

## Features

### ZoneMaster

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

### ZoneSentinel

- ▶ Replaceable modules
- ▶ Remote indication
- ▶ NO/NC dry contacts
- ▶ NEMA rated enclosures
- ▶ Ultra low impedance construction
- ▶ Extended range power filter
- ▶ Ten year warranty
- ▶ Patented technology (#5,311,393)
- ▶ UL1449 2nd edition Listed

### ZoneDefender

- ▶ Solid state diagnostics
- ▶ Ten mode protection
- ▶ Remote indication
- ▶ Low impedance construction
- ▶ Ten year warranty
- ▶ UL1449 2nd edition Listed

## Powerware® TVSS (Transient Voltage Surge Suppression) ZoneMaster, ZoneSentinel, ZoneDefender

### Product Snapshot

**ZoneMaster 250 & 300** - Up to 300,000A surge capacity per phase

**ZoneMaster 150** - Up to 150,000A surge capacity per phase

**ZoneSentinel** - Up to 90,000A surge capacity per phase

**ZoneDefender** - Up to 70,000A surge capacity per phase



Invensys Power Systems, the innovative manufacturer of end-to-end power protection and management solutions, has introduced surge suppression devices to further insure the availability and reliability of your complex network systems. The Powerware TVSS line of products, the ZoneMaster, ZoneSentinel and ZoneDefender, are designed and engineered to protect critical systems from the most severe transients.

Powerware TVSS products provide complete facility protection at all levels, and its patented technology assures decades of uninterrupted surge protection. Full redundancy, module diagnostics and easily replaceable modules are all features that you have come to expect from the leader in power protection solutions.



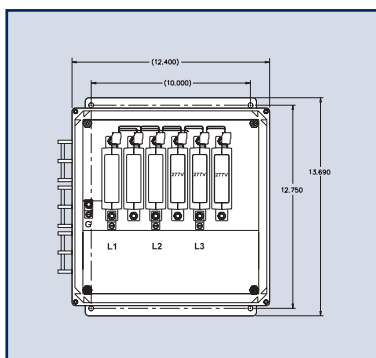
## Powerware TVSS -ZoneMaster 250 & 300

Designed and engineered to protect from the most severe transients, including lightning, at the main service entrance. The four redundant independent stages of protection, for each phase, provide the first line of facility defense.



Electrical Specifications		Powerware ZoneMaster 250	
Maximum Surge Current Capacity:	L - N	250,000A (8/20 ms)	300,000A (8/20 ms)
	L - L	250,000A (8/20 ms)	300,000A (8/20 ms)
	N - G	75,000A (8/20 ms)	75,000A (8/20 ms)
Duty Cycle Performance: (Surge Life)	200,000A (8/20 ms)	>2 impulses	>4 impulses
	10,000A (8/20 ms)	>3,000 impulses	>3,500 impulses
	200A (8/20 ms)	infinite	infinite
Long Duration Current Pulse (10/1,000ms) Capability:		5,000A	5,500A

Powerware ZoneMaster 250 & 300 Shared Specifications		
Maximum Continuous Operating Voltage:		25% above nominal
Remote Indication Contacts:		NO/NC 125VAC 2A rated
Module Diagnostics:	Protection present	Green LED
	Fault warning	Mechanical (fuse link operated) flag
	High voltage neutral to ground	Red LED
Protection Technology:		Patented large block, three terminal MOV
Module Protection:		Dual thermal and short circuit fusing mechanisms, UL94-5V rated plastic enclosure
EMI/RFI Noise Attenuation:		75db Maximum 100kHz to 100MHz



Mechanical Specifications
Enclosure: Durable, lightweight, corrosion resistant high impact plastic. Ultraviolet stabilized UL94-5V rated NEMA 1, 2, 3, 3S, 4, 4X, 12, and 13. Transparent cover for maximum visibility and safety.
Dimensions: 12" x 12" x 6" (31cm x 31cm x 15.5cm)
Weight: Approx. 12 lbs (5.5kg)
Operating Environment: -40°C to 85°C, 95% relative humidity (non-condensing)
Construction: Low impedance assembly. Modules are bolted (1/4" bolts) to a large surge return plate to minimize transient impedance and suppression voltage.
Terminal Lugs: # 2 AWG max wire size
Mounting: 4" x 0.31" diameter holes (12.75" x 10.00") (enclosure can be easily drilled for cable access)
Module Replacement: Remove two 1/4" nuts, 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)



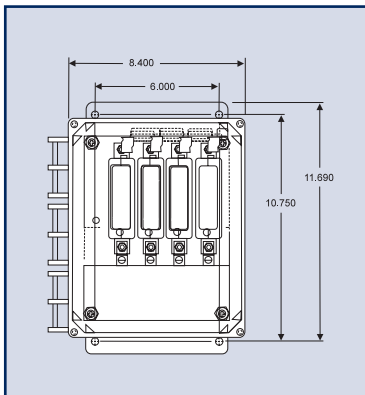
## Powerware TVSS - ZoneMaster 150

Providing large service entrance panels with decades of protection from the most severe transients. The dual protection circuits provide redundancy to ensure your facility is never unprotected.



