): 4.5 lbs. (2.0 kg)
 100kA/Phase (relay/beeper and "-xxxD" models): 4.1 lbs. (1.9 kg)
 Conduit Connector Size: 3/4" compression connector. 1/4" cord grip for relay/beeper model leads

MODEL CPT100/200* Series	SERVICE
CPT200-120Y-SE	120/208VAC, 3PH, 4W+G
CPT200-120T-SE	120/240VAC, 1PH, 3W+G
CPT200-120S-SE	120VAC, 2W+G
CPT200-277Y-SE	277/480VAC, 3PH, 4W+G
CPT200-277S-SE	277VAC, 1PH, 2W+G
CPT200-240DCT-SE	240/120/120VAC, 3PH, 4W+G
CPT200-220Y-SE	220/380VAC, 3PH, 4W+G
CPT200-220S-SE	220VAC, 1PH, 2W+G
CPT200-230Y-SE	230/400VAC, 3PH, 4W+G
CPT200-230S-SE	230VAC, 1PH, 2W+G
CPT200-240Y-SE	240/415VAC, 3PH, 4W+G
CPT200-240S-SE	240VAC, 1PH, 2W+G
CPT200-347Y-SE	347/600VAC, 3PH, 4W+G
CPT200-347S-SE	347VAC, 1PH, 2W+G
CPT200-240D-SE	240VAC, 3PH, 3W+G
CPT200-380D-SE	380VAC, 3PH, 3W+G
CPT200-400D-SE	400VAC, 3PH, 3W+G
CPT200-415D-SE	415VAC, 3PH, 3W+G
CPT200-480D-SE	480VAC, 3PH, 3W+G
CPT200-600D-SE	600VAC, 3PH, 3W+G

*CPT200 Models Shown

Note 1) "W"= WIRE, "G"= GROUND

Note 2) Specifications are subject to change without notice.

MCG Surge

MODEL: 500 Series, 530P

Single Phase Parallel AC Surge Protector

The 530P is a versatile protector that is optimized for single phase applications up to 240VAC. Low impedance construction results in superior protection due to low let-through levels, without sacrificing reliability. At the heart of the protector is our new, all mode, single phase protection module.

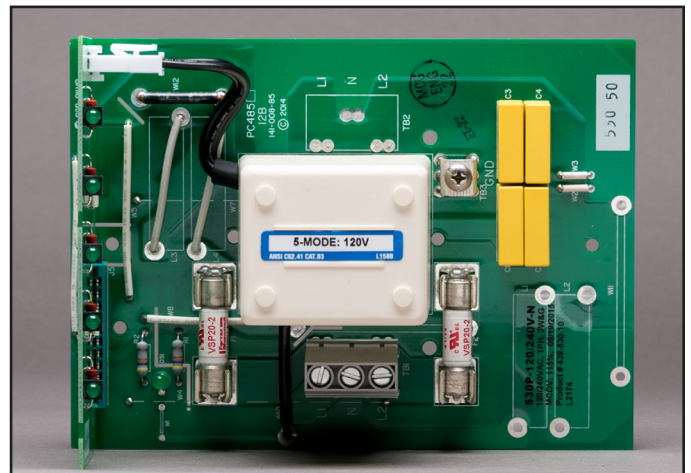
Protection components are thermally protected to ensure safety and are continuously monitored by dedicated status indicators. The 530P comes in an indoor/outdoor rated, corrosion resistant compact enclosure. It can be wired to a service panel or can reside near or within the protected equipment as a dedicated protector.

The 530P is offered with or without an enclosure for retrofit and OEM applications. Plug-in status board allows for field monitoring upgrades without having to send the whole unit back to the factory.

Standout Feature: Install at or within equipment

Features:

- Modular unit for easy field repair
- Low impedance construction
- All protection elements and fuses monitored
- Thermally protected varistors
- All modes protected
- NEMA 4X indoor/outdoor enclosure
- Padlock eyes on enclosure
- EMI/RFI filtering; optional enclosure-free
- Optional relay (surge protected)
- Optional beeper with mute switch
- Small form factor (8.33"L x 7.01"W x 4.22"D)
- 20-Year No Nonsense Warranty, lifetime warranty on fuses and module



