

Powerware® TVSS

Features

Powerware's comprehensive line of TVSS products provides complete protection from the most severe transients, from the facility entrance to the outlet.

- ▶ Patented MOV technology ensures excellent control of all transients for high system availability
- ▶ Modular design means:
 - solutions can be tailored to meet site-specific needs
 - easy, on-site upgrades
- ▶ Comprehensive 10-year warranty is the best in the industry. If any module fails within 10 years, it will be replaced.....no questions asked.



Powerware TVSS products provide decades of uninterrupted surge protection with their unique patented MOV technology. With their sturdy design, wide variety of configuration options and reliable technology, Powerware TVSS are an important part of ensuring your overall system availability.

Powerware ZoneMaster Plus and Powerware ZoneMaster

Designed for use in protecting an entire facility or large area from transients. These TVSS solutions are typically situated at the service entrance and major distribution panels, providing a first line of defense against surges and spikes that can wreak havoc on critical systems.



- ▶ **Powerware ZoneMaster Plus** features large block MOV technology that provides maximum control over all transients. One of the industry's only custom-configurable designs with ratings from 150kA to 600kA, the ZoneMaster Plus can be easily upgraded on-site, and modules can be easily replaced by removing the two mounting bolts. Large surface area bus plates ensure ultra low impedance to fast-rise time transients. Standard features include a 200kAIC fused disconnect, form-C contacts for remote module diagnostics, and multiple visual indicators of module status. Options include an internally mounted UL1283 EMI/RFI, multimode surge counter, remote monitoring unit and Silicone Avalanche Diode (SAD) modules, which further reduce the "let-through" voltage.

- ▶ **Powerware ZoneMaster 250 & 300** use the same large block MOVs with a tested surge capacity of up to 300kA, which assures a high level of protection from the most severe lightning strikes. Four redundant independent stages of protection are included for each phase to provide the ultimate in protection redundancy. And because the ZoneMaster 250 & 300 series is 50% smaller than competitive devices, it is ideal when space is at a premium. This series standard features include ultra low impedance construction, replaceable bolt-in modules, remote indication capability and visual module diagnostics. Options include a UL1283 EMI/RFI filter and remote monitoring unit.



► **Powerware ZoneMaster All Mode** provides the lowest suppression voltages available when all four modes of protection (line-neutral, line-ground, line-line, and neutral-ground) are a requirement. Available in either 90kA or 150kA surge capacity per mode (180kA or 300kA per phase), with standard features including replaceable bolt-in modules, low impedance construction, visual module diagnostics and remote indication capability. Options include UL 1283 EMI/RFI filter and remote monitoring unit.

► **Powerware ZoneMaster 150** features 150kA per phase capability in a very small footprint for those sites with extremely limited wall space. This series' standard features include ultra low impedance construction, replaceable bolt-in modules, remote indication capability and visual module diagnostics. Options include an integral fused disconnect, UL1283 EMI/RFI filter and remote monitoring unit.



► **Powerware ZoneMaster PE** (panel extension) series has been designed for those applications where there may not be room on the side of a panelboard for an external surge protector. These units have been designed to easily retrofit onto all of the major brands of branch panels, including Square D, General Electric and Siemens. Standard units come in either 90kA or 150kA per mode (180kA or 300kA per phase) ratings and include replaceable bolt-in modules, UL1283 EMI/RFI filter, surge counter, fault monitor and audio alarm. Optional features include a main lug, 200kAIC main disconnect, and remote monitoring unit. The PE Series can also be installed as a standalone device adjacent to the electrical panel.



Powerware ZoneSentinel and Powerware ZoneDefender

Designed to protect critical equipment and applications from transients initiated inside the facility, the Powerware ZoneSentinel and Powerware ZoneDefender are typically situated before and/or after the UPS and power distribution units.

► **Powerware ZoneSentinel** provides modular, cost-effective, high capacity surge protection for small service entrances or distribution panel boards. When used at a distribution panel, in combination with a ZoneMaster at the service entrance, ZoneSentinel provides the lowest suppression voltage available today, as well as full protection in all modes. Rated at 90kA, the standard features include bolt-in replaceable modules, low impedance construction, remote indication capability and visual module diagnostics. Options include a UL1283 EMI/RFI filter and remote monitoring unit.





