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Chapter 9

Prestige Series 3000/6000 Office/Data Center Models

The Powerware Prestige 3000 (2.5 kVA 3 kVA) and 6000 (4.5 and 6 kVA) UPS is the first on-line UPS that offers a hot-swapable modular design. The Prestige 6000 is easily upgradable from 4.5 to 6 kVA.

The standard North American unit consists of three plug and play modules which can be easily diagnosed and swapped out or upgraded by the user.

- The electronics module contains automatic bypass and communications port.
- The battery module can be monitored through the software for the Prestige 3000 and Prestige 6000.
- The PowerPass maintenance bypass module allows the electronics to be safely disconnected without interrupting the critical load.

The standard international version comes with or without the PowerPass module.

The Prestige North American unit is available in 208 or 240 volts input and 120, 120/208, 120/240 VAC output models. A 120VAC input/output 3 kVA model is also available. The International unit is switch selectable for 200/208/220/230/240 volts in and out.

Double-conversation on-line technology provides regenerated, clean power at all times for consistent performance.

The user-friendly front panel features visual and audible alarms for battery, overload and change of state, LED bar graph display of percent load, battery time remaining and operational status. The unit also provides an automatic battery self-test feature. Optional network power management and UPS monitoring/shutdown software and network adapters allows safe shutdown, remote status display and control of UPS parameters in an NMS or SNMP environment.

An exclusive “second generation” on-line design extends battery life and the “cell saver” utility interface gives the Powerware Prestige the ability to accept lower input voltages when the UPS load is at less than 100% capacity. The battery is used only during the most severe brownouts and blackouts, running cooler and increasing battery life.

The modular battery packs of the Prestige models can be changed, added or removed without turning off the UPS, providing regulated on-line power while the battery is being serviced or upgraded.

The PowerPass Distribution Module houses an isolation to the load during normal operation or a transformer to provide galvanic isolation while on auto or maintenance bypass. It also contains the output receptacles and ensures high availability by allowing the critical load to be manually transferred to the utility power source (bypass) without interruption. Extra output receptacles are provided by extendible plug-in distribution modules. Each receptacle on the extendible module has individual circuit breaker protection for maximum flexibility. These modules are UL 1778 approved for safe handling by the user.

For added flexibility, optional mobile module stackers are available to consolidate and mobilize Prestige Series 3000 and 6000 modules. Stacker units include seismic mounting provisions.

The Prestige is manufactured by Exide Electronics in accordance with ISO9001 standards for quality throughout the design, documentation, and manufacturing processes. All models include a 3 year hot-swap warranty.

Prestige Model 3000/6000 Series Ordering Information

Step 1—Packaged Systems

Note: Rackmount kit is available for Prestige 3000, 4N-AEAEO-RC

Select UPS (models include packaged battery, input cord, and PowerPass module with the output receptacle panel shown). Models noted with * do not include PowerPass module.

Prestige 3000 Series Models

Order Number	Voltage selections				
	Input	Output	Input Plug	Output Rating	Output Receptacles, see Step 2
4N-AEAAH-EA*	120V	120V	L5-30P	3 kVA/2 kW, 60Hz	(1)L5-30R, (1)5-15R
4N-AEAAH-AL	208V	120/208V	L6-30P	3 kVA/2 kW, 60Hz	(1)L6-30R, (4)5-15R
4N-AEAAH-AM	208V	120V	L6-30P	3 kVA/2 kW, 60Hz	(1)L5-30R, (4)5-15R
4N-AEAAH-AN	240V	120/240V	L6-30P	3 kVA/2 kW, 60Hz	(1)L14-30R, (4)5-15R
4N-AEAAH-AP	240V	120V	L6-30P	3 kVA/2 kW, 60Hz	(1)L5-30R, (4)5-15R
4N-AEAAH-AR*	200- 240V in/out		VDE pigtail	3 kVA/2 kW, 50/60Hz	(1)IEC 320 16A (see opt power strips)
4N-AEAAH-AS	200- 240V in/out		VDE pigtail	3 kVA/2 kW, 50Hz	(3)IEC320, 10A, (1)IEC320 16A
4N-AEAAH-AT	240V	120/240V	L6-30P	3 kVA/2 kW, 60Hz	(1)L6-30R, (4)5-15R
4N-AEABG-BG*	200- 240V in/out		VDE pigtail	2.5 kVA/1.6 kW, 50Hz	(3)IEC320, 10A, (1)IEC320 16A

Prestige 6000 Series Models (4.5 kVA & 6 kVA)

Note: See Steps 1a and 1b for 60Hz hardwired applications with PowerPass

(**4.5 kVA Models)**					
4N-AEAAJ-AL	208V	120/208V	L6-30P	4.5 kVA/3 kW, 60Hz	(2)L6-30R, (8)5-15R
4N-AEAAJ-AM	208V	120V	L6-30P	4.5 kVA/3 kW, 60Hz	(2)L5-30R, (8)5-15R
4N-AEAAJ-AN	240V	120/240V	L6-30P	4.5 kVA/3 kW, 60Hz	(2)L14-30R, (8)5-15R
4N-AEAAJ-AP	240V	120V	L6-30P	4.5 kVA/3 kW, 60Hz	(2)L5-30R, (8)5-15R
4N-AEAAJ-AK*	200- 240V in/out		Hardwired	4.5 kVA/3 kW, 50/60Hz	Hardwired (no PowerPass)
(6 kVA Models)					
4N-AEAAJ-CK*	208-240V in/out		Hardwired	6 kVA/4 kW, 50/60Hz	Hardwired (no PowerPass)
4N-AEAAJ-CL	208V	120/208V	L6-30P	6 kVA/4 kW, 60HZ	(2)L6-30R, (8)5-15R
4N-AEAAJ-CM	208V	120V	L6-30P	6 kVA/4 kW, 60HZ	(2)L5-30R, (8)5-15R
4N-AEAAJ-CN	240V	120/240V	L6-30P	6 kVA/4 kW, 60HZ	(2)L14-30R, (8)5-15R
4N-AEAAJ-CP	240V	120V	L6-30P	6 kVA/4 kW, 60HZ	(2)L5-30R, (8)5-15R
4N-AEAAJ-CR	240V	120/240V	L6-30P	6 kVA/4 kW, 60HZ	(2)L6-20R, (8)5-15R
4N-AEAAJ-CS	208V	120/208V	L6-30P	6 kVA/4 kW, 60HZ	(2)L6-20R, (8)5-15R
4N-AEAAJ-CU	200-240V in/out		Hardwired	6 kVA/4 kW, 50HZ	Hardwired with PowerPass

* Packaged systems noted do not require, and do not include the PowerPass module. Call for availability of 120V PowerPass option.

Step 1a—Custom Building Block (for Series 6000 Models only)

Select UPS with packaged battery and add optional PowerPass module from Step 1b as required.

Note: For hardwired I/O applications, use the hardwired I/O PowerPass module listed from Step 1b to preserve hot-swap maintenance bypass capability.

Prestige 6000 Series (4.4 kVA and 6 kVA - UPS and Packaged Battery

Order Number	Description	Input Plug	Output Rating	Output Receptacle
4N-AEAAJ-AJ	4.5 kVA Prestige 200-240 V Model (no PowerPass module)	L6-30P	4.5 kVA / 3 kW 50/60 Hz*	One L6-30R
4N-AEAAJ-CJ	6 kVA Prestige 200-240 V Model (no PowerPass module)	L6-30P	6 kVA / 4 kW 50/60 Hz*	One L6-30R

***** PowerPass is for 60 Hz applications only.

Step 1b—PowerPass Module (Optional)

Plugs into L6-30R on UPS Electronics Cabinet; 60 Hz applications only (Optional)

Note: Except for hardwired I/O modules, all PowerPass modules have L6-30P input plugs.

Prestige 6000 Series	Description	Output Receptacle
4N-AEAAJ-DA	PowerPass 208V Model: 208V in; 120V out	Two L5-30R, Four 5-15R2
4N-AEAAJ-DB	PowerPass 208V Model: 208V in; 120/208V out	Two L6-20R, Four 5-15R2
4N-AEAAJ-DC	PowerPass 208V Model: 208V in; 120/208V out	Two L6-30R, Four 5-15R2
4N-AEAAJ-DD	PowerPass 208V Model: 208V in; 120/240V out	Two L14-30R, Four 5-15R2
4N-AEAAJ-DE	PowerPass 240V Model: 240V in; 120V out	Two L5-30R, Four 5-15R2
4N-AEAAJ-DF	PowerPass 240V Model: 240V in; 120/240V out	Two L6-20R, Four 5-15R2
4N-AEAAJ-DG	PowerPass 240V Model: 240V in; 120/240V out	Two L6-30R, Four 5-15R2
4N-AEAAJ-DH	PowerPass 240V Model: 240V in; 120/240V out	Two L14-30R, Four 5-15R2
4N-AEAAJ-DJ	PowerPass 208V Model: 208V in; 120/208V out	Hardwired I/O
4N-AEAAJ-DK	PowerPass 240V Model: 240V in; 120/240V out	Hardwired I/O

Step 2—Additional Power Distribution Units (Optional)

Plug-In Outlet Extensions (plugs into receptacle on PowerPass module) — all extensions apply to any UPS listed in the applicable group.