### Electrical Specifications

<b>Maximum Surge Current Capacity Per Phase:</b>		150,000A (8/20 ms)
<b>Maximum Surge Current Capacity:</b>	<b>L - N</b>	150,000A (8/20 ms)
	<b>L - L</b>	150,000A (8/20 ms)
	<b>N - G</b>	75,000A (8/20 ms)
<b>Duty Cycle Performance:</b> <b>(Surge Life)</b>	<b>100,000A (8/20 ms)</b>	> 4 Impulses
	<b>10,000A (8/20 ms)</b>	> 2,500 impulses
	<b>150A (8/20 ms)</b>	infinite
<b>Maximum Continuous Operating Voltage:</b>		25% above nominal
<b>Remote Indication Contacts:</b>		NO/NC 125VAC 2A rated
<b>Module Diagnostics:</b>	<b>Protection present</b>	Green LED
	<b>Fault warning</b>	Mechanical (fuse link operated) flag
	<b>High voltage neutral to ground</b>	Red LED
<b>Protection Technology:</b>		Patented large block, three terminal MOVs
<b>Module Protection:</b>		Dual thermal and short circuit fusing mechanisms, UL94-5V rated plastic enclosure.
<b>EMI/RFI Noise Attenuation:</b>		75dB Maximum 100kHz to 100MHz



### Mechanical Specifications

**Enclosure:** Durable, lightweight, corrosion resistant, high impact plastic. Ultraviolet stabilized UL94-5V rated NEMA 1, 2, 3, 3S, 4, 4X, 12, and 13. Transparent cover for maximum visibility.

**Dimensions:** 10" x 8" x 4" (25cm x 20cm x 10cm)

**Weight:** Approx. 7lbs (3.2kg)

**Operating Environment:** -40°C to 85°C, 95% relative humidity (non-condensing)

**Construction:** Low impedance assembly. Modules are bolted (1/4" bolts) to a large surge return plate to minimize transient impedance and suppression voltage.

**Terminal Lugs:** # 2 AWG max wire size

**Mounting:** 4" x 0.31" diameter holes (10.75" x 8.00") (enclosure can be easily drilled for cable access)

**Module Replacement:** Remove two 1/4" nuts, 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)



## Powerware TVSS - ZoneSentinel

A high capacity, cost effective solution for the distribution boards and smaller service entrance locations. When combined with the ZoneMaster provides the lowest suppression voltage available today.

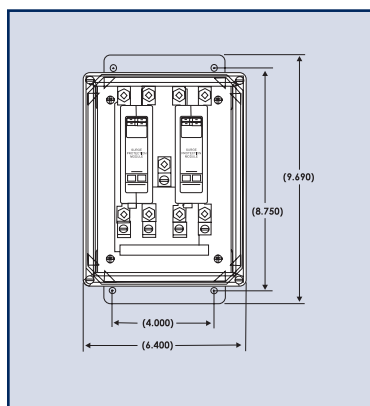


1449 Listed  
Second Edition

### Electrical Specifications

<b>Maximum Surge Current Capacity Per Phase:</b>		90,000A (8/20 ms)
<b>Maximum Surge Current Capacity:</b>	<b>L - N</b>	45,000A (8/20 ms)
	<b>L - L</b>	45,000A (8/20 ms)
	<b>L - G</b>	45,000A (8/20 ms)
	<b>N - G</b>	45,000A (8/20 ms)
<b>Duty Cycle Performance:</b> <b>(Surge Life)</b>	<b>45,000A (8/20 ms)</b>	> 4 Impulses
	<b>10,000A (8/20 ms)</b>	> 1,500 impulses
	<b>100A (8/20 ms)</b>	infinite
<b>Maximum Continuous Operating Voltage:</b>		25% above nominal
<b>Remote Indication Contacts:</b>		NO/NC 125VAC 2A rated
<b>Module Diagnostics:</b>	<b>Protection present</b>	Green LED
	<b>Fault warning</b>	Mechanical (fuse link operated) flag
	<b>High voltage neutral to ground</b>	Red LED
<b>Protection Technology:</b>		Patented large block, three terminal MOV
<b>Module Protection:</b>		Dual thermal and short circuit fusing mechanisms, UL94-5V rated plastic enclosure
<b>EMI/RFI Noise Attenuation:</b>		75dB Maximum 100kHz to 100MHz

**Notes:** Surge current capacities are the results of independent testing on complete units, including all fusing mechanisms.



