

# Powerware® TVSS (Transient Voltage Surge Suppression) ZoneMasterPlus

## Features

### ZoneMasterPlus

- ▶ Replaceable modules
- ▶ Full protection redundancy
- ▶ Module diagnostics
- ▶ Remote indication capabilities
- ▶ NO/NC dry contacts
- ▶ NEMA rated enclosures
- ▶ Ultra low impedance construction
- ▶ Thermal fusing
- ▶ Ten year warranty
- ▶ Patented technology (#5,311,393)
- ▶ UL 1449 2nd edition Listed

### Optional Features

- ▶ UL1283 Listed extended range power filter
- ▶ Multi-mode surge counter
- ▶ Audio/Visual alarm annunciator panel
- ▶ Silicon avalanche diode modules

## Product Snapshot

Up to 600,000A surge capacity per mode  
Up to 300,000A maximum surge current per mode  
Up to 200,000A in repetitive surge current  
Up to 5,800A in long duration surge current  
Model rating dependent – charts for specific rating information



Invensys Power Systems, the world leader in innovative power protection solutions, adds yet another product to its arsenal of availability-enabling solutions – the Powerware TVSS ZoneMasterPlus. The ZoneMasterPlus' innovative modular design allows for upgradability on site while still providing surge suppression capabilities up to 600,000 amps per phase. Housed in a small, lightweight footprint, this powerful solution is easy to install and provides better protection because it is mounted closer to the protected panel.

Powerware TVSS products provide decades of uninterrupted surge protection with their unique patented technology. Upgradability, redundancy, module diagnostics and easily replaceable modules are just a few features that set the ZoneMasterPlus apart from the other devices.

The measurement of any surge protection device is how well it controls surges. The Powerware TVSS ZoneMasterPlus patented large block MOV technology achieves the highest control of all transients. Because of its innovative design, the Powerware ZoneMasterPlus' performance actually improves as the severity of the surge increases.

## Electrical Specifications

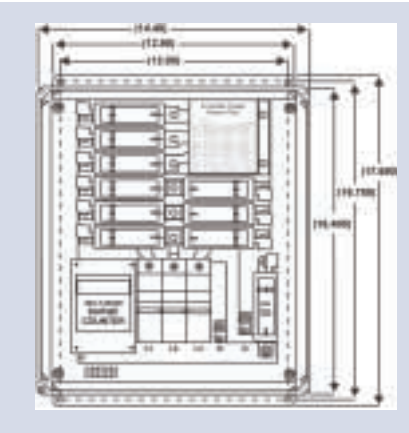
Powerware ZoneMasterPlus can be specified with full ten mode protection and surge current ratings up to 600,000A (8/20ms). Even more useful is the fact that models can be upgraded on site at any time. A Powerware ZoneMasterPlus 150 can be upgraded to a 450 or even a 600. This degree of flexibility is an industry first.

Models	Maximum Surge Current in Each Protection Mode				Maximum Surge Current
	L-N	L-G	L-L	N-G	Per Phase
ZoneMasterPlus 150	150,000A	----	150,000A	75,000A	150,000A
ZoneMasterPlus 250	125,000A	125,000A	250,000A	75,000A	250,000A
ZoneMasterPlus 300	150,000A	150,000A	300,000A	75,000A	300,000A
ZoneMasterPlus 450	300,000A	150,000A	450,000A	75,000A	450,000A
ZoneMasterPlus 600	300,000A	300,000A	600,000A	75,000A	600,000A

General	
Maximum Continuous Operating Voltage:	25% above nominal
Remote Indication Contacts:	NO/NC, rated 125VAC, 2A
Module Diagnostics:	Green LED Mechanical (fuse link operated) flag Red LED
Standard Fused Disconnect:	600VAC 200,000A RMS Symmetrical Rating 200,000 AIC fusing
Redundant Protection Stages In All Modes:	Each module contains dual independent redundant protection circuits

## Mechanical Specifications

Powerware ZoneMasterPlus is 20% to 50% smaller in size than other protectors claiming similar performance. Small size means easier installation closer to the panel, minimizing the effect of connecting lead length.