► **Powerware ZoneDefender and Powerware ZoneDefender Plus** are specifically engineered to protect interior lighting and small distribution panels. Designed for small spaces or attachment to the side of a panel board these units are an easy fit in any location. These models are available for either single- or three-phase applications, with the Plus series offering 150kA of protection and the standard ZoneDefender 80kA. Standard features include low impedance construction, LED module diagnostics, close nipple mount and remote indication capability. Options include flush mount capability and remote monitoring unit. The Plus series also offers optional SAD devices to limit let-through even lower than the standard unit.

Options:

► **Remote Monitoring Unit** offers a clear audio/visual indication of the monitored Powerware TVSS. The unit can be easily wall mounted and features red and green LED status indicators and a 90dB audible alarm, with both test and silence switches.



► **Extended Range Power Filter** offers high performance, bi-directional filtering for any ZoneMaster or ZoneSentinel product. The UL 1283 filter attenuates up to -75dB in the 100kHz to 100MHz frequency range. The filter performs sine wave tracking so precision attenuation of transients at any point on the sine wave can be accomplished. Tested to the ANSI/IEEE ringwave standard, the filter performed with a peak recorded let-through of only 200V. This 75dB attenuation equals a 5600-fold reduction in noise.



Independently tested high current suppressed voltage levels (8/20μWaveform)								
Test Current	Module voltage	ZoneMaster 250/300	ZoneMaster 150	ZoneMaster All-Mode (300kA)	ZoneMaster All-Mode (180kA)	ZoneMaster PE (300kA)	ZoneMaster PE (180kA)	Zone Sentinel
150,000	120	1300	X	1300	X	1300	X	X
150,000	277	1790	X	1790	X	1790	X	X
100,000	120	956	X	956	X	956	X	X
100,000	277	1490	X	1490	X	1490	X	X
90,000	120	X	X	X	1210	X	1210	1210
90,000	277	X	X	X	1750	X	1750	1750
75,000	120	X	1110	X	X	X	X	X
75,000	277	X	1630	X	X	X	X	X
50,000	120	673	816	673	X	673	X	X
50,000	277	1140	1340	1140	X	1140	X	X
45,000	120	X	X	X	808	X	808	808
45,000	277	X	X	X	1240	X	1240	1240
25,000	120	X	584	X	X	X	X	X
25,000	277	X	1100	X	X	X	X	X

The Large Block MOV Advantage

The patented, large block three terminal MOVs (40mm) used in the Powerware ZoneMaster Plus, ZoneMaster and ZoneSentinel series of TVSS, withstand the real surge environment. These MOVs are the same diameter as those used in high-voltage arrestors for the past 30 years. The modules are independently tested to 150kA, including all fusing mechanisms. The MOVs use a three-leg terminal design, which permits the paralleled MOVs to be formed from the same slice of zinc oxide so that any transient events are shared evenly between the paralleled devices. Some competitive devices using paralleled, off-the-shelf 18mm or 20mm MOVs could have large tolerance

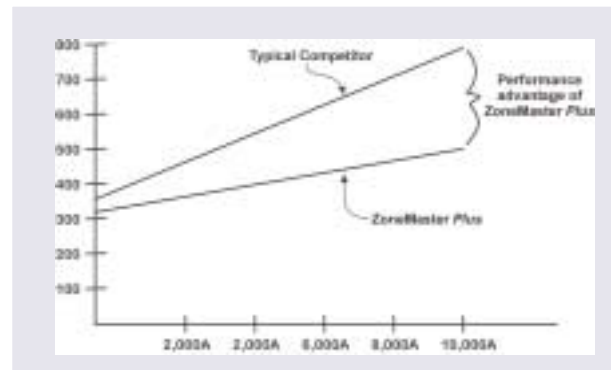
differences, and could fail under the smallest transient event. Additionally, the patented Eutectic alloy thermal fusing used in the ZoneMaster and ZoneSentinel modules stands up to lightning surge levels, unlike the standard thermal fusing used in competitive products which could fail in events less than 10kA. A fuse failure means critical equipment is exposed to dangerous transients until the device is replaced. Each module enclosure is UL-94 5V-rated, and features two independent protection stages. All of these unique features add up to the ability to withstand long duration surges, translating into high reliability and system availability.



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

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, which ever comes first.