Used with UPS Model[1]	Extension Models	Includes Output Receptacles	Extension plug type
4N-AEAAH-AL **4N-AEAAH-AT** **4N-AEAAJ-CL** **4N-AEAAJ-AL**	**4N-AEACH-AK** **4N-AEACH-AL**	Two L6-20R and two L6-30R Hardwired output module (3 kVA models only) (See Steps 1a and 1b for 6 kVA hardwired application.)	L6-30P (all)
4N-AEAAH-AM **4N-AEAAH-AP** **4N-AEAAH-EA** **4N-AEAAJ-AM** **4N-AEAAJ-CM**	**4N-AEACH-AA** **4N-AEACH-AB** **4N-AEACH-AC** **4N-AEACH-AD** **4N-AEACH-AF** **4N-AEACH-AE**	Four 5-15R2 Four 5-20R2 Two L5-30R and Two 5-20R2 Two L5-20R, Two 5-20R2 One 5-15R2, Three L5-30R Hardwired output module (3 kVA models only) (See Steps 1a and 1b for 6 kVA hardwired application)	L5-30P (all)
4N-AEAAH-AN **4N-AEAAJ-AN** **4N-AEAAJ-CN**	**4N-AEACH-AG** **4N-AEACH-AH** **4N-AEACH-AJ** **4N-AEACH-AM**	One L14-30R and three 5-15R2 One L14-30R, Two L6-30R, and One 5-15R2 Hardwired output module (3 kVA models only) (See Steps 1a and 1b for 6 kVA hardwired application.) Four 5-15R2	L14-30P (all)
4N-AEAAH-AR **4N-AEAAH-AS**	**4N-AEACH-DA**[2] **4N-AEACH-DB**[2] **4N-AEACH-DC**[2] **4N-AEACH-DD**[2]	Schuko outlets six @ 16 Amps French outlets six @ 16 Amps British outlets six @ 13 Amps Australian outlets six @ 13 Amps	IEC320 C19 16A(all)

1 Extensions may also be used with any building block PowerPass module 4N-AEAAJ-D* having the corresponding mating receptacle.
2 For 3 kVA models only: call for the plug connections available for 4.5 or 6 kVA models.

Step 3—Additional Battery Packs for Extra Runtime (Optional)

4N-AEAAH-AB Battery Cabinet for 3 kVA Models (up to 3 total maximum recommended*)
4N-AEAAJ-CC Battery Cabinet for 4.5 and 6 kVA Models (up to 6 total maximum recommended*)

* Limitations are to minimize battery recharge time.

Battery Support Times (with Additional Cabinets)					
Battery Times	**STD***	**STD+1**	**STD+2**	**STD+3**	**STD+4**
3 kVA @ full load 3 kVA @ half load	7 minutes 14 minutes	18 minutes 35 minutes	30 minutes 55 minutes	N/A	N/A
4.5 kVA @ full load 4.5 kVA @ half load	12 minutes 30 minutes	20 minutes 50 minutes	28 minutes 68 minutes	36 minutes 90 minutes	44 minutes 116 minutes
6 kVA @ full load 6 kVA @ half load	8 minutes 20 minutes	12 minutes 33 minutes	18 minutes 44 minutes	24 minutes 56 minutes	30 minutes 74 minutes

* One battery for 3 kVA; two batteries for 4.5 and 6 kVA models.

Step 4—UPS Monitoring/Shutdown Software and Network Connectivity Adapter (Options)

See UPS Software and Options section.

Step 5—Select Optional Mobile Module Stack-UPS to consolidate Series 3000/6000 Modules

Determine unit requirement from following chart; each unit=5.6-in

	Package Contents			Total Units Required	
	Electronics Module	**PowerPass Module**	**Battery Module**	**w/ PowerPass**	**w/o PowerPass**
Series 3000	1 unit	1 unit	1 unit	3 units	2 units
Series 6000	2 units	2 units	2 units	6 units (min)	4 units
Add-on Battery	N/A	N/A	1 unit each	add as required	

Step 5a—Select Stack-UPS to match total unit requirement

4N-AEACH-HA/HB/HC/HD Stack-UPS Unit 3/4/5/6 units high

Step 6—Select Optional Warranty Upgrades*

Order Number	Description
4N-AEWAR-G2/G3	Prestige 3000/6000 5-year on-site exchange warranty upgrade option upgrades 3-year hot-swap return product warranty for continental US only and is available at time of UPS sale.
4N-AEWAR-G4	Same as above for Prestige 6000 only, except for 5-year on-site and start-up package.

* Service provided by UPS vendor

Prestige Series 3000 Specifications

UPS Specifications		**North American Models – 60Hz**	**International Models – 50Hz**
		3000VA Models	
Electrical			
Input Voltage		208V or 240 VAC	200V, 208V, 220V, 230V, 240 VAC
Allowable Input Range without using batteries		160-276 VAC @ full load85-144 VAC (120V) 140-276 VAC @ half load	
Input Frequency		45 Hz to 65 Hz	
Input Power Factor		0.90 typical @ full load and nominal line	
Surge Protection		Per EN 50082-1, meets IEC 801-4, IEEE 587, ANSI C62.41 CAT A&B	
Input Connection (6' detachable line cord) (requires 30A-2P circuit)/30A-1P (120V)		With L6-30P (208, 240V) L5-30P (120V)	Stripped Pigtail
Output Receptacles		(1) L5-30R, (4) 5-15R	(1) IEC320, 16A
	Options Available*	(1) L6-30R, (4) 5-15R or (1) L14-30R (4) 5-15R, (1) L6-30R, (4) 5-15R	Ext. strip option or (3) IEC320 with PowerPass
Output Voltage (Sinewave)	Options Available	120V, 120/208V, 120/240V±3% (60Hz)	200V, 208V, 220V, 230V, 240 VAC ± 3% All Units
Output VA/Watts		**3000VA/2000W @ 60Hz**	**3000VA/2100W @ 50Hz**
Output Current @ full load		25A/120V, 14.4A/208V, 12.5A/240V	14.4A/208V, 13.6A/220V, 13.0A/230V 12.5A/240V
Output Voltage THD/Crest Factor		<5%, 100% non-linear load/3:1 CF	
Normal/Common Mode Noise Rejection @ 100 KHZ		>80 dB/60 dB	
Output Frequency		Same as input, 50 or 60Hz ±0.1% free running ±5% synchronized (adjustable to ±1.5%) With PowerPass 60Hz only with PowerPass 50Hz only	
Battery-sealed lead acid Support time full/half load Recharge time to 90% capacity		 7/14 6 HRS	
Mechanical			
Weight	Electronics	16.5 lbs/7.5 kg	
of Components	Battery	52 lbs/23.6 kg	
(lbs/kg)	PowerPass	47 lbs/21.4 kg (Includes Isolation XFMR) Standard 60 Hz / Optional 50 Hz	
	Ext. Batt.	52 lbs/23.6 kg	
Dimensions	Electronics	5.6"H x 9.9"W x 15.8"L (143mm H x 252mm W x 400mm L) Stackable	
of Components	Battery	5.6"H x 9.9"W x 15.8"L (143mm H x 252mm W x 400mm L) Stackable	
HxWxD	PowerPass	Same as Electronics module (60Hz only)	
(inches/mm)	Ext. Batt.	Same as STD Battery Module	
Environmental			
Audible Noise @ 1 meter		50dBA	
Operating/Storage Ambient Temperature & Altitude		+10C to +40C/-20C to +60C; 0-4000 FT (1200 meters) without derating	
BTU/Hr (On Line) @ Full Load		1492 (with PowerPass)	978 (without PowerPass)
Relative Humidity		5-95% Non-condensing	
EMI Suppression		FCC Part 15, Subpart J, Class A also meet CISPR22B	
Safety		UL 1778, CSA	EN 50091-1

* Hardwired output and extension receptacle strips are available for 60Hz applications.

Prestige Series 6000 Specifications

UPS Specifications		North American Models – 60Hz	International Models – 50Hz
		4500VA and 6000VA Models	
Electrical			
Input Voltage		208V (4N-AEAAJ-CM/CL) or 240 VAC	200V, 208V, 220V, 230V, 240 VAC
Allowable Input Range without using batteries		160-276 VAC @ full load 140-276 VAC @ half load	
Input Frequency		45Hz to 65Hz	
Input Power Factor		0.90 typical @ full load and nominal line	
Surge Protection		Per EN 50082-1, meets IEC 801-4, IEEE 587, ANSI C62.41 CAT A&B	
Input Connection (6' detachable line cord) requires 30A-2P circuit		With L6-30P (Hardwire option available)	Hardwired
Output Receptacles		(2) L5-30R, (8) 5-15R (2) L6-30R, (8)5-15R	Hardwired
	Options Available*	2 L6-20R, 8 5-15R or 2 L14-30R, 8 5-15R	Call for availability
Output Voltage (Sinewave)	Standard Package	120, 120/240, 120/208 VAC	200V, 208V, 220V, 230V, 240 VAC ± 3%
	Options Available	120V, 120/208V, 120/240V ±3%	
Output VA/Watts		**4500VA/3000W and 6000VA/4000W Models**	
Output Current @ full load		4500VA Model: 37.5/21.6/18.7A 6000VA Model: 50/28.8/25A @ 120V/208V/240V	
Output Voltage THD/Crest Factor		<5%, 100% non-linear load/3:1 CF	
Normal/Common Mode Noise Rejection @ 100 KHZ		>80 dB/>60 dB	
Output Frequency		Same as input, 50 or 60Hz ±0.1% free running ±5% synchronized (adjustable to ±1.5%) with PowerPass 60HZ only	with PowerPass 50Hz only
Battery-sealed lead acid			
Support time full/half load Recharge time 90% capacity		8/20 (Model 6000VA); 12/30 (Model 4500VA) 6 hours	
Mechanical			
Weight	Electronics	39 lbs/18 kg	
of Components	Battery	52 lbs/23.6 kg each (2 required)	
(lbs/kg)	PowerPass	75 lbs/34.1 kg 60Hz) (Includes Isolation XFMR)	N/A (50Hz)
	Ext. Batt.	52 lbs/23.6 kg	
Dimensions	Electronics	11.2"H x 9.9"W x 15.8"L (285 mm H x 252mm W x 400mm L) Stackable	
of Components	Battery	5.6"H x 9.9"W x 15.8"L (285 mm H x 252mm W x 400mm L) each (2 required) Stackable	
HxWxD	PowerPass	Same as Electronics module (60Hz only)	
(inches/mm)	Ext. Batt.	Same as STD Battery Module	
Environmental			
Audible Noise @ 1 meter		50dBA	
Operating/Storage Ambient Temperature & Altitude		+10C to +40C/-20C to +60C; 0-4000 FT (1200 meters) without derating	
BTU/Hr (On Line) @ Full Load 6000VA Model: 4500VA Model:		 2400 (with PowePass) 2000 (with PowerPass)	 1600 (with out PowerPass) 1200 (without PowerPass)
Relative Humidity		5-95% Non-condensing	
EMI Suppression		FCC Part 15, Subpart J, Class A also meet CISPR22B	
Safety		UL 1778, CSA	EN 50091-1