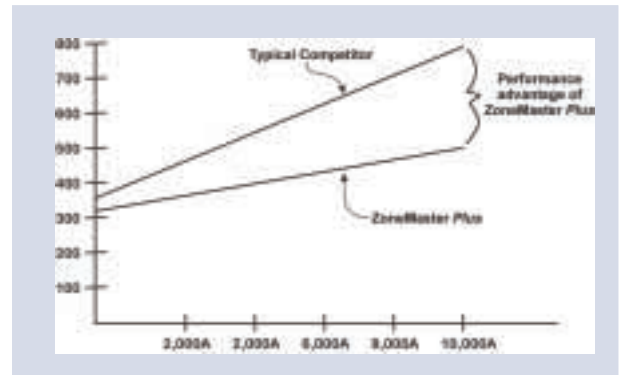


Specifications	
Enclosure:	NEMA 1, 2, 3, 3S, 4, 4X, 12, and 13. Transparent cover for maximum visibility and safety.
Dimensions:	16" x 14" x 7" (42cm x 37cm x 18cm)
Weight:	Approx. 20 lbs.
Operating Environment:	-40°C to 85°C, 95% relative humidity (non-condensing)
Construction:	Ultra low impedance assembly. Modules are bolted to a corrosion resistant, tin plated copper bus bar. No plug-in modules in the surge path.
Terminal Lugs:	#2 AWG max wire size
Mounting:	0.31" diameter holes (16.75" x 12.00") (enclosure can be easily drilled for cable access)
Module Replacement:	Remove two bolts, unplug remote indication connector and remove module. Estimated replacement time: 2 minutes.
Module Dimensions:	1.25" x 5.3" x 2.5" (3.2cm x 13.5cm x 6.4cm)

## Surge Protection Performance

The key performance parameter of any surge protector is how well it controls surges. At the service entrance and main panel, the lower the voltage let-through to the facility, the better the protection. A high let-through voltage at the facility entrance will stress other equipment and small surge protectors located within the facility.

Powerware ZoneMasterPlus' patented large block MOV technology achieves excellent control of all transients. As the severity of the incoming surge increases, the performance of the Powerware ZoneMasterPlus actually improves when compared to competitive products.



ANSI/IEEE C62.41 test surge current

1449 Listed  
Second Edition

## Duty Cycle Performance (Surge Life) Per Mode (e.g. L-N or L-G)

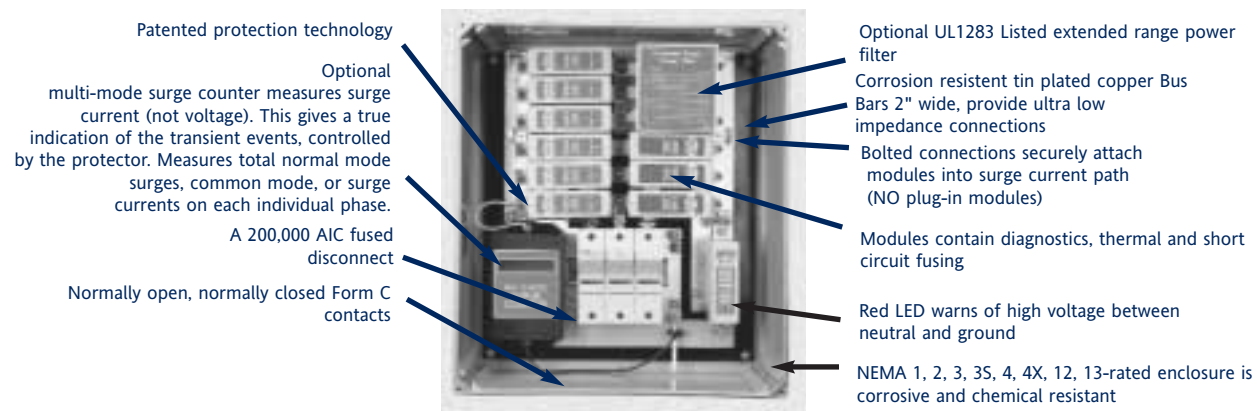
The extensive, independent testing performed on the Powerware ZoneMasterPlus with multiple test waveforms shows that ZoneMasterPlus will tolerate and protect against the most severe electrical environments. This evidence is supported by extensive field experience in areas known for lightning activity such as Africa and the Far East. Powerware's Ten Year, no-fuss warranty reflects our experience and confidence.