		Let-through voltage levels ANSI/EEE C62.41, ANSI/IEEE C62.45				Maximum Surge Current in each protection mode (8/20µs)					Independently-tested UL1449 suppressed voltage ratings				Duty Cycle Performance (Surge Life)			
Model #	Service voltage	CAT B1 1000A	CAT B2 2000A	CAT B3 3000A	CAT C3 10,000A	Per phase I MAX	L to L kA	L to N kA	L to G kA	N to G kA	L to L	L to N	L to G	N to G	Max Surge I per mode kA	Repetitive surge I >4 impulses kA	Max number of I impulses @ 10kA (8/20 per mode)	Long duration surge I (10/1000us) Amps
ZM Plus 600	PT18500 120/240V 3 Wire, Split Phase	297	327	357	500	600	600	300	300	75	800	400	400	400	300	200	3500	5800
	PT18501 208Y/120V 4 Wire, 3 Phase	297	327	357	500	600	600	300	300	75	800	400	400	400	300	200	3500	5800
	PT18502 240/120 4 Wire Delta, 3 Phase	297	327	357	500	600	600	300	300	75	800	400	400	400	300	200	3500	5800
	PT18504 480Y/277V 4 Wire, 3 Phase	640	690	726	900	600	600	300	300	75	1500	800	800	400	300	200	3500	5800
	PT18507 380Y/220V 4 Wire, 3 Phase	640	690	726	900	600	600	300	300	75	1500	800	800	400	300	200	3500	5800
	PT18508 415Y/240 4 Wire, 3 Phase	640	690	726	900	600	600	300	300	75	1500	800	800	400	300	200	3500	5800
ZM Plus 450	PT18400 120/240V 3 Wire, Split Phase	300	333	360	517	450	450	300	150	75	700	330	330	400	300	200	3500	5800
	PT18401 208Y/120V 4 Wire, 3 Phase	300	333	360	517	450	450	300	150	75	700	330	330	400	300	200	3500	5800
	PT18402 240/120 4 Wire Delta, 3 Phase	300	333	360	517	450	450	300	150	75	700	330	330	400	300	200	3500	5800
	PT18404 480Y/277V 4 Wire, 3 Phase	653	693	733	916	450	450	300	150	75	1500	700	700	400	300	200	3500	5800
	PT18407 380Y/220V 4 Wire, 3 Phase	653	693	733	916	450	450	300	150	75	1500	700	700	400	300	200	3500	5800
	PT18408 415Y/240 4 Wire, 3 Phase	653	693	733	916	450	450	300	150	75	1500	700	700	400	300	200	3500	5800
ZM Plus 300	PT18300 120/240V 3 Wire, Split Phase	307	340	373	533	300	300	150	150	75	700	330	330	400	150	100	2500	2900
	PT18301 208Y/120V 4 Wire, 3 Phase	307	340	373	533	300	300	150	150	75	700	330	330	400	150	100	2500	2900
	PT18302 240/120 4 Wire Delta, 3 Phase	307	340	373	533	300	300	150	150	75	700	330	330	400	150	100	2500	2900
	PT18304 480Y/277V 4 Wire, 3 Phase	653	706	740	950	300	300	150	150	75	1500	700	700	400	150	100	2500	2900
	PT18305 600Y/347V 4 Wire, 3 Phase	980	1000	1100	1600	300	300	150	150	75	2400	1200	1200	400	150	100	2500	2900
	PT18307 380Y/220V 4 Wire, 3 Phase	653	706	740	950	300	300	150	150	75	1500	700	700	400	150	100	2500	2900
ZM Plus 250	PT18308 415Y/240 4 Wire, 3 Phase	653	706	740	950	300	300	150	150	75	1500	700	700	400	150	100	2500	2900
	PT18200 120/240V 3 Wire, Split Phase	307	340	373	533	250	250	125	125	75	700	330	330	400	125	100	2500	2900
	PT18201 208Y/120V 4 Wire, 3 Phase	307	340	373	533	250	250	125	125	75	700	330	330	400	125	100	2500	2900
	PT18202 240/120 4 Wire Delta, 3 Phase	307	340	373	533	250	250	125	125	75	700	330	330	400	125	100	2500	2900
	PT18204 480Y/277V 4 Wire, 3 Phase	653	706	740	950	250	250	125	125	75	1500	700	700	400	125	100	2500	2900
	PT18205 600Y/347V 4 Wire, 3 Phase	980	1000	1100	1600	250	250	125	125	75	2400	1200	1200	400	125	100	2500	2900
ZM Plus 150	PT18207 380Y/220V 4 Wire, 3 Phase	653	706	740	950	250	250	125	125	75	1500	700	700	400	125	100	2500	2900
	PT18208 415Y/240 4 Wire, 3 Phase	653	706	740	950	250	250	125	125	75	1500	700	700	400	125	100	2500	2900
	PT18100 120/240V 3 Wire, Split Phase	320	363	400	583	150	150	150	N/A	75	700	330	N/A	400	150	100	2500	2900
	PT18101 208Y/120V 4 Wire, 3 Phase	320	363	400	583	150	150	150	N/A	75	700	330	N/A	400	150	100	2500	2900
	PT18102 240/120 4 Wire Delta, 3 Phase	320	363	400	583	150	150	150	N/A	75	700	330	N/A	400	150	100	2500	2900
	PT18104 480Y/277V 4 Wire, 3 Phase	673	746	760	1020	150	150	150	N/A	75	1500	700	N/A	400	150	100	2500	2900
	PT18107 380Y/220V 4 Wire, 3 Phase	673	746	760	1020	150	150	150	N/A	75	1500	700	N/A	400	150	100	2500	2900
	PT18108 415Y/240 4 Wire, 3 Phase	673	746	760	1020	150	150	150	N/A	75	1500	700	N/A	400	150	100	2500	2900