* Hardwired output and extension receptacle strips are available for 60Hz applications. See Configuration Chart for other options.

Powerware Plus (PUPS Plus) Office/Data Center Models

The PUPS PLUS UPS systems are available in six ratings—10kVA and 12kVA models support single-phase loads and 15, 18, 24 and 36kVA models support both single-and three-phase applications. Units are upgradable: 10-12kVA, 15-18kVA and 24 to 36kVA.

The employment of insulated gate bipolar transistor (IGBT) technology makes these UPS products the smallest and lightest in their class. Combining the attributes of high switching speed and high current-carrying capability, IGBT technology provides the most efficient design and quietest operation available—frequency switching is above the hearing range of the human ear. Its quiet, compact design and portable operation make it suitable for both office and computer room environments. All models are voltage and frequency selectable for 200-240V, 50 or 60Hz outputs and feature a wide input tolerance of up to 176-276V without using battery. This unique flexibility allows complete world wide portability. Three-phase models are also available for 480V/380V/220V or 415/230V applications. It is the unit of choice for frequency conversion, phase shift applications or special seismic requirements and includes castors for ease of portability.

The Personal Series-PLUS UPS is a highly reliable, fully automatic on-line system. All units feature full LCD panel display with MTBF to over 250 khrs.

In the event of a complete power blackout, the UPS inverter continues to feed the computer system via the battery without any interruption to critical load. This allows time to ride out the outage, switch to an auxiliary power source, or perform a controlled shutdown of the system without any danger to valuable data. A wide range of battery support times are available for all types of applications.

In addition to battery backup protection, its double conversion design ensures maximum isolation from the utility source and provides precision control of voltage and frequency during normal operation, while supporting 100% non-linear load without derating.

The 10-to 18-kVA models offer convenient plug-in connection to the critical load with a wide range of individually protected receptacles on the optional power distribution module (PDM), which mounts on the rear of the battery cabinet. The 15-and 18-kVA models may have up to two PDMs. The output may also be hardwired. The 24-and 36-kVA models may be hardwired to a remote distribution panel or an optional auxiliary cabinet may be selected.

The optional auxiliary cabinet contains such features as “wrap-around” maintenance bypass, 30 pole distribution panel with provision for Square D bolt-on or plug-in circuit breakers, input harmonic current reduction filter and a variety of input/output transformer options. Flexible cables with integrated circuit breaker and receptacle are also available for raised floor applications.

In case of emergency, an Emergency Power Off (EPO) switch located on the Personal Series-PLUS unit disconnects the critical load from both the UPS and the bypass. Remote Emergency Power-Off Stations (REPO) interface is also provided for remote power off.

The full featured front panel offers a programmable visual menu-driven display of UPS conditions and a communications interface that allows transmission of UPS alarm conditions to a remote terminal. This communications interface also allows unattended automatic “soft” shutdown or event monitoring through the use of UPS monitoring software (see software section).

PUPS Plus models require on-site service. System start-up is recommended. Electrical installation must be by licensed electrician and may be contracted through an Environmental Products representative.

Powerware PLUS Series (PUPS-Plus) UPS Ordering Information (10kVA to 18kVA Models)

Step 1—UPS Systems with packaged battery

Select UPS system with packaged battery; all models are 200-240V selectable output, hardwired input/output with optional plug-in output Power Distribution Module (PDM).

4N-AEAAL-BA	10kVA/7kW, single-phase output with (1) battery cabinet (9 minutes at full load)
4N-AEAAM-BA	12kVA/8kW, single-phase output with (1) battery cabinet (7 minutes at full load)
4N-AEAAN-BA/BC/BD	15kVA/10kW, three-phase output, STD/EXT1/EXT2 models (10/16/29 minutes at full load)
4N-AEAAP-BA/BC/BD	18kVA/12kW, three-phase output, STD/EXT1/EXT2 models (7/12/22 minutes at full load)
4N-AEAAN-BE	15kVA/10kW, three-phase output, International model with 380-415/220V output (10 minutes at full load)

Step 2—Add-on Battery Cabinets

For support time beyond that included with above packaged systems.

4N-AEACH-BB Optional add-on battery cabinet (EBC2)

Battery Duration Table (Battery runtime chart full/half load support time in minutes						
10 & 12kVA Models	7 & 8kW	**Standard Package with (1) EBC2**	**Add-on (1) EBC2**	**Add-on (2) EBC2**	**Add-on (3) EBC2**	**Add-on (4) EBC2**
10kVA, single-phase	@ 7kW	9/27	26/60	44/95	61/129	78/163
12kVA, single-phase	@ 8kW	7/22	22/52	37/83	52/113	68/144
Recharge times*						

15 & 18kVA Models	10 & 12kW	**Standard Package with (1) EBC1 & (1) EBC2**	**EXT 1 Package with (2) EBC2**	**EXT 2 Package with (3) EBC2**	**Add-on to EXT 2 Package with (1) EBC2**	**Add-on to EXT 2 Package with (2) EBC2**
15kVA, three-phase	@ 10kW	10/28	16/40	29/65	41/89	53/113
18kVA, three-phase	@ 12kW	7/22	12/33	22/53	53/113	43/94

Step 3—Optional "Plug-in" Output Power Distribution Module (PDM)

Select following output modules; one for 10 kVA and 12kVA models; up to two for 15 kVA and 18 kVA models. Note: Two modules require one PDM with conduit mount kit.

Select one for 10 kVA and 12 kVA models

4N-AEACK-BA	(8) 5-15R2
4N-AEACK-BB	(2) L5-15R, (2) L5-30R, (2) 5-15R2
4N-AEACK-BC	(6) L5-30R, (2) 5-15R2
4N-AEACK-BD	(4) 5-15R2, (4) L5-15R
4N-AEACK-BE	(4) L6-15R, (4) L5-15R2
4N-AEACK-BF	(4) 5-20R2, (4) 5-15R2
4N-AEACK-BG	(2) 5-20R2, (2) L5-30R, (4) 5-15R2
4N-AEACK-BH	(2) 5-20R2, (3) L5-30R, (3) 5-15R2
4N-AEACK-BL	(2) L5-20R, (6) 5-20R2
4N-AEACK-BN	(3) L6-30R, (3) 5-20R2, (2) L5-20R
4N-AEACK-BM	(8) 5-20R2
4N-AEACK-BP	(1) L6-30R, (2) L6-20R, (2) L5-20R, (3) 5-15R2

Select one or two[1] for 15 kVA and 18 kVA models

4N-AEACM-BA	(6) 5-20R2
4N-AEACM-BB	(4) 5-15R, (1) L21-20R
4N-AEACM-BC	(4) 5-20R2, (2) L14-30R
4N-AEACM-BD	(2) 5-15R2, (1) L5-30R, (1) L21-30R, (1) L21-20R
4N-AEACM-BE	(1) 5-15R2, (3) L5-30R, (1) L21-20R
4N-AEACM-BF	(5) 5-15R2, (1) L5-30R
4N-AEACM-BG	(4) 5-15R2, (1) L21-30R
4N-AEACM-BH[1]	(3) 5-20R2 with conduit mount kit to add 2nd PDM
4N-AEACM-BJ[1]	(1) 5-20R2, (1)L21-30R with conduit mount kit to add 2nd PDM
4N-AEACM-BK	(3) 5-30R2, (2) L21-30R
4N-AEACM-BL	(1) 5-15R2, (3) 5-20R2, (1) L21-30R
4N-AEACM-BM	(2) L5-20R, (2) 5-20R2, (1) L21-30R
4N-AEACM-BN	(2) L21-30R, (1) 5-20R2, (2) L6-30R
4N-AEACM-BP	(4) L5-30R, (1) L21-30R
4N-AEACM-BS	(1) L6-30R, (2) L6-20R, (1) L21-30R, (1) 5-15R2
4N-AEACM-BT	(2) L21-30R with conduit mount kit to add second PDM
4N-AEACM-PA	Package of (2) PDMs; 4N-AEACM-BT/BK (4) L21-30R, (3) 5-20R2

1 When choosing up to two PDMs, a minimum of one conduit mount kit is required. Kit may also be used for combination hardwire/plug-in output.

