

SurgeFree™

MODELS

160M • 120M

Main/Branch Panel Protection

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 the damage, errors and downtime that result from high speed transients. All models have extended headroom and a twenty-year warranty.

FEATURES

- Powerful, redundant surge handling capability:
Model 160M: Ip=160kA, Model 120M: Ip=120kA.
- Field-replaceable, high capability 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.
- Personnel safety deadfront disconnect. (Not available in Delta).
- Surge protected remote relay contacts.
- All modes protected: L-G, L-N, L-L, N-G.
- Filtering standard.
- NEMA 4, Powder Coated Steel Enclosure



Ipeak=160,000A / 120,000A

UL 1449, 2nd Ed. Listed
Including the requirements of Feb 9, 2007



20-Year Warranty
Lifetime Module Replacement

| Filter Attenuation | 120VAC | 240VAC | 277VAC | 480VAC |
|------------------------|--------|--------|--------|--------|
| MIL STD 220A (50 Ohm): | 120kA | 240kA | 277kA | 480kA |
| -30db | 100kHz | 25kHz | 80kHz | 80kHz |
| -40db | 200kHz | 100kHz | 180kHz | 180kHz |
| -50db | 280kHz | 180kHz | 210kHz | 250kHz |
| -60db | 310kHz | 200kHz | 390kHz | 390kHz |

| | |
|-------------------------------|---|
| Surge Current/Phase (8/20µs): | 1 Event - 160M: 160kA. 120M: 120kA. |
| Surge Life/Phase (8/20µs): | 10,000 Events - 160M: 6kA, 120M: 4kA |
| 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° to +70°C/-40° to +85°C |
| Enclosure: | NEMA 4, 14 gauge steel, Powder Coated |
| Dimensions for 160M & 120M: | 12" x 10" x 5" (305 x 254 x 127mm) |
| Mounting for 160M & 120M: | 12.75" x 8"/.313" ID - 4 holes 324 x 203mm/7.9mm ID - 4 holes |
| Micro-Z Cable Connection: | #10 AWG Micro-Z Cable, 8ft. provided |
| Weight (160M): | 23 lbs., (11kg) |
| (120M): | 20 lbs., (9.1kg) |



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Specifications

- ANSI/IEEE C62.41-2002
- IEC 61643-1-1998
- UL 1449, 2nd Ed.
including requirements of Feb 9, 2007

Model 160M

| Model 160M | Service | 16kV, 1.2/50 μ s; 8kA, 8/20 μ s | | | | |
|---------------|---------------------------------|---|----------------------|---------|-----------------------|-----------------------|
| | | Higher Headroom MOVs | UL1449 500A \pm | SPD | SPD+Cable | |
| | | VAC | Clamp V | Clamp V | Let-Thru V 1.0 ft. | Let-Thru V 2.0 ft. |
| -120T | 120/240VAC, 1 ϕ , 3W+Gnd | 180 | 500 | 704 | 857 | 973 |
| -120Y | 120/208, 3 ϕ , 4W+Gnd, Wye | 180 | 500 | 704 | 857 | 973 |
| -220Y | 220/380, 3 ϕ , 4W+Gnd, Wye | 390 | 1000 | 1320 | 1470 | 1583 |
| -240Y | 240/415, 3 ϕ , 4W+Gnd, Wye | 390 | 1000 | 1320 | 1470 | 1583 |
| -240D | 240, 3 ϕ , 3W+Gnd, Delta | 390 | 1000 | 1320 | 1470 | 1583 |
| -240DCT* | 240/120/120, 3 ϕ , 4W+Gnd | 390/180 | 1000/500 | 1704 | 1470/857 | 1583/973 |
| -277Y | 277/480, 3 ϕ , 4W+Gnd, Wye | 390 | 1000 | 1320 | 1470 | 1583 |
| -347Y | 347/600, 3 ϕ , 4W+Gnd, Wye | 460 | 1200 | 1336 | 1483 | 1593 |
| -480D | 480, 3 ϕ , 3W+Gnd, Delta | 620 | 1500 | 2080 | 2224 | 2332 |

* High-leg Delta Center Tapped

Energy Absorption (8/20 μ s) in joules: 10,300J - 37,400J

Model 120M

| Model 120M | Service | 10kV, 1.2/50 μ s; 5kA, 8/20 μ s | | | | |
|---------------|---------------------------------|---|----------------------|----------|-----------------------|-----------------------|
| | | Higher Headroom MOVs | UL1449 500A \pm | SPD | SPD+Cable | |
| | | VAC | Clamp V | Clamp V | Let-Thru V 1.0 ft. | Let-Thru V 2.0 ft. |
| -120T | 120/240VAC, 1 ϕ , 3W+Gnd | 180 | 500 | 560 | 658 | 731 |
| -120Y | 120/208, 3 ϕ , 4W+Gnd, Wye | 180 | 500 | 560 | 658 | 731 |
| -220Y | 220/380, 3 ϕ , 4W+Gnd, Wye | 390 | 1000 | 1140 | 1228 | 1294 |
| -240Y | 240/415, 3 ϕ , 4W+Gnd, Wye | 390 | 1000 | 1140 | 1228 | 1294 |
| -240D | 240, 3 ϕ , 3W+Gnd, Delta | 390 | 1000 | 1140 | 1228 | 1294 |
| -240DCT* | 240/120/120, 3 ϕ , 4W+Gnd | 390/180 | 1000/500 | 1140/560 | 1228/658 | 1294/731 |
| -277Y | 277/480, 3 ϕ , 4W+Gnd, Wye | 390 | 1000 | 1140 | 1228 | 1294 |
| -347Y | 347/600, 3 ϕ , 4W+Gnd, Wye | 460 | 1200 | 1210 | 1296 | 1361 |
| -480D | 480, 3 ϕ , 3W+Gnd, Delta | 620 | 1500 | 1800 | 1873 | 1929 |

* High-leg Delta Center Tapped

Energy Absorption (8/20 μ s) 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.