			Suppression voltage levels				Maximum Surge Current in each protection mode (8/20 μs)					Duty Cycle Performance (Surge Life) (8/20 μs waveform)				
			ANSI/IEEE C62.41-1992													
Model #	Service voltage	UL1449	CAT B3	CAT C3	Up	Per phase I MAX	L to L	L to N	L to G	N to G	impulses @ 200,000A	impulses @ 100,000A	impulses @ 10,000A	impulses @ 200A	impulses @ 150A	
			3kA	10kA (I _n)												kV
ZM 300	PT 17100 120/240V 3 Wire, Split Phase	330	333	406	0.4	300	300	300	N/A	75	> 4	>8	> 3500	Infinite	Infinite	
	PT 17101 208Y/120V 4 Wire, 3 Phase	330	333	406	0.4	300	300	300	N/A	75	> 4	>8	> 3500	Infinite	Infinite	
	PT 17102 240/120 4 Wire Delta, 3 Phase	330	333	406	0.4	300	300	300	N/A	75	> 4	>8	> 3500	Infinite	Infinite	
	PT 17103 240V 3 Wire Delta, 3 Phase	700	726	826	0.8	300	300	N/A	300	N/A	> 4	>8	> 3500	Infinite	Infinite	
	PT 17104 480Y/277V 4 Wire, 3 Phase	700	726	826	0.8	300	300	300	N/A	75	> 4	>8	> 3500	Infinite	Infinite	
	PT 17106 480V 3 Wire Delta, 3 Phase	1500	1480	1680	1.8	300	300	N/A	300	N/A	> 4	>8	> 3500	Infinite	Infinite	
	PT 17107 380Y/220V 4 Wire, 3 Phase	700	726	826	0.8	300	300	300	N/A	75	> 4	>8	> 3500	Infinite	Infinite	
	PT 17108 415Y/240 4 Wire, 3 Phase	700	726	826	0.8	300	300	300	N/A	75	> 4	>8	> 3500	Infinite	Infinite	
ZM 250	PT 17000 120/240V 3 Wire, Split Phase	330	333	406	0.4	250	250	250	N/A	75	> 2	>6	> 3000	Infinite	Infinite	
	PT 17001 208Y/120V 4 Wire, 3 Phase	330	333	406	0.4	250	250	250	N/A	75	> 2	>6	> 3000	Infinite	Infinite	
	PT 17002 240/120 4 Wire Delta, 3 Phase	330	333	406	0.4	250	250	250	N/A	75	> 2	>6	> 3000	Infinite	Infinite	
	PT 17003 240V 3 Wire Delta, 3 Phase	700	726	826	0.8	250	250	N/A	250	N/A	> 2	>6	> 3000	Infinite	Infinite	
	PT 17004 480Y/277V 4 Wire, 3 Phase	700	726	826	0.8	250	250	250	N/A	75	> 2	>6	> 3000	Infinite	Infinite	
	PT 17006 480V 3 Wire Delta, 3 Phase	1500	1480	1680	1.8	250	250	N/A	250	N/A	> 2	>6	> 3000	Infinite	Infinite	
	PT 17007 380Y/220V 4 Wire, 3 Phase	700	726	826	0.8	250	250	250	N/A	75	> 2	>6	> 3000	Infinite	Infinite	
	PT 17008 415Y/240 4 Wire, 3 Phase	700	726	826	0.8	250	250	250	N/A	75	> 2	>6	> 3000	Infinite	Infinite	
ZM 150	PT 11200 120/240V 3 Wire, Split Phase	400	350	446	0.5	150	150	150	N/A	75	N/A	> 4	> 2500	N/A	Infinite	
	PT 11201 208Y/120V 4 Wire, 3 Phase	400	350	446	0.5	150	150	150	N/A	75	N/A	> 4	> 2500	N/A	Infinite	
	PT 11202 240/120 4 Wire Delta, 3 Phase	400/700	350	446	0.5	150	150	150	N/A	75	N/A	> 4	> 2500	N/A	Infinite	