Step 4—Select Software, Network Options and Surge Protection Options

See Software section and order chart for applicable operating systems; see UPS Options and TVSS section

Powerware Plus (PUPS Plus) Specifications (10- to 18-kVA Models)

Models	10.0 kVA	12.0 kVA	15.0 kVA	18.0 kVA
Input				
Input voltage	176–276 Vac		176–253 Vac	176–253 Vac
Phases	Single-or 3-phase		3-phase	
Frequency range	45–65 Hz			
Power connection	95 typical			
Input plug	Hard-wired			
Input circuit breaker	60 amps 2-or 3-pole		60 amps 3 pole only	
Maximum input current	42 A	50 A	42 A	50 A
Output				
kVA/kW	10.0/7.0	12.0/8.0	15.0/10.0	18.0/12.0
Voltages (selectable)	208/120, 240/120, 230/115, 220/110, 200/100 Vac		100/200, 127/220, 120/208, 120/240, 115/230 (North America Models) 220/380, 230/400, 240/415 (International Models)	
Phases	Single		Three	
Maximum current continuous	42 A	50 A	42 A	50 A
Sustained overload before bypass transfer	106 to 125% FLA @ 10 minutes; 126 to 149% @ 30 seconds; >150% @ 10 cycles			
Fault clearing	150 A @ 10 cycles; >150 A @ 3 milliseconds			
Transient response	<5% for 100% load Step within 1 millisecond; full recovery within 1 cycle			
Voltage regulation	<+-2%			
THD	<5% for full nonlinear loads and 3.0 crest factor			
Frequency regulation	50 or 60 Hz +-0.1% (free run)			
Noise attenuation TO 100 KhZ	Common mode: -120 dB, normal mode: -60 dB			
Agency Compliance				
Surge/electrostatic (ESD)	Meets IEEE 587/ANSI C62.41 Class A, B; 25 kV withstand for ESD			
EMI suppression	Meets FCC Part 15, Subpart J, Class A			
Safety	IEC 950, UL 1778, Canadian Standards Association listed			
Batteries (EBC1=Half Battery Cabinet, EBC2=Full Battery Cabinet)				
Manufacturer/type/life	YUASA, NP series/sealed, maintenance-free lead acid/5 year design life			
Approvals	Meets IATA Special Provision 67, U.S. DOT, and IMDG test standards			
DC voltage	240 Vdc; 120 cells, 2.25 V/cell float			
Battery Times, Full/Half Loads in Minutes (See Run Time Chart in Step 2)				
Environmental and Physical		**10 & 12kVA Models**	**15 & 18kVA Models**	
Size (H x W x D)[1]	UPS & Packaged Battery Standard Models[2]	28.1 x 17 x 28.6 in. (714 x 432 x 625 mm) w(1) EBC2	28.1 x 25.5 x 28.6 in. (714 x 648 x 625 mm) w (1) EBC1/EBC2	
	UPS Cabinet Only	28.1 x 8.5 x 28.6		
	Battery (EBC1 or EBC2)	28.1 x 8.5 x 24.6 (7.4 x 216 x 625 mm)		
System weight (lbs)	UPS & Packaged Battery Standard Models	475 lb (216 kg) 570 lb shipping includes (1) EBC2	655 lb (298 kb) 780 lb shipping includes (1) EBC1 & EBC2	
	UPS Cabinet Only	180 lbs/235 lb.shipping		
	Battery	EBC1=171 lb (76 kg)/205 lb shipping	EBC2=295 lb (134 kg)/340 lb shipping	
Altitude	5,000 ft (1,500 m) without derating			
Audible noise	Typically <50 dBA at 1 meter		<60 dBA at 1 meter	
Ambient temperature				
Operating	0° C to +40° C			
Nonoperating	–20° C to +60° C			
Relative humidity	5%–95% noncondensing			
BTUs/hour	3890	4081	5101	5063

1. Service clearance required=4-in rear, 36-in left facing unit, PDM adds 4-in to depth of battery cabinets.
2. Add an additional 8.5-inches to width for international 15kVA or 18kVA model.

Powerware PLUS Series—PUPS-Plus (24 and 36kVA Models)

Step 1—UPS with packaged battery (all 50/60Hz, 200-220V (selectable) in/out)

See Step 2 for other options

4N-AEAAR-AA/AB/AC 24 kVA, one/two/three battery cabinets 12, 30 and 50 minutes respectively
4N-AEAAS-AA/AB/AC 36 kVA, one/two/three battery cabinets 5, 15, and 30 minutes respectively

Step 2—Additional Auxiliary Options Cabinet with Input/Output Options (Optional)

All cabinets contain external wraparound bypass. Power Distribution Modules (PDMs) include space for 30 single pole circuit breakers and accepts Square D plug-in, or bolt-on circuit breakers.

Note: Option cabinets cannot be ordered as a field upgrade.

With Step Down Transformer	
4N-AEACP-AC	Auxiliary cabinet, 480 input/200-220V output
4N-AEACP-AD	Auxiliary cabinet, 480 input/200-220V output with PDM (30-pole)
4N-AEACP-AE	Auxiliary cabinet, 480 input/480 output
4N-AEACP-BC	Auxiliary cabinet, 480 input/200-220V output with THD inputfilter
4N-AEACP-BD	Auxiliary cabinet, 480 input/200-220V output with PDM (30-pole) and THD input filter
4N-AEACP-BE	Auxiliary cabinet, 480 input/480 output with THD input filter
Without Step Down Transformer	
4N-AEACP-AA	Auxiliary cabinet with ext bypass only
4N-AEACP-AB	Auxiliary cabinet with PDM (30-pole)
4N-AEACP-BA	Auxiliary cabinet with THD input filter
4N-AEACP-BB	Auxiliary cabinet with PDM (30-pole) and THD input filter

Step 3—Select liquidtight flexible distribution cables if PDM is selected in Step 2.

- Includes Square D plug-in circuit breaker and receptacles shown below (bolt-on breaker available, call for information).
- For hardwire output to remote distribution applications, select optional Modular Power Distribution (MPD) unit.

4N-BC24K-20/30/40[1] (2) 5-15R with 15A-1P circuit breaker
4N-BC24L-20/30/40[1] (4) 5-15R with 15A-1P circuit breaker
4N-BC24N-20/30/40[1] (2) 5-20R with 20A-1P circuit breaker
4N-BC24P-20/30/40[1] (4) 5-20R with 20A-1P circuit breaker
4N-BC24S-20/30/40[1] (1) L5-30R with 30A-1P circuit breaker
4N-BC24T-20/30/40[1] (1) L6-20R with 20A-2P circuit breaker
4N-BC24U-20/30/40[1] (1) L14-20R with 20A-2P circuit breaker
4N-BC24V-20/30/40[1] (1) L21-20R with 20A-3P circuit breaker
4N-BC24W-20/30/4[1] (1) L21-30R with 30A-3P circuit breaker
4N-BC26E-20/30/40[1] (1) L6-30R with 30A-2P circuit breaker
4N-BC28Z-20/30/40[1] (1) L14-30R with 30A-2P circuit breaker

1. Suffix denotes length in feet

Step 4—Select Software and Other Options

See software section and order chart for applicable operating system. See UPS Hardware options for network adapters. See TVSS section for surge protection.

Step 5—Add-on Battery Field Upgrades

Add-on battery for increased support time (maximum of three total including package battery recommended to limit recharge time.)

4N-AEACN-AA Add-on matching battery cabinet

Personal Series-PLUS UPS Specifications (24 and 36 kVA Models)

Note: Service clearance required = 4 inches rear, 36 inches left side facing unit.