### Mechanical Specifications

**Enclosure:** Durable, lightweight, corrosion resistant, high impact plastic. Ultraviolet stabilized UL94-5V rated NEMA 1, 2, 3, 3S, 4, 4X, 12, and 13. Transparent cover for maximum visibility.

**Dimensions:** 8" x 6" x 4" (20cm x 16cm x 10cm)

**Weight:** Approx. 4lbs (1.8kg)

**Operating Environment:** -40°C to 85°C, 95% relative humidity (non-condensing)

**Construction:** Low impedance assembly. Modules are bolted (1/4" bolts) to a large surge return plate to minimize transient impedance and suppression voltage.

**Terminal Lugs:** #2 AWG max wire size

**Mounting:** 4" x 0.31" diameter holes (8.75" x 4.00")

(enclosure can be easily drilled for cable access)

**Module Replacement:** Remove four 1/4" nuts, unplug remote indication connector and remove module. Estimated replacement time 2.5 minutes.

**Module Dimensions:** 1.25" x 5.3" x 2.5" (3.2cm x 13.5cm x 6.4cm)

# Powerware TVSS - ZoneDefender

For residential, interior lighting or small distribution panels, completes a facilities surge protection picture.



Electrical Specifications		
Maximum Surge Current Capacity Per Phase:		70,000A (8/20 ms)
Maximum Surge Capacity:	L-N	35,000A (8/20 ms)
	L-L	35,000A (8/20 ms)
	L-G	35,000A (8/20 ms)
	N-G	18,000A (8/20 ms)
Duty Cycle Performance:	70,000A 8/20 ms	1 impulse
	10,000A 8/20 ms	>1000 impulses
	100A 8/20 ms	infinite
Remote Indication:		Normally Closed Rated 2A, 125Vac
Status Indication:	Protection Present:	Green LED ON
	Internal Failure:	Green LED OFF
Safety Fusing:		Thermal & Short Circuit Fusing

## Mechanical Specifications

Enclosure:	Durable , lightweight, corrosion resistant high impact plastic	
	NEMA 1, 2, 3, 3R, 4, 4X, 12 and 13.	
Dimensions:	3 phase	5.3" x 5.3" X 2.3"
	2 phase	4.5" X 2.9" X 2.5"
	1 phase	4.5" X 2.9" X 2.5"
Weight:	3 phase	3.6 lb.
	2 phase	2.0 lb.
	1 phase	1.9 lb.
Connection:	#12 AWG stranded (approx. 18")	
Mounting:	Surface mount via 4" x 0.21" diameter holes	
	Close nipple via 1/2" nipple	
	Flush mount via mounting plate	
	(optional at time of ordering)	





## Remote Indication Capability

Powerware offers an optional remote monitoring unit, capable of monitoring the status of all panel-mounted surge protectors in the facility. The remote monitoring unit provides audio and visual indication of protector status in one compact wall mounting case.

### Specifications

**Dimensions:** 5.5" x 4" x 1.5" (13.5cm x 10cm x 4cm)

**Weight:** Approx. 1 lb.

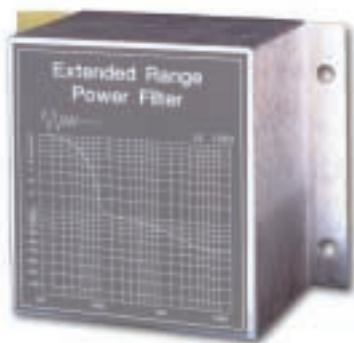
**Indication:** Protection present: bright green LED

**Fault Indication:** Bright red LED, audible alarm

**Functions:** Test switch (checks monitoring circuitry), audio alarm silence

**Connections:** Accepts wires up to #14 AWG

**Order#:** PT11000



## 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.

## 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 Numbers. A replacement unit will immediately be shipped free of charge (installation labor and site preparations excluded). The defective unit must be returned to Powerware within 21 days of receiving the replacement. It's just that simple.

No Hidden Limits – No Nonsense

Invensys Power Systems  
8609 Six Forks Road  
Raleigh, NC 27615 U.S.A.  
Toll Free: 1.877.797.9273  
or 919.872.3020  
Fax: 1.800.753.9433  
www.invensys-power.com

Europe/Middle East/Africa  
Berkshire, England: 44.1753.608700

Southeast Asia  
Singapore: 65-8610377

China and North Asia  
Hong Kong: 852.2745.6682

Japan  
Shinagawa Tokyo: 813.3447.5251

Australia and South Pacific  
Sydney, Australia: 612..9878.5000

Canada  
Toronto, Ontario: 416.798.0112

Brazil  
Sao Paulo, Brazil:  
55.11.3933.8555/855.8500

Mexico  
Col. Napoles C.P.,  
Mexico 525.527.61.69/  
525.488.33.33

