



SurgeFree™

MODEL

200LS

Main Service Panel Protection

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

FEATURES

- 200LS: I_{peak}=200,000A/Phase (8 x 20μs waveform)
- UL Listed 1449 3rd Ed., NEMA LS1-1992
- Five times redundant protection paths per phase
- Employs new 40kA high headroom varistors with built-in high-speed thermal disconnect
- 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



I_{peak} = 200,000A

UL 1449, 3rd Ed. Listed

20-Year Warranty
Lifetime Module Replacement

Filter Attenuation		120VAC	220 VAC	240VAC	277VAC	347VAC	480VAC
MIL STD 220A (50 Ohm)	-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

Mix & Match!

Options Available: Disconnect Switch • Upgraded Front Panel: Surge Event Counter, Beeper, + Status Relay (1 Form C Contacts) • NEMA 4X Enclosure • Low Impedance Micro-Z cable (10AWG) • Flush mount kit

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 - 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
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° to +70°C/-40° to +85°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:	33 lbs. (15.8 kg)
UL File Number:	E322161
UL Certification:	UL Listed to 1449 3rd Edition
ARRA Certification:	Complies with ARRA 1605 requirements



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Specifications

Main Service Panel Protection

- ANSI/IEEE C62.41-2002
- IEC 61643-1-1998
- UL 1449, 3rd Ed.

Model 200LS

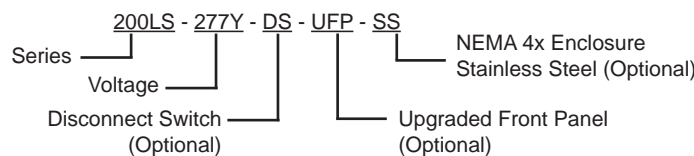
Model 200LS	Service	VPR L-N	VPR L-G	VPR N-G	VPR L-L	6kV (1.2x50μs) 3kA (8x20μs) (L-N)***	20kV (1.2x50μs) 10kA (8x20μs) (L-N)***
-120S	120VAC, 1φ, 2W+Gnd	900	900	800	n/a	506	610
-120T	120/240VAC, 1φ, 3W+Gnd	900	900	800	1200	534	644
-120Y	120/208, 3φ, 4W+Gnd, Wye	900	900	800	1200	534	644
-220Y	220/380, 3φ, 4W+Gnd, Wye	1500	1500	1500	2000	1050	1212
-220S	220VAC, 1φ, 2W+Gnd	1500	1500	1500	n/a	994	1150
-240Y	240/415, 3φ, 4W+Gnd, Wye	1500	1500	1500	2000	1050	1212
-240S	240VAC, 1φ, 2W+Gnd	1500	1500	1500	n/a	994	1150
-277Y	277/480, 3φ, 4W+Gnd, Wye	1500	1500	1500	2000	1050	1212
-347Y	347/600, 3φ, 4W+Gnd, Wye	1800	1800	1500	2500	1320	1510
-240DCT*	240/120/120, 3φ, 4W+Gnd	900/1500**	900/1500**	800	2000/1800** 1200/2000**	1050/534	1212/644
-240D	240, 3φ, 3W+Gnd, Delta	n/a	1500	n/a	2000	1050 (L-G)	1212
-480D	480, 3φ, 3W+Gnd, Delta	n/a	2000	n/a	4000	1598 (L-G)	1800
-600D	600, 3φ, 3W+Gnd, Delta	n/a	2500	n/a	4000	1804 (L-G)	2020

* High-leg Delta Center Tapped

** High-leg

*** Actual Measurements w/6" Lead Length

Model Ordering:



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

Energy Absorption (8/20μs) in joules: 13,248 - 54,000J

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.

A Note On 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).

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