Models	**24 kVA**[1]		**36 kVA**	
Input				
Nominal voltage VAC	208 V	480 V	208 V	480 V
Input voltage range	176-253 V	410-580 V	176-253 V	410-580 V
Phases	3-phase			
Frequencies	45--65 Hz			
Power factor	95 typical			
Input connection	Hardwire at rear of unit			
Input circuit breaker 3-pole	125A-3P	75A-3P	125A-3P	75A-3P
Maximum input current	58A	28A	87A	42A
Input current THD	Less than 10% with optional THD reduction filter			
Output				
kVA / kW	24 / 16		36 / 24	
Voltages (selectable)	115/200, 120/208, 127/220 VAC/480/277 VAC with options cabinet			
Phases	3-phase			
Continuous Amps	67A	29A	100A	44A
Sustained overload before bypass transfer	106% to 125% FLA @ 10 minutes, 126% to 149%@ 30 seconds, >150%, 10 cycles			
Fault clearing	300 A @ 12 cycles, >300 A, 3 ms			
Transient response	<5% for 100% load Step, recovery in 1/4 cycle (4 ms)			
Voltage regulation	< ±2%			
THD	<5% maximum for full non-linear and 100% load			
Frequency regulation	50 or 60 Hz ±0.1% (free run)			
Noise attenuation to 100kHz	Common / Normal mode >100/60 dB			
Agency Compliance				
Surge/electrostatic (ESD)	Meets IEEE 587/ANSI C62.41 Class A, B; 25 kV withstand for ESD			
EMT suppression	Meets FCC Part 15, Subpart J, Class A			
Safety	IEC 950, UL 1778, Canadian Standards Association listed			
Batteries Information				
Manufacturer/type/life	YUASA, NP series/sealed, maintenance-free lead acid/5-year design life			
Approvals	Meets IATA Special Provision 67, U.S. DOT, and IMDG test standards			
DC voltage	240 Vdc; 120 cells, 2.25 V/cell float			
Recharge times to 90%	1 cabinet, 1 hour, 2 cabinets 2 hours, 3 cabinets 3 hours			
Battery Times Full/Half Loads in Minutes[2]	 24kVA Models @ 16kW 36kVA Models @ 24 kW	with 1 cabinet 12/30 5/18	with 2 cabinets 30/80 15/30	with 3 cabinets 50/130 30/80
Environmental and Physical				
Size (same for electronics, or auxiliary or battery cabinet)[4]	39 in. H x 17 in. W x 31 in. D (each cabinet)[3]			
System weights				
Electronics module Auxiliary cabinet	UPS: 400 lb (180 kg) 1300 lb (590 kg) maximum with all options			
Battery weight	900 lb per cabinet			
Altitude	5000 ft (1500 m) above sea level			
Audible noise @ 1 meter	65 dBA			
Ambient temperature				
Operating	0° to +40° C			
Nonoperating	–20° to 60° C			
Relative humidity	5% to 95% noncondensing			
Btus/hour	10,402 (24 kVA), 15,602 (36 kVA)			

1 24 kVA unit is field upgradable to 36 kVA
2 Additional support time available, call for information
3 Service clearance required is 4 inches rear, 36 inches left side facing unit
4 Add 6.2 inches to depth of electronics, and auxiliary cabinet for wiring trough

Line Interactive UPS Systems

x86 Low End Workstations/Servers	x86 High End Servers / LowEnd Workstations	Midrange Servers
Back-UPS Pro (280-1400VA)	Smart-UPS (450-3000VA)	Matrix (3 & 5 kVA)

Made for Digital by American Power Conversion Corporation, these systems regulate and filter raw utility power and protect against over/under voltage conditions, transients, surges and blackouts. They engage within 2-4 milliseconds after a utility power failure to provide true sine wave output to the load. A smart-boost and trim feature engages when the voltage falls or rises beyond specified limits.

Systems feature a communications interface for UPS monitoring and safe shutdown, visual/audible alarms, user replaceable batteries, site wiring fault indicator, and a two year hot-swap warranty. These systems offer good performance and reliable protection at an affordable price.

Smart-UPS Desktop Models

Positioned for high-end Intel based servers and critical workstations, the Smart-UPS models are the most feature-rich high performance desktop line-interactive designs available. They offer a wide array of front panel LED display meters and alarms and a full featured monitoring/management software selection via PowerChute Plus software for enhanced serial signaling and SNMP management.

Options include internal car slots for SNMP network adapters for direct monitoring of UPS status, local environmental monitoring, out-of-band management, and expander modules for multiple CPU monitoring from one UPS. SNMP agent software is also available. The following models are available.

- Standard Models: 450-3000VA
- XL Extended Run Models: 600-2200VA
- Rackmount Models: 600-3000VA

Back-UPS Pro Desktop Models (280-1400VA)

Positioned for low end Intel based servers and workstations, the Back-UPS Pro offers all of the power protection performance of the Smart-UPS with limited front panel display and monitoring software features. The 280, 420 and 650VA models include PowerChute Pro simple signaling software which is “plug and play” compatible with Windows 95, Windows NT, Windows 3.x, Novell and OS/2. Models include built-in surge protection for modem and 10BaseT connections and are not compatible with the fuller featured PowerChute Plus software.

Smart-UPS vs Back-UPS Pro Features Comparison Chart	Smart-UPS	Back-UPS Pro
Smart Communications	**Yes**	**No**
Pre-packaged Software	**No**	**Yes (280/420/650 Models)**
Input Volts, Battery Charge, Load LED Bar Meters	**Yes**	**No**
Battery Self-Test Button	**Yes**	**No**
4 Status LEDS: on battery, on utility, overload, replace battery	**Yes**	**Yes**
Smart-boost/Trim Led	**Yes**	**No**
Audible Alarm-Overload on battery, low battery, replace battery	**Yes**	**Yes**

Smart-UPS Desktop Model Ordering Information

Note 1: See UPS Options and Software section for information on network adapters, monitoring software etc.

Model	120 V Models 50/60 Hz	230 V Models 50/60 Hz	Output Capacity VA / Watts	Runtime full / half load	Input plug[2]	Receptacle Quantity	Receptacle 120V/230V[2]
SU450	**4N-APACA-AB**	**4N-APACA-BB**	450/280	5 / 18	5-15P	4	5-15R IEC320 10A
SU700	**4N-APACB-AB**	**4N-APACB-BB**	700 / 450	5 / 17	5-15P	4	5-15R IEC320 10A
SU1000	**4N-APACC-AB**	**4N-APACC-BB**	1000 / 670	6 / 18	5-15P	6	5-15R IEC320 10A
SU1400	**4N-APACD-AB**	**4N-APACD-BB**	1400 / 950	7 / 21	5-15P	6	5-15R IEC320 10A
SU2200	**4N-APACE-AD**	**4N-APACE-BD**	2200 / 1600[1]	9 / 27	5-20P	8	5-15R IEC320 10A
SU3000	**4N-APADA-AA**	**4N-APADA-BB**	3000 / 2250[1]	5 / 17	L5-30P	8	5-15R IEC320 10A
SU3000 add-on battery	**4N-APADA-AB**	same	N/A	15/40 (1 pack)		N/A	N/A
Rackmount Models (19 inch wide)							
SU700RM	**4N-APABC-AB**	**N/A**	700 / 450	5 / 17	5-15P	6	5-15R
SU1000RM	**4N-APABE-AB**	**4N-APABE-BB**	1000 / 670	6 / 18	5-15P	6 4	5-15R IEC320
SU1400RM	**4N-APABD-AB**	**4N-APABD-BB**	1400 / 950	6 / 11	5-15P	6 4	5-15R IEC320
SU2200RM	**4N-APACH-AD**	**N/A**	2200 / 1600(1)	9 / 24	5-20P	8 1	5-15R IEC320 IEC320 16A
SU3000RM	**4N-APACH-AE**	**N/A**	3000 / 2250(1)	5 / 17	L5-30P	8 1	5-15R IEC320 IEC320 16A
AP600RM	**N/A**	**4N-APABC-BA**	600/400	6 / 18		4	IEC320 10A
AP2000RM	**N/A**	**4N-APACH-BA**	2000/1500(1)	8 / 22		4	IEC320 10A
Extended Run XL Models (see Runtime Chart which follows)							
SU700XL	**4N-APACF-AD**	**N/A**	700 / 450	12 / 42	5-15P	6	5-15R
SU2200XL	**4N-APACF-AE**	**N/A**	1000 / 670	6 / 24	5-15P	6 4	5-15R IEC320
SU2200XL	**4N-APACF-AF**	**N/A**	2200 / 1600(1)	7 / 24	5-20P	8	5-15R
AP900XL	**N/A**	**4N-APACF-BA**	900/630	48 / 120		4	IEC320 10A
AP2000XL	**N/A**	**4N-APACG-BA**	2000/1500(1)	12 / 36		4	IEC320 10A
Add-on XL battery Packs (up to 10 on XL models (2) See Runtime Chart which follows)							
SU700/1000XL Pack	**4N-AP2XL-BP**	**N/A**	N/A	40 / 90 each		N/A	
SU2200XL Pack	**4N-AP4XL-BP**	**N/A**	N/A	18 / 42 each		N/A	
AP900XL Pack	**N/A**	**4N-APAEA-AA**	N/A	66 / 140 each		N/A	
AP2000XL Pack	**N/A**	**4N-APACG-AC**	N/A	24 / 54 each		N/A	

1 All SU2200 and SU3000 models are derated to 1600VZ and 2550VA respectively when used with plug included. Input plug options L5-30P and L5-50P for full rating are available via reply card shipped with product.
2 230V models include IEC320 output jumpers, (2) for 1400VA and below, (3) for 2000 VA and above.
3 Input connection for 230V models is via IEC320.C14 male; SHUKO plug for 2200VA and above.

Back-UPS Pro Desktop Ordering Information

Note 1: Models 280, 420, and 650 VA ship with Powerchute Pro Software for Intel systems, Windows NT, Windows 95, Windows 3.x and OS/2

Note 2: Back-UPS pro models are compatible with Powerchute Pro software (basic monitoring features only) and are not compatible with UPS network adapters

See also UPS Options section and TVSS section

Standard Models (2)	Order Number 120V Models 50/60 Hz	Order Number 230V Models 50/60 Hz	Capacity VA / Watts (Note 1)	Runtime(min) Full/Half load	Receptacle No. 120V/230V[2]
BP280PNP[1]	**4N-APAAA-AF**	**N/A**	280 / 180	5 / 15	(2) 5-15R
BN420PNP[1]	**4N-APAAB-AC**	**N/A**	420 / 280	5 / 18	(4) 5-15R
BN650PNP[1]	**4N-APAAC-AC**	**N/A**	650 / 410	5 / 19	(4) 5-15R
BP1000	**4N-APAAD-AB**	**N/A**	1000 / 670	6 / 14	(6) 5-15R
BP1400	**4N-APAAE-AB**	**N/A**	1400 / 950	7 / 19	(6) 5-15R

Smart-UPS XL Model Battery Runtime Chart (120V) in Hours*

* With up to 10 added extended battery packs. Support times shown are based on typical computer load @ 0.65PF. Call for information on 230V models.