Models	Maximum Surge Current Per Mode	Repetitive Surge Current (>4 Impulses Per Mode)	Maximum Number of Current Impulses at 10,000A (8/20)	Long Duration Surge Current (10/1,000ms)
ZoneMasterPlus Series 150	150,000A	100,000A	2,500	2,900A
ZoneMasterPlus 250	125,000A	100,000A	2,500	2,900A
ZoneMasterPlus 300	150,000A	100,000A	2,500	2,900A
ZoneMasterPlus 450	300,000A	200,000A	3,500	5,800A
ZoneMasterPlus 600	300,000A	200,000A	3,500	5,800A

Note: Maximum surge current ratings and repetitive ratings are the result of independent testing.

## Example of ZoneMasterPlus

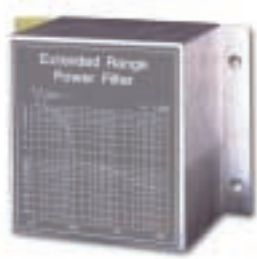
Builds on the ZoneMaster® technology patented in 1991 and now in use throughout the world in some of the highest lightning activity areas.



## Optional Features

### Silicon Avalanche Diode Modules

Powerware ZoneMasterPlus can be configured with modules using Silicon Avalanche Diode technology. These modules can be used alone or mixed with MOV modules. The primary advantage of silicon is a low let-through voltage.



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Size: 5.3" x 4" x 1.5"  
(13.5cm x 10.2cm x 3.8cm)

### Extended Range Power Filter Module

The unique filter module eliminates a broad range of load or line generated high frequency noise. Bi-directional in performance, this option complements the performance of any Powerware ZoneMasterPlus.

### Multi-Mode Surge Counter

The optional surge counter, unlike many competitive products, actually counts the number of times a surge current is being discharged when a transient is suppressed. Many competitive products count only voltage impulses. These counters show the number of transient voltages that exceed the manufacturer's predetermined counter threshold, but not how many times the protector has controlled the transient. Every time a surge protector controls a transient voltage, surge current is discharged. Therefore, by counting only the surge current that is discharged, Powerware ZoneMasterPlus actually counts the number of times it has worked.

### Audio/Visual Alarm Annunciator Panel

The optional alarm annunciator panel offers clear audio/visual indication of the status of the Powerware ZoneMasterPlus unit and a flexibility not offered by "built-in" products. This alarm panel can be installed adjacent to the Powerware ZoneMasterPlus unit or, if more convenient, remote installation is just as easy.

## Electrical Specifications

SAD Modules	ANSI/IEEE C 62.41 ANSI/IEEE C 62.45			
	B1	B2	B3	C3
Product Series				
ZoneMasterPlus SAD*	253V	287V	317V	450V

\*Configured with two SAD modules per phase. Consult factory for configuration options when ordering.



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## 10 Year No Fuss Warranty If it fails, we replace it immediately!

In the event that any component or subassembly within the unit fails to perform as specified during the Ten-Year Warranty period, just call our customer hot line, (800)843-9433, to obtain a Return Authorization Number. A replacement unit will immediately be shipped free of charge (installation labor and site preparations excluded). The defective unit must be returned to Powerware Corporation within 21 days of receiving the replacement. It's just that simple.

## No Hidden Limits – No Nonsense

Note: This warranty excludes the SAD modules which are 10 years or two free replacements, whichever comes first.

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