	PT 11203 240V 3 Wire Delta, 3 Phase	800	760	886	0.9	150	150	N/A	150	N/A	N/A	> 4	> 2500	N/A	Infinite	
	PT 11204 480Y/277V 4 Wire, 3 Phase	800	760	886	0.9	150	150	150	N/A	75	N/A	> 4	> 2500	N/A	Infinite	
	PT 11206 480V 3 Wire Delta, 3 Phase	1500	1480	1680	1.8	150	150	N/A	150	N/A	N/A	> 4	> 2500	N/A	Infinite	
	PT 11207 380Y/220V 4 Wire, 3 Phase	800	760	886	0.9	150	150	150	N/A	75	N/A	> 4	> 2500	N/A	Infinite	
	PT 11208 415Y/240 4 Wire, 3 Phase	800	760	886	0.9	150	150	150	N/A	75	N/A	> 4	> 2500	N/A	Infinite	
ZM 150 with disconnect	PT 11200D 120/240V 3 Wire, Split Phase	500	450	546	N/A	150	150	150	N/A	75	N/A	> 4	> 2500	N/A	Infinite	
	PT 11201D 208Y/120V 4 Wire, 3 Phase	500	450	546	N/A	150	150	150	N/A	75	N/A	> 4	> 2500	N/A	Infinite	
	PT 11202D 240/120 4 Wire Delta, 3 Phase	500	450	546	N/A	150	150	150	N/A	75	N/A	> 4	> 2500	N/A	Infinite	
	PT 11204D 480Y/277V 4 Wire, 3 Phase	900	860	986	N/A	150	150	150	N/A	75	N/A	> 4	> 2500	N/A	Infinite	
	PT 11207D 380Y/220V 4 Wire, 3 Phase	900	860	986	N/A	150	150	150	N/A	75	N/A	> 4	> 2500	N/A	Infinite	
	PT 11208D 415Y/240 4 Wire, 3 Phase	900	860	986	N/A	150	150	150	N/A	75	N/A	> 4	> 2500	N/A	Infinite	
ZM All Mode 300kA	PT 17300 120/240V 3 Wire, Split Phase	400	350	446	N/A	300	150	150	150	150	>4	>8	>3500	Infinite	Infinite	
	PT 17301 208Y/120V 4 Wire, 3 Phase	400	350	446	N/A	300	150	150	150	150	>4	>8	>3500	Infinite	Infinite	
	PT 17302 240/120 4 Wire Delta, 3 Phase	400/800	350	446	N/A	300	150	150	150	150	>4	>8	>3500	Infinite	Infinite	
	PT 17304 480Y/277V 4 Wire, 3 Phase	800	760	886	N/A	300	150	150	150	150	>4	>8	>3500	Infinite	Infinite	
	PT 17307 380Y/220V 4 Wire, 3 Phase	800	760	886	N/A	300	150	150	150	150	>4	>8	>3500	Infinite	Infinite	
	PT 17308 415Y/240 4 Wire, 3 Phase	800	760	886	N/A	300	150	150	150	150	>4	>8	>3500	Infinite	Infinite	
ZM All Mode 180kA	PT 17200 120/240V 3 Wire, Split Phase	400	395	533	N/A	180	90	90	90	150	N/A	>4	>2500	Infinite	Infinite	
	PT 17201 208Y/120V 4 Wire, 3 Phase	400	395	533	N/A	180	90	90	90	150	N/A	>4	>2500	Infinite	Infinite	
	PT 17202 240/120 4 Wire Delta, 3 Phase	400/800	395	533	N/A	180	90	90	90	150	N/A	>4	>2500	Infinite	Infinite	
	PT 17204 480Y/277V 4 Wire, 3 Phase	800	875	1030	N/A	180	90	90	90	150	N/A	>4	>2500	Infinite	Infinite	
	PT 17207 380Y/220V 4 Wire, 3 Phase	800	760	1030	N/A	180	90	90	90	150	N/A	>4	>2500	Infinite	Infinite	
	PT 17208 415Y/240 4 Wire, 3 Phase	800	760	1030	N/A	180	90	90	90	150	N/A	>4	>2500	Infinite	Infinite	