XL Models		STD Unit	STD +1	STD +2	STD +3	STD +4	STD +5	STD +6	STD +7	STD +8	STD +9	STD +10
700XL	@ Full load	0.2	1.3	2.5	3.8	5.2	6.5	7.8	9.2	10.7	12.0	13.5
(450 Watts)	@ Half load	0.6	2.7	5.0	7.2	9.5	11.8	14.3	16.8	19.2	21.7	24.2
1000XL	@ Full load	0.1	0.8	1.7	2.5	3.5	4.3	5.3	6.3	7.1	8.2	9.0
(670 Watts)	@ Half load	0.4	2.0	3.8	5.7	7.5	9.3	11.3	13.3	15.3	17.3	19.3
2200XL	@ Full load	0.1	0.3	0.6	0.9	1.2	1.5	2.0	1.3	2.7	3.2	3.5
(1600 Watts)	@ Half load	0.4	1.0	1.8	2.7	3.7	4.5	5.3	6.3	7.2	8.0	9.0
700XL Recharge times		1.7	5.1	8.5	12	15	19	22	25	29	32	36
1000XL Recharge times		1.7	5.1	8.5	12	15	19	22	25	29	32	36
2200XL Recharge times		1.7	3.1	4.8	6.5	8.2	9.9	11.6	13.3	15	16.7	18.4

Smart-UPS/Back-UPS Pro Weights and Dimensions

Standard Models	Weights lbs	Net/Shipping lbs	H x W x D (inches)
SU450/700	29	32	6.2 x 5.4 x 14.1
SU1000	43	48	8.5 x 6.7 x 17.3
SU1400	52	57	8.5 x 6.7 x 17.3
SU2200	112	132	17 x 7.7 x 21.5
SU3000	120	140	17 x 7.7 x 21.5
SU3000 Battery Pack	69	73	8.5 x 6.7 x 17.3
XL Models			
SU700XL	52	57	8.5 x 6.7 x 17.3
SU1000XL	56	61	8.5 x 6.7 x 17.3
SU2200XL	120	140	17 x 7.7 x 21.5
AP900XL	94	104	9.1 x 6.9 x 17.8
AP2000XL	125	137	18 x 6.9 x 17.8
SU XL Battery Packs	69	73	8.5 x 6.7 x 17.3
AP900XL Battery Pack	62	67	9.1 x 6.9 x 17.8
AP2000XL Battery Pack	64	69	9.1 x 6.9 x 17.8

Smart-UPS/Back-UPS Pro Weights and Dimensions *(continued)*

Rackmount Models	Weights lbs	Net/Shipping lbs	H x W x D (inches)
SU700RM	40	40/46	5.2 x 19 x 15
SU1000RM	46	46/52	5.2 x 19 x 15
SU1400RM	55	55/61	5.2 x 19 x 15
SU2200RM	120	136	8.7 x 19 x 20
SU3000RM	129	145	8.7 x 19 x 20
AP600RM	38	43	8.7 x 19 x 8.5
AP2000RM	108	118	17.4 x 19 x 8.5
Back-UPS Pro Models			
BP280	19.3	27.3	6.6 x 4.7 x 14.5
BP420	20.5	23.5	6.6 x 4.7 x 14.5
BP650	24.9	27.9	6.6 x 4.7 x 14.5
BP1000	41.5	46	8.5 x 6.7 x 17.2
BP1400	53	57.5	8.5 x 6.7 x 17.2

Matrix Midrange UPS Office/Data Center Models

The Matrix UPS series from American Power Conversion Corporation is available in 3-kVA and 5-kVA ratings in North America (60HZ) and worldwide models (50/60 HZ). Matrix is a fully modular UPS system.

A basic Matrix unit is made of an isolation module with a mean time to failure of approximately 99 years, an electronics module with MTBF of about 12 years, and external SmartCell packs with lifetimes of approximately six years. The modular design of the Matrix product line allows the unit to be safely swapped-out without interrupting power to the loads. This reduces Mean Time to Repair (MTTR) to seconds. In addition, the Matrix unit provides continuous no-break regulation and filtering over a wide input voltage range. It does this in both normal and utility failure modes with full isolation in maintenance bypass mode.

A small microprocessor in each SmartCell automatically monitors the operation of the battery and warns the system manager of any irregularities. Replacement SmartCell warnings are delivered via the front control panel, via local alerts on each SmartCell, and via optional monitoring software. If a SmartCell needs replacing, users can simply disconnect and replace the failed pack.

An additional benefit of the Matrix modular design is long battery life. SmartCells are in a separate package away from the enclosure with heat dissipating circuits. With a lifetime of approximately six years, SmartCells may need replacement only once during the UPS' service life. The SmartCell replacement date may be stored in the UPS memory for future reference via the remote interface or by the front panel controls. Each modular SmartCell battery pack provides additional runtime, allowing users to purchase only as much runtime as they need.

Matrix gives users 100% capacity in either 120, 208, 240V or any mixture of each. Cord connected power distribution units (CCPDU) can be added to the standard plug configuration for additional outlets. These CCPDU can be easily swapped as equipment needs change. The world wide model can also be programmed to output 120, 220, 230, or 240 Vac.

FineLine microprocessor-based voltage regulation adapts the Matrix to specific corporate site power characteristics. Building intelligence into the voltage regulator, in FineLine adaptive mode, Matrix learns the power characteristics of the site, then models its transfer behavior to maximize user protection and minimize unnecessary battery usage.

There is no need to oversize the UPS to plan for inrush current.

The Matrix product line is fully compatible with the PowerMon or PowerChute family of power management software for safe shutdown and power monitoring. In addition, Matrix supports Simple Network Management Protocol (SNMP) via the SNMP adapter, delivering warnings regarding power events and UPS status to any NMS whether the Matrix unit is located 20 feet or 2000 miles away.

The Matrix is manufactured in Compliance with ISO 9002 standards and includes a two year hot swap warranty.

Matrix UPS Ordering Information

Step 1—Select UPS, with packaged battery and standard output receptacle panel

Note: Ax = 60Hz North American, Bx = 50/60 Hz Worldwide. 60Hz models include line cord with L6-30P plug. 50 Hz models are hardwired. All units may be optionally hardwired on the input. See specifications for receptacle configurations.

4N-APMX3-AA/BA	3-kVA Matrix MX3000, single-phase output model with two-year hot swap warranty
4N-APMX3-AC	3-kVA, with three-year, on-site, next day service (U.S. only)
4N-APMX5-AB/BB	5-kVA Matrix MX5000, single-phase output model with two-year hot swap warranty
4N-APMX5-AD	5-kVA, with three-year, on-site, next day service (U.S. only)

Step 2—Optional Cord-Connected Power Distribution Units/Outlet Configurations

Hardwire Output

4N-APMXH-AA MX 3 hardwired kit for 3 kVA unit

4N-APMXH-AB MX 5 hardwired kit for 5 kVA unit

Plug-In Output Extensions (plugs into receptacle on unit)

4N-APMXO-AA* PDU with output: (5) 5-15R2, L14-30R, input plug: L14-30P

4N-APMXO-AB PDU with output: (4) L6-20R, input plug: L6-30P

4N-APMXO-AC PDU with output: (4) 5-20R2, input plug: L14-30P

4N-APMXO-AD PDU with output: (4) L6-30R, input plug: L6-30P

4N-APMXO-AE PDU with output: (4) L5-30R, input plug: L14-30P

4N-APMXO-AG PDU with (4) L6-20R, (4) 6-15R, (1) L6-30R

4N-APMXO-AH PDU with (6) L5-15R, (2) L14-30R

***** This PDU can be daisychained.

Step 3—Additional Battery Packs for Extra Runtime

Note: Extended runtime SmartCell also available, equivalent to (4) SmartCells (4N-APMXB-AB/BB). Call for information.

4N-APMXB-AA/BA SmartCell North America/Worldwide Models

Matrix Run and Recharge Times in Hours	STD[1]	STD +1	STD +2	STD +3	STD +4	STD +5	STD +6	STD +7	STD +8	STD +9
MX3000 recharge times[2]	1.5	2.8	2.7	3.8	4.9	6.0	7.0	8.1	9.1	10.2
MX5000 recharge times[2]	2.3	2.2	3.3	4.4	5.5	6.6	7.7	8.8	9.8	N/A
MX3000 battery times										
full load	0.10	0.2	0.3	0.48	0.68	1.0	1.2	1.4	1.6	1.9
half load	0.37	0.75	1.1	1.9	2.6	3.7	4.5	5.3	6.0	7.1
MX5000 battery times										
full load	0.13	0.2	0.33	0.47	0.67	0.8	0.93	1.1	1.3	N/A
half load	0.43	0.65	1.1	1.5	2.2	2.6	3.1	3.5	4.2	N/A

1 Standard 3000-VA UPS includes one SmartCell battery pack; standard 5000-VA UPS includes two SmartCell battery packs. Runtimes typical at 25° C.

2 Recharge to 90% of capacity subsequent discharge into 50% of rated full load. < two SmartCells charging at 500 W; > two SmartCells charging at 1000 W.

