

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 5th 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 5th 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 5th 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
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Specifications: 120/160M

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