Ipeak = 60kA to 100kA total

UL 1449 4th Edition Listed

20-Year Warranty

Made in the

USA



Specifications: 500 Series

- ANSI / IEEE C62.41-2002
- IEC 61643-1-1998
- UL 1449, 4th Edition

<p>SPD Type: Type 2 (with enclosure), Type 4 Component Assembly (without enclosure) In: 5kA Maximum Continuous Operating VAC (MCOV): 115% Rated Line Voltage Varistor MCOV: 125% Rated Line Voltage Minimum SCCR: 50kAAIC Surge Current/Mode (8/20µs): -120/240V (split phase models) 20kA per mode (L1-N, L2-N, L1-G, L2-G, N-G) -120V/-220V/-240V models, 40kA L1-N, 40kA L1-G, 20kA N-G Response Time: -240V-LLG models, 20kA L1-G, 20kA L2-G, 20kA L1-L2 Status Indicators: <1 ns Optional Status Indicators: 4/5 Blue status LEDs depending on model. 1 Green LED on motherboard Standard LED Modes of Protection: indicators plus beeper with mute and SPST relay contacts Operating Altitude: L-N, L-G, L-L, N-G Temp. (Operating/Storage): 13,000ft. (4000m) / -40° to +70°C/-40° to +85°C Enclosure: NEMA 4X nonmetallic. Indoor/Outdoor, UL94-5VA+UV(f1) Weight: 2.4 lbs./1.1kg (with enclosure) 1.0 lbs./0.5kg (without enclosure) Power Connections: 20 to 6 AWG (0.52 - 13.3mm²) Cage Clamp Terminal Blocks Ground Connection: Screw Terminal (Ring Terminal Lug included) 12-10AWG (3.31-5.26mm²) Relay (where equipped): 28 to 16 AWG (0.081-1.31mm²) Cage Clamp Pluggable Terminal Block Conduit Connector Size: 3/4" Trade (2 holes - 1.093" (27.76mm)) Note: Hole Plugs included Dimensions (overall), with enclosure: 8.33"L x 7.01"W x 4.22"D (212mm L x 178mm W x 107mm D) Mounting, with enclosure: 8.875"L x 5.00"W (4 slots-0.200"W) (225mm L x 127mm W (4 slots-5.1mm W) Dimensions (overall) without enclosure including 1" standoffs: 7.4"L x 5.4"W x 4.5"D (188mm L x 137mm W x 114mm D) Mounting, without enclosure: See 500 series installation instructions document 299-700-33</p>
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MODEL 500 Series	SERVICE	VPR L-N	VPR L-G	VPR N-G	VPR L-L
-120/240V	120/240VAC, 1Φ, 3W+G	800	800	700	1200
-120V	120VAC, 1Φ, 2W+G	800	800	700	N/A
-220V	220VAC, 1Φ, 2W+G	1500	1500	1500	N/A
-240V	240VAC, 1Φ, 2W+G	1200	1200	1200	N/A
-240V-LLG	240VAC, 1Φ, 2W+G*	N/A	1200	N/A	1100

*Line 1, Line 2, and Ground (no neutral)

Basic Model Names and Options:

530P-120/240V
 530P-120V
 530P-220V
 530P-240V
 530P-240V-LLG

Adding "-N" to basic model name deletes the enclosure - protection assembly only (OEM style)
 Adding "-UFP" to basic model name adds protection status relay contacts and beeper with mute
 UFP = "Upgraded Front Panel"

Ordering Example: 530P-120/240V-UFP

This model is a parallel-connected 500 series protector (with enclosure) for use on a 120/240VAC, 1Φ, 3W+G service with the optional remote relay contacts and beeper option.

UL File Number: E322161

UL: 530P MODELS WITH ENCLOSURE:

SPD Type 2, USL/CNL, UL1449, 4th Edition/CSA C22.2 No. 269.2

530P MODELS WITHOUT ENCLOSURE:

SPD Type 4CA, USR, UL1449, 4th Edition / SPD Type 5, CNR, CSA C22.2 No 269.5

ARRA Certification: Complies with ARRA 1605 requirements

MCG Surge

MODEL: CCP Series

Control Panel AC Surge Protection

The CCP (Control Cabinet Protector) Series answers the call for an ultra compact, modular AC surge protector for control cabinets, OEM equipment, and other systems requiring reliable protection. The CCP is available for 120V, 220V, 230V, 240V, 120/240V split phase, and 240V (two hots & ground) systems. Models with optional noise filtering are available.

The CCP is easily installed, as it can be wired in parallel with the load or in series installation for loads that draw 10 Amps or less. No special wire terminations are required and the wiring diagram is displayed on the side of the module for easy installation.

Two status LEDs display protection status. The unit combines safety and high performance by using multiple thermally protected high current varistors and series fuses. It's ready for quick DIN rail mounting and utilizes a scant 1.75" (45mm) of DIN rail space. The field-replaceable module takes seconds to replace for quick repair.

Standout Feature: Compact, Modular, and Affordable

Features:

- Compact Size
- Modular - 10 second, field-replaceable module
- Proven octal socket construction
- All modes protected (up to 5)
- Industrial / Commercial grade
- OEM or retrofit applicable
- Optional noise filtering
- Dual LED indicators
- High surge current density
- Series or parallel connection
- DIN rail mount
- Low cost
- Meets CE specifications
- **20-year warranty**

Models:

Model Name †	Service	Module Type
CCP120*	120VAC, 1Φ, 2W+G	CCP120MOD
CCP120/240*	120/240VAC, 1Φ, 3W+G	CCP120/240MOD
CCP240LLG*	240VAC, 1Φ, 2W+G (no neutral)	CCP240LLGMOD
CCP220**	220VAC, 1Φ, 2W+G	CCP220MOD
CCP230**	230VAC, 1Φ, 2W+G	CCP230MOD
CCP240**	240VAC, 1Φ, 2W+G	CCP240MOD

* UL 1449 Type 4CA ** UL Pending † Add "F" to model name for noise filtering option



Ipeak: up to 40,000A max per mode

UL 1449 4th Ed.
Type 4CA

Made in the

USA



Specifications

- ANSI / IEEE C62.41-2002
- IEC 61643-1-1998
- UL 1449, 4th Edition Type 4CA

MCG Surge - CCP Series

Load Current Max (series connected): 10 Amps

Load Current Max (parallel connected): 20 Amps

Wire Size Max: 16-14 AWG

Dimensions (overall with module plugged in): 1.75"(45mm) W X 2.56"(65mm) H x 4.12"(105mm) D

Surge Current per Mode

I(n): 3kA

For CCPxxx models: 40kA L-N, 40kA L-G, 20kA N-G

For CCP120/240: 20kA L1-N, 20kA L2-N, 20kA L1-G, 20kA L2-G, 20kA N-G

For CCP240LLG: 20kA L1-G, 20kA L2-G, 20kA L1-L2

Operating Temperature: -40°C to +35°C (10 Amps load current)

-40°C to +50°C (8 Amps load current)

Warranty: 20 years

Certifications: UL 1449 4th Edition, Type 4CA, CE

MOV MCOV: 125% nominal line voltage

Model Name	Mode	MLV (Vpk)	MCOV	I(n) kA
CCP120				
	L-N	510	150	3
	L-G	930	300	3
	N-G	930	300	3
CCP120/240				
	L-L	1000	300	3
	L-N	510	150	3
	L-G	930	300	3
	N-G	930	300	3
CCP240LLG				
	L-L	1000	300	3
	L-G	930	300	3

MCG Surge

MODEL: 400 Series

Equipment Level AC Surge Protection

The 400 Series installed at or within a piece of equipment (PLCs, fire alarm monitoring systems, security controls, etc.) provides compact, heavy-duty surge suppression. Now with touch-safe terminal blocks, the units offer an elevated level of personnel protection. Employing a sophisticated combination of brute force surge protection and EMI/RFI filtering, they will prevent damage or malfunction to sensitive equipment.

Standout Feature: OEM Protection



20-Year Warranty

UL 1449 4th Ed.
Recognized Component

Filter Attenuation (50 ohm)	407	415	416	417
-20db	30 kHz	30 kHz	30 kHz	30 kHz
-40db	300 kHz	300 kHz	300 kHz	260 kHz
-60db	1.4 MHz	1.4 MHz	1.0 MHz	700 kHz

400 Series	407*	415*	416*	417*
Rated Voltage (50/50Hz)	120VAC	120VAC	120VAC	240VAC
Rated Current (rms.) @ 25°C	15A	15A	23A	23A
Service (Phase)	1	1	1	1
Stage Current in kA (8/20µs)	10	10	10	10
Clamp Voltage (1mA DC)	270V	270V	270V	500V
UL1449 4th Ed. MLV** (L-N)	480V	480V	480V	890V
UL1449 4th Ed. MLV** (L-G)	540V	590V	590V	1080V
UL1449 4th Ed. MLV** (N-G)	540V	590V	590V	1090V
Surge Energy (Joules) 8/20µs	1460	1140	1140	2300

SPD Type: Type 5 component assembly
In: 3kA

Max. Continuous Operating VAC (MCOV): 115% Rated Line Voltage

Varistor MCOV: 150% (407/415/416); 130% (417) Rated Line Voltage

SCCR: 5kA AIC (with external encl. and OCP)

Response Time: <5 Nanoseconds

Modes of Protection: L-N, L-G, N-G

Surge Current (L-N, 8/20µs): 1 Event: 10kA, 100 Events: 2kA, 1000 Events: 1kA, 10,000 Events: 500A

Status Indicators: Green LED

Wire Gauge Range: 26-10 AWG (0.13-5.27mm squared)

Operating Altitude: 13,000 ft. (4000m)

Temp. (Operating/Storage): -40° to +70°C/-40° to +85°C

Enclosure: High Impact Plastic

Dimensions: 4.95" x 2.85" x 1.25" (126 x 73 x 32mm)

Mounting: 4.20" x 2.25" / .185 ID - 4 holes (107 x 57mm/4.7mm)

Connection: Screw Clamp Terminal Blocks

Screw Torque Max. Weight: 5.3in. lbs./0.6Nm

UL File Number: <1 lb., (.45kg)

Certification: E322161

UL1449 4th Ed. Recognized Component

RoHS Compliant, "-RHS" models only

* Note: For DIN-rail mount unit, add "-DIN" to model name i.e. 415-DIN

For RoHS compliant unit, add "-RHS" to model name i.e. 415-RHS-DIN

Made in the
USA 

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



About MCG Surge Protection

MCG is intensely dedicated to one area – the design, development, and manufacture of highly reliable surge protection devices. Products you can depend on when it counts.

Lightning and power line surges can seriously damage or disrupt operations in hospitals, financial institutions, military installations, and other mission-critical activities. **MCG's AC Power Line, Data Line, DC & Low Voltage surge protectors** protect your sensitive system from damaging transients, thus eliminating "downtime" and its associated financial and lost labor costs.

Our goals are simple and straightforward:

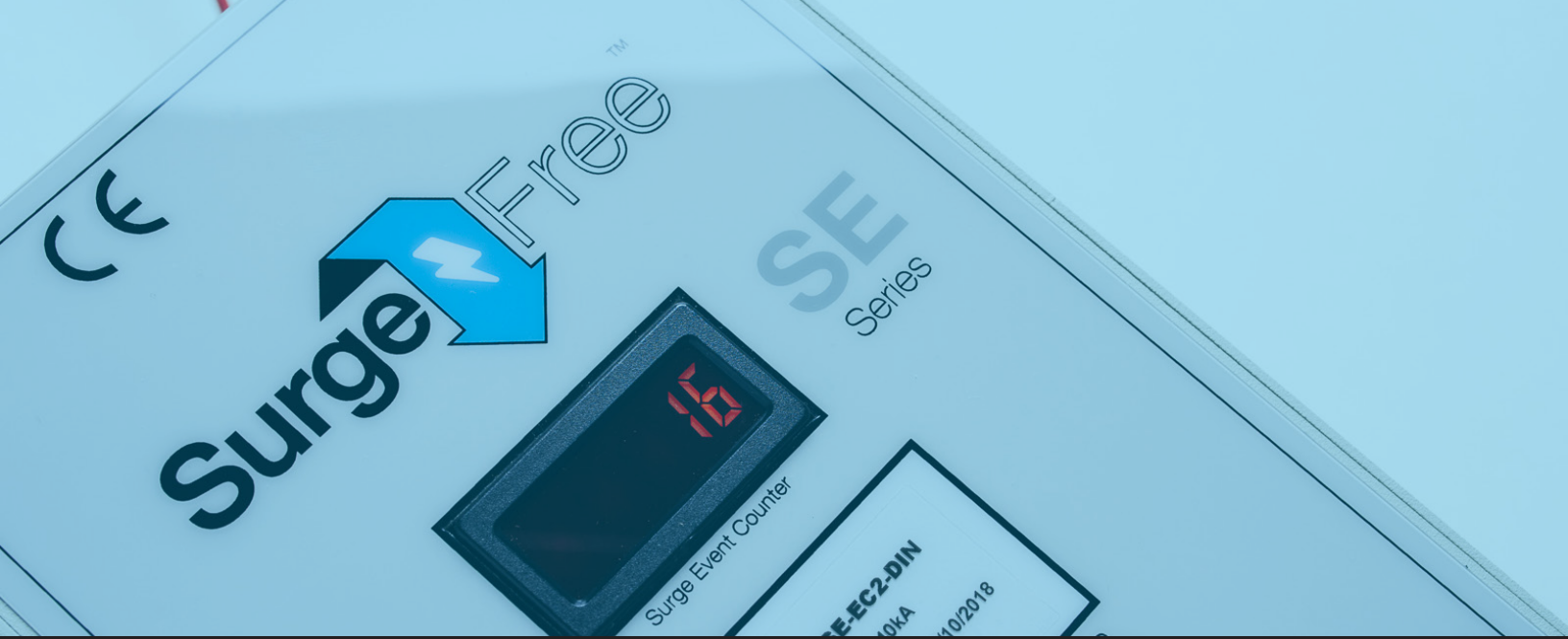
- Build high quality, dependable products
- Provide excellent value for the money
- Supply accurate information for customers to make an informed decision
- Avoid puffing and promotion of spurious benefits
- Stand behind our products with an extraordinary "No Nonsense" warranty (Twenty-Year; lifetime on protection modules).

Before and after sale support from MCG staff. People, not voice mail, solve problems. If you are already a customer, we appreciate your ongoing support of MCG products. If not, the next time you are in the market for surge protectors, consider giving us the opportunity to show you what a company dedicated solely to surge protection can do for you.

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