Note: Optional extended XL battery modules available for applications requiring ≥ four battery packs, call for information.

Step 4—Select Monitoring Software, Network Adapters and Data Surge Protection

Note: See Software, UPS Options and TVSS section.

Step 5—Select optional caster kit to consolidate and mobilize Matrix modules (4N-APMAH-AC).

Matrix UPS Specifications

Operation	Matrix 3000	Matrix 5000
Topology	Line Interactive	Line Interactive
Output power capacity[1] (single phase loads)	3000 VA/2250 W	5000 VA/3750 W
Galvanic isolated bypass	Yes	Yes
Nominal input voltage, frequency[2]	208/240 Vac, 60 Hz or 208/220-240, 50/60 Hz	
Input voltage range (% of nominal) for mains operation	-25% to +15%	-25% to +15%
Input frequency range (% of nominal) for mains operation	+/-5%	+/-5%
Input connection (includes 6 ft cord for 60 Hz model)	L6-30P for 60 Hz; 30A-2P CB for hardwired 50/60 Hz model	
Output connection[3] (includes 4 IEC jumbers for 50/60 Hz model)	Output (3) 5-15R2, (2) L6-30R, (1) L14-30R (60 Hz); IEC 320, (8) 10A (50/60 Hz), or hardwire kit	
Nominal output voltage–208/240 Vac, 60 Hz versions	120 and 208 Vac; or 120 and 240 Vac	
Nominal output voltage–208/230 Vac, 50/60 Hz versions	120 and 208 Vac; or 220, 225, 230, and 240 Vac	
Output voltage regulation	+/-5% adjustable	+/-5% adjustable
Output voltage distortion (on-battery)	<5% THD	<5% THD
Output frequency regulation	Synchronized, 0.1% of nominal during mains failure	
Typical transfer time	0 ms	0 ms
Normal/common mode let-through voltage percentage of applied 6-kV IEEE 587 (ANSI C62.41) Category A, B test surge	<0.7%/<1.0%	<0.7%/<1.0%
Normal/common mode noise attenuation range over 100 kHz–30 MHz	60-80 dB (80-100 dB)	60-80 dB (80-100 dB)
Smartcell Battery System		
Nominal battery system	48 Vdc, sealed, maintenance-free lead acid	
Number of packs supplied/recharge times	1 pack/1.5 hrs	2 packs/3 hrs
Standard run times @ full/half wattage load	7/18 min	8/20 min
Features		
User display	Load power, voltage, intelligent runtime meters; Programmable 2 x 16 character back lit LCD, 4 languages	
Intelligent bypass	Automatic upon failure or user switchable	
Diagnostics	Intelligent serial interface, auto and requested self tests, adj. warnings	
Emergency Power Off (EPO) capability	Input for external EPO closure	
50/60-Hz version input/output voltage selection via front panel	Settable to 220, 230, or 240 Vac; frequency selection automatic	
Adjustable sensitivity	High, low, or adaptive via FineLine	
Environment and Physical		
Efficiency at full load/heat dissipation (Btu/hr)	>93%, 540 Btu/hr	>93%, 900 Btu/hr
Operating ambient temperature	0° -45° C (32° -113° F)	0° -45° C (32° -113° F)
Operating ambient relative humidity	0% to 95% non-condensing	0% to 95% non-condensing
Electromagnetic immunity	IEC 801-2, 801-3, 801-4, 801-5; severity level IV	
Audible noise	<55 dBA	<55 dBA
UPS dimensions (electronics, isolation modules mated) (H x W x D)	27.3 in. x 13.8 in. x 17.8 in. (69.3 cm x 35.1 cm x 45.2 cm)	
UPS electronics module weigh—all versions	40 lb (18.1 kg)	45 lb (20.4 kg)
UPS isolation module weight -208/240 Vac, 60 Hz	104 lb (47.2 kg)	130 lb (59.0 kg)
UPS isolation module weight -208/230 Vac, 50/60 Hz	113 lb (51.3 kg)	146 lb (66.2 kg)
SmartCell dimensions (H x W x D)	9.1 in. x 6.9 in. x 17.8 in. (23.1 cm x 17.5 cm x45.2 cm)	
SmartCell weight (Add 1 for 3-kVA and 2 for 5-kVA)	Each 64 lb (29 kg)	Each 64 lb (29 kg)
Safety approvals	UL per 1778, CSA per C22.2, TUV per IEC 950	
EMC verification	FCC Part 15 subpart J class A, CDC, EN55022	
Standard Product Warranty	2 years, $25,000 Lifetime Equipment Protection Policy	

1 5-kVA models are derated to 4700VA when configured for 208V input.
2 60 Hz models are wired for 208 V input. Specify if 240 V is desired. 50/60 Hz models are wired for 220/240 V. Specify if 208 V is desired. All output receptacles have individual circuit breaker protection.

Standby UPS Systems

Positioned for low end standalone and client PCs which require a minimum of power conditioning and basic blackout protection, Standby UPS systems offer a base level of filtering/surge protection during normal operation and battery back-up with safe shutdown provisions during a power failure. They generally engage in 4-8ms and operate on battery during power outage, or brownout/overvoltage conditions. They are the cost effective choice to ensure data integrity for clients in a PC client-server environment. Digital offers solutions from Exide Electronics (One-UPS) and American Power Conversions (Back-UPS, both with user replaceable batteries.

Back-UPS vs One-UPS Feature Comparison Chart

	Back-UPS (200-1250VA)	One-UPS (250-600VA)
Battery Start	No	Yes (400, 600VA)
Adjustable Brownout Transfer Settings	Yes	Yes
Basic Monitoring Port	Yes (except 200, 280VA)	Yes (except 250VA)
Site Wiring Fault Indicator	Yes	Yes
On Battery/On Utility LED	No	Yes (400, 600VA)
Audible Alarms	Yes	Yes
50/60Hz selectable	No	Yes
Warranty	2 year hot swap	3 year hot swap

Back-UPS Models Ordering Information

See also UPS Options, Monitoring Software, and TVSS section

Standard Models (2)	Order Number 120V Models 60 Hz	Order Number 230V Models 50 Hz	Capacity VA / Watts	Battery (min) Full/Half load	Receptacle No. 120V/230V[2]
BK200	**4N-APAAA-AC**	**N/A**	200/130	5 / 15	(2)5-15R
BK280	**4N-APAAA-AD**	**N/A**	280/180	5 / 15	(2)5-15R
BK400	**4N-APAAF-AA**	**4N-APAAB-BA**	400/250	5 / 19	(2)5-15R
BK450	**4N-APAAB-AA**	**N/A**	450/300	8 / 28	(4)5-15R
BK600	**4N-APAAC-AA**	**4N-APAAC-BA**	600/400	5 / 22	
BK250	**N/A**	**4N-APAAA-BA**	250/170	7 / 17	(2)5-15R

Note: Back-UPS models are compatible with Powerchute software (basic monitoring features only) and are not compatible with UPS network adapters

One-UPS Models Ordering Information

120V/230V Models		Capacity VA / Watts	Battery (min)	Receptacle No. 120V/230V[2]
4N-AEADA-AA/BA	One-UPS 250VA	250VA/150W	10 minutes full load	(2) 5-15/IEC320
4N-AEADA-AB/BB	One-UPS 400VA	400VA/240W	5 minutes full load	(3) 5-15/IEC320
4N-AEADA-AC/BC	One-UPS 600VA	600VA/360W	5 minutes full load	(4) 5-15/IEC320

One-UPS and Back-UPS Weights and Dimensions

One-UPS Models	Weight/Net Shipping	H x W x D (inches)
250VA	11.8 lbs	6.9 x 3.5 x 10.3
400VA	12.8 lbs	7.3 x 4.3 x 10.3
600VA	27.1 lbs	8.5 x 4.9 x 10.3
Back-UPS Models		
200VA	9 lbs	6 x 3.4 x 13.1
280/250VA	10 lbs	6 x 3.4 x 13.1
400VA	18 lbs	6 x 3.4 x 13.1
450/600VA	25 lbs	6.6 x 4.7 x 14.2

UPS Options Section

Options for Prestige Desktop/Office Models		
Hot Swap PowerPass (120V)	**4N-AEAEO-PA***	Allows safe swap out of UPS without effecting load (up to 1800VA models)
Hot Swap PowerPass (230V)	**4N-AEAEO-PB***	Allows safe swap out of UPS without effecting load (up to 1800VA models)
Rackmount kit (22-27"D)	**4N-AEAEO-RA**	Includes single (9.25" high) and double (12.1" high) unit faceplate, 19" width up to 2000VA models. 22-27-inch adjustable depth
Rackmount kit (28-32"D)	**4N-AEAEO-RB**	Includes single (9.25" high) and double (12.1" high) unit faceplate, 19" width up to 2000VA models, 28-32 inches adjustable depth
Rackmount kit (25"D)	**4N-AEAEO-RC**	Includes 1-3 unit faceplate in 6U High (10.5") assembly, 19" width for Prestige 3000, may be used for multiple desktop units, call for information
Mobile Stacker Unit	**4N-AEACH-Hx**	Includes seismic mounting provisions for Prestige Models 3000 and 6000 x = A/B/C/D for 3, 4, 5, or 6 high module configuration (5.6" each) See Prestige 3000/6000 Section for configuration details.

* -PA models include (7) 5-15R outlets "on" UPS and (1) 5-15R "off" UPS for laser printer.
-PB models include (6) IEC 10A "on" UPS and (1) IEC 10A "off" UPS. All outlets have built-in surge protection.