*Maximum continuous operating voltage for all models listed above is nominal plus 25%

			Suppression voltage levels				Maximum Surge Current in each protection mode (8/20 μs)					Duty Cycle Performance (Surge Life) (8/20 μs waveform)					
			ANSI/IEEE C62.41-1992														
	Model #	Service voltage	UL1449	CAT B3	CAT C3	Up	Per	L to L	L to N	L to G	N to G	impulses @ 140,000A	impulses @ 70,000A	impulses @ 45,000A	impulses @ 10,000A	impulses @ 100A	Maximum Continuous Operating Voltage
				3kA	10kA (I _n)		I MAX kA										
ZM PE 300kA	PT 15200	120/240V 3 Wire, Split Phase	400	350	446	N/A	300	150	150	150	150	>8	>12	>20	>3500	Infinite	Nom + 25%
	PT 15201	208Y/120V 4 Wire, 3 Phase	400	350	446	N/A	300	150	150	150	150	>8	>12	>20	>3500	Infinite	Nom + 25%
	PT 15202	240/120 4 Wire Delta, 3 Phase	400/800	350	446	N/A	300	150	150	150	150	>8	>12	>20	>3500	Infinite	Nom + 25%
	PT 15204	480Y/277V 4 Wire, 3 Phase	800	760	886	N/A	300	150	150	150	150	>8	>12	>20	>3500	Infinite	Nom + 25%
ZM PE 180kA	PT 15100	120/240V 3 Wire, Split Phase	400	395	533	N/A	180	90	90	90	150	>2	>8	>14	>2500	Infinite	Nom + 25%
	PT 15101	208Y/120V 4 Wire, 3 Phase	400	395	533	N/A	180	90	90	90	150	>2	>8	>14	>2500	Infinite	Nom + 25%
	PT 15102	240/120 4 Wire Delta, 3 Phase	400/800	395	533	N/A	180	90	90	90	150	>2	>8	>14	>2500	Infinite	Nom + 25%
	PT 15104	480Y/277V 4 Wire, 3 Phase	800	875	1030	N/A	180	90	90	90	150	>2	>8	>14	>2500	Infinite	Nom + 25%
Zone Sentinel (90kA)	PT 12100	120/240V 3 Wire, Split Phase	330	395	533	0.6	90	45	45	45	45	N/A	>1	> 4	> 1500	Infinite	Nom + 25%
	PT 12101	208Y/120V 4 Wire, 3 Phase	330	395	533	0.6	90	45	45	45	45	N/A	>1	> 4	> 1500	Infinite	Nom + 25%
	PT 12102	240/120 4 Wire Delta, 3 Phase	330/700	395	533	0.6	90	45	45	45	45	N/A	>1	> 4	> 1500	Infinite	Nom + 25%
	PT 12103	240V 3 Wire Delta, 3 Phase	700	740	1000	1.0	90	45	N/A	45	N/A	N/A	>1	> 4	> 1500	Infinite	Nom + 25%
	PT 12104	480Y/277V 4 Wire, 3 Phase	700	875	1030	1.0	90	45	45	45	45	N/A	>1	> 4	> 1500	Infinite	Nom + 25%
	PT 12106	480V 3 Wire Delta, 3 Phase	1400	1600	1880	2.0	90	45	N/A	45	N/A	N/A	>1	> 4	> 1500	Infinite	Nom + 25%
	PT 12107	380Y/220V 4 Wire, 3 Phase	700	875	1030	1.0	90	45	45	45	45	N/A	>1	> 4	> 1500	Infinite	Nom + 25%
	PT 12108	415Y/240 4 Wire, 3 Phase	700	875	1030	1.0	90	45	45	45	45	N/A	>1	> 4	> 1500	Infinite	Nom + 25%
Zone Defender Plus (150kA)	PT 14200	120V 2 Wire, Single-Phase	400	435	730	N/A	80	40	40	40	24	1	>4	>10	> 2500	Infinite	140
	PT 14201	120/240V 3 Wire, Split Phase	400	435	730	N/A	80	40	40	40	24	1	>4	>10	> 2500	Infinite	140
	PT 14202	208Y/120V 4 Wire, 3 Phase	400	435	730	N/A	80	40	40	40	24	1	>4	>10	> 2500	Infinite	140
	PT 14204	480Y/277V 4 Wire, 3 Phase	700	890	1200	N/A	80	40	40	40	24	1	>4	>10	> 2500	Infinite	320
	PT 14206	480V 3 Wire Delta, 3 Phase	1500	1600	2100	N/A	80	40	N/A	40	N/A	1	>4	>10	> 2500	Infinite	550
	PT 14207	380Y/220V 4 Wire, 3 Phase	N/A	790	1200	N/A	80	40	40	40	24	1	>4	>10	> 2500	Infinite	275
	PT 14208	415Y/240 4 Wire, 3 Phase	700	890	1200	N/A	80	40	40	40	24	1	>4	>10	> 2500	Infinite	320
	PT 14209	220V 2 Wire, Single-Phase	N/A	790	1200	N/A	80	40	40	40k	24	1	>4	>10	> 2500	Infinite	275
Zone Defender (80kA)	PT 14100	120V 2 Wire, Single-Phase	330	416	628	N/A	150	75	75	75	75	N/A	1	>4	> 2500	Infinite	140
	PT 14101	120/240V 3 Wire, Split Phase	330	416	628	N/A	150	75	75	75	75	N/A	1	>4	> 2500	Infinite	140
	PT 14102	208Y/120V 4 Wire, 3 Phase	330	416	628	N/A	150	75	75	75	75	N/A	1	>4	> 2500	Infinite	140
	PT 14104	480Y/277V 4 Wire, 3 Phase	800	820	1180	N/A	150	75A	75	75	75	N/A	1	>4	> 2500	Infinite	320
	PT 14106	480V 3 wire Delta, 3 Phase	1500	1600	2100	N/A	80	40	N/A	80	40	N/A	1	>4	> 2500	Infinite	275
	PT 14107	380Y/220V 4 Wire, 3 Phase	800	820	1180	N/A	150	75	75	75	75	N/A	1	>4	> 2500	Infinite	320
	PT 14108	415Y/240 4 Wire, 3 Phase	800	820	1180	N/A	150	75	75	75	75	N/A	1	>4	> 2500	Infinite	320
	PT 14109	220V 2 Wire, Single-Phase	800	820	1180	N/A	150	75	75	75	75	N/A	1	>4	> 2500	Infinite	320

Specifications

	Zone Master Plus	Zone Master 300	Zone Master 250	Zone Master 150	Zone Master All-Mode	Zone Master PE (180kA)	Zone Master PE (300kA)	Zone Sentinel	Zone Defender Plus	Zone Defender
Mechanical Specifications										
Enclosure										
High Impact Plastic	X	X	X	X	X			X	X	X
NEMA 1,2,3,3S,4,4X,12,13	X	X	X	X	X			X	X	X
UL-94 5V	X	X	X	X	X			X		
Transparent Cover	X	X	X	X	X			X		
UL 67 Metal enclosure						X	X			
Retrofits into existing major brand panelboards						X	X			
Dimensions										
H inches(cm)	16 (41)	12 (31)	12 (31)	10 (25) ¹	12 (31)	20 (51)	20 (51)	8 (20)	6.25 (15.9)	5.3 (13.5) ²
W inches(cm)	14 (36)	12 (31)	12 (31)	8 (20)	12 (31)	16 (41)	16 (41)	6 (15.5)	6.25 (15.9)	5.3 (13.5)
D inches(cm)	7 (18)	6 (15.5)	6 (15.5)	4 (10.2)	6 (15.5)	5.75 (15)	5.75 (15)	4 (10.2)	4 (10.2)	2.3 (5.8)
Weight lbs (kg)	20 (9)	12 (5.5)	12 (5.5)	7 (3.2)	12 (5.5)	25 (11.3)	25 (11.3)	4 (1.8)	8.8 (4)	3.6 (1.6)
Operating Environment -40C-85C, 95% Humidity	X	X	X	X	X	X	X	X	X	X
Bolt in modules with large surge plate	X	X	X	X	X	X	X	X		
Easy module replacement with 1/4" nuts	X	X	X	X	X	X	X	X		
Max wire size (AWG)	2	2	2	2	2	2/0	2/0	2	10 ³	12 ³
Enclosure mounting means (hole size)	4-.31"	4-.31"	4-.31"	4-.31"	4-.31"	Brackets ⁶	Brackets ⁶	4-.31"	4-.21"	4-.21"
Included 1/2" Close Nipple to attach to electrical panel									X	X
"In the wall" Flush mounting model available						X	X	X		X
Electrical Specifications										
UL1449 Second Edition Listed	X	X	X	X	X	X	X	X	X	X
Patented dual thermal and short circuit fusing	X	X	X	X	X	X	X	X	X	X
Patented Large Block three-terminal MOVs	X	X	X	X	X	X	X	X		
Independent redundant protection stages	X	X	X	X	X	X	X	X		
Field upgradeable from 150,000A to 600,000A	X									
Maximum continuous operating voltage (MCOV)						25% above nominal rated voltage			See Performance sheet	
Replaceable 1.25" x 5.3" x 2.5", UL94-5V modules	X	X	X	X	X	X	X	X		
NO/NC Remote indication contacts (125V, 2Amp)	X	X	X	X	X	X	X	X	X	X
"Protection Present" Green LED	X	X	X	X	X	X	X	X	X	X
Two Independent mechanical fuse link flags per module	X	X	X	X	X	X	X	X		
"High" neutral to ground voltage Red LED ⁴	X	X	X	X	X	X	X	X		
Multi-Mode surge counter (monitors surge current)	Optional					X	X			
UL1283 Listed EMI/RFI extnd range power filter	Optional	Optional	Optional	Optional ⁵	Optional	X	X	Optional	X	
EMI/RFI Max. dB reduction (100kHz to 10MHz)	-75	-75	-75	-75 ⁵	-75	-75	-75	-75	-55	
Optional remote monitoring unit available	X	X	X	X	X	X	X	X	X	X
Optional Silicon Avalanche Diode (SAD) available	X			X					X	
Integral 600VAC, 200,000 AIC fused disconnect						Optional	Optional			
Integral fused disconnect with safety interlock					Optional					

1 Size with disconnect 14" x 12" x 6" (36 x 31 x 15.5cm)

2 Dimensions for three-phase, (two phase 4.5" x 2.9" x 2.5", 2.0lbs), (single-phase 4.5" x 2.9" x 2.5", 1.9lbs)

3 Includes 18" of attached stranded conductor

4 Excludes 3 wire delta systems

5 Not available with disconnect model

6 No mounting holes, brackets included for panel mount applications

Invensys Powerware
8609 Six Forks Road
Raleigh, NC 27615 U.S.A.
Toll Free: 1.800.356.5794
or 919.872.3020
Fax: 1.800.753.9433
www.powerware.com

AS04FXA
Revision 02/03
Reprint 02/03

EUROPE
Finland: 358 94 52 661
France: 33 1 6012 7400
Germany: 49 7841 666 0
Italy: 39 02 6600661 2
UK: 44 (0) 1753 608700

SOUTHEAST ASIA
Singapore: 65 6861 0377

CHINA AND NORTH ASIA
Hong Kong: 852 2745 6682

JAPAN
Shinagawa, Tokyo: 81 3 3447 4441

AUSTRALIA AND SOUTH PACIFIC
Sydney, Australia: 61 29878 5000

CANADA
Toronto, Ontario: 416 798 0112

BRAZIL
Sao Paulo, Brazil:
55 0800 176937

MEXICO
Mexico City:
52 55 9171 7777

invensys™
POWERWARE®