Network Adapters for Prestige and PUPS Plus Models		
Connect-UPS Adapter (120V)	**4N-AEAEO-DA/DC***	Ethernet/SNMP Adapter, 1 UPS to Network twisted-pair/ThinWire
Connect-UPS Adapter (240V)	**4N-AEAEO-DB/DD***	Ethernet/SNMP Adatper, 1 UPS to Network twisted-pair/ThinWire
Token Ring SNMP Adapter	**4N-AEAEO-CG**	2 UPS to Network, ThinWire and twisted-pair (120V)
Token Ring Network Adapter	**4N-AEAEO-CH**	2 UPS to Network, ThinWire and twisted-pair (120V)

* PUPS Plus 24 and 26kVA models require 4 ft connector cable, call for information.

Upgrade Kits for PUPS Plus (Not customer installable, requires service engineer)	
4N-AEAAH-CA	3.6 to 6 kVA
4N-AEAAL-CA	10 to 12kVA
4N-AEAAN-CA	15 to 18kVA

Options for Smart-UPS/Matrix	
4N-APAOA-AK	PowerNet Software Agent for Novell, allows SNMP Mangement
4N-APAOA-BK	SNMP adapter for ThinNet connections (two UPS)
4N-APAOA-BN	SNMP adapter for 10BaseT (one UPS)
4N-APAOA-BM	SNMP rackmount kit
4N-APAOA-BR	External SNMP adapter, Token Ring 16mbps
4N-APAOA-BT	Mini-SNMP adapter, 10BaseT (small profile for Matrix models)
4N-APMAH-AC	Caster kit for Matrix models
4N-APAOA-BL	Measure-UPS environmental unit[1]
4N-APAOA-CE	Call-UPS II remote UPS management device for Matrix and Smart-UPS (600VA and above)[4]
4N-APAOA-AC	Power Doctor for MS-DOS (diagnostic software only)
4N-APAOA-CA	Share-UPS multiple CPU shutdown device[3]
AC Power "Surge Arrest" and Desktop Management Devices	
4N-APATS-BA	POW6 Powermanager with surge protection[2]
4N-APATS-BB	POW6T Powermanager with telephone and surge protection[2]
4N-APATS-AA	Personal series strip with (7) 5-15R, non-computer applications only
4N-APATS-AC	Pro series intermediate grade strip with telephone line protection (7) 5-15R
4N-APATS-AB	Network series premium strip with (7) 5-15R
4N-APATS-AD	Network series premium grade strip with telephone line protection (7) 5-15R
Internal Smart-Slot Cards for Smart-UPS Models	
4N-APAOA-CB	SNMP adapter for 10BaseT
4N-APAOA-CC	Interface expander for monitoring and multiple system shutdown, up to three systems
4N-APAOA-CF	Expansion chassis for connecting multiple smart slot cards to one UPS
4N-APAOA-CD	Remote UPS management via modem (see Call-UPS features)

1 Measure-UPS allows remote monitoring of temperature, humidity, and four contact closures. Requires SNMP adapter, Power Doctor, or PowerChute Plus for Novell, OS/2, Windows NT.
2 Provides power cord management, separate control, site wiring, and surge protection fault indication for up to five options.
3 Provides UPS monitoring and unattended shutdown of up to eight CPUs connected to same Smart-UPS or Matrix UPS. Requires PowerChute software on each CPU.
4 Allows remote boot, dial back and paging. When used with PowerChute software, provides full UPS monitoring and management.

Modular Power Distribution/Conditioning Distribution—PDM/CDM

These power distribution modules and conditioning distribution modules are designed to be the central source of distribution and conditioning of electrical power to computer equipment. They replace the H7317 (PDS+) and H7318 (PCS+) product set. Combined with flexible output distribution cables, these systems offer maximum flexibility and portability to preserve capital investment and lower lifecycle costs.

Features

- Microprocessor monitoring and isolation.
- Optional environmental monitoring package.
- LCD display of many different power parameters
- Audible/visual alarms.
- Emergency power-off circuit.
- Shielded isolation transformer for electrical noise reduction.
- Output distribution panels with 42 pole positions at 30 kVA and 84 poles at all other levels, up to 100 kVA.
- Completely compatible with the present “BC” series of flexible power distribution cables; offer a portable and reliable equipment connection and come pre-assembled with circuit breakers and receptacles.
- Conditioning distribution module provides electronic voltage regulation with auto-bypass control, in case of regulator failure; can accept input voltage range from –27% to +15% while maintaining an output voltage of ±3% of nominal.
- Ideal for facilitating computer room consolidations.

Configuration Information

- Determine NEMA plug type and select cables with breakers and receptacles.
- Note the number of poles required to select appropriate PDM or CDM. Specify Square D or Bryant type circuit breakers. See PDM / CDM distribution cable chart
- Models without monitoring are also available.
- All Power Distribution Models and Conditioning Distribution Modules are 3 phase, 208/120V output

Power Distribution Modules (PDM) 208V Input Models

4N-CUPDM-AB	30-kVA PDM, 42 poles,
4N-CUPDM-AJ	50-kVA PDM, 84 poles
4N-CUPDM-AD	75-kVA PDM, 84 poles
4N-CUPDM-AE	100-kVA PDM, 84 poles

Power Distribution Modules (PDM) 480V Input Models

4N-CUPDM-HB	30-kVA PDM, 42 poles
4N-CUPDM-HJ	50-kVA PDM, 84 poles
4N-CUPDM-HD	75-kVA PDM, 84 poles
4N-CUPDM-HE	100-kVA PDM, 84 poles

Conditioning Distribution Modules (CDM) 208V Input Models

4N-CUCDM-AB,	30-kVA CDM, 42 poles
4N-CUCDM-AJ,	50-kVA CDM, 84 poles
4N-CUCDM-AD	75-kVA CDM, 84 poles
4N-CUCDM-AE,	100-kVA CDM, 84 poles

Conditioning Distribution Modules (CDM) 480V Input Models

4N-CUCDM-HB	30-kVA CDM, 42 poles
4N-CUCDM-HJ	50-kVA CDM, 84 poles
4N-CUCDM-HD	75-kVA CDM, 84 poles
4N-CUCDM-HE	100-kVA CDM, 84 poles

Modular Power Distribution/Conditioning Distribution—PDM/CDM *(continued)*

PDM / CDM distribution cable chart

- Includes square D plug-in circuit breaker and receptacles shown. Suffix denotes length in feet.
- Select 4N-BC24K-xx for use with Power Distribution Models (PDM); omit 4N- for use with Conditioning Distribution Modules (CDM)

4N-BC24K-20/30/40 (2) 5-15R with 15A-1P circuit breaker
4N-BC24L-20/30/40 (4) 5-15R with 15A-1P circuit breaker
4N-BC24N-20/30/40 (2) 5-20R with 20A-1P circuit breaker
4N-BC24P-20/30/40 (4) 5-20R with 20A-1P circuit breaker
4N-BC24S-20/30/40 (1) L5-30R with 30A-1P circuit breaker
4N-BC24T-20/30/40 (1) L6-20R with 20A-2P circuit breaker
4N-BC24U-20/30/40 (1) L14-20R with 20A-2P circuit breaker
4N-BC24V-20/30/40 (1) L21-20R with 20A-3P circuit breaker
4N-BC24W-20/30/40 (1) L21-30R with 30A-3P circuit breaker
4N-BC26E-20/30/40 (1) L6-30R with 30A-2P circuit breaker
4N-BC28Z-20/30/40 (1) L14-30R with 30A-2P circuit breaker

Dimensions and Weights for PDM, CDM, and PDU (PDM and CDM with Monitoring)

kVA	H x W x D	Unit Weight (PDM)	Unit Weight (CDM)
30	62 x 27 x 27 inches (157 x 68 x 68 cm)	540 lb (245 kg)	1160 lb (527 kg)
50	69 x 34 x 34 inches (175 x 86 x 86 cm)	795 lb (361 kg)	1675 lb (761 kg)
75	69 x 34 x 34 inches (175 x 86 x 86 cm)	935 lb (426 kg)	1975 lb (898 kg)
100	69 x 34 x 34 inches (175 x 86 x 86 cm)	1055 lb (480 kg)	2360 lb (1073 kg)

Transient Voltage Surge Suppressers

The 4N-GAXXX family of Transient Voltage Surge Suppresser (TVSS) products prevent high-energy impulses that can damage a computer system or corrupt data. ZoneGuardian, ZoneMaster, and ZoneSentinel devices include user-friendly LED diagnostics to indicate faulty wiring and operational readiness.
ZoneMaster power panel devices include redundant parallel modules and auxiliary contacts for remote annunciation. Flexible “plug and play" power strip and snap-in data communication modules ensure total desktop protection. All devices carry a full 5-year warranty.

Zone Guardian power/data system includes connected load hardware warranty. Zone Guardian Plus power/data system includes additional 1 year software and stored data operational warranty.

TVSS Quick Selection Chart

AC Power Surge Devices	Order Number	Application	Configuration	Maximum Surge	Peak clamp[1] (Voltage maximum)
ZoneGuardian	**4N-GA350-xx**[2]	Terminals, PCs, desktop UPS systems, fax machines, client workstations, printers	3 and 7 5-15R	10 kA	400V (L-N)[3] 330V (L-N)[4]
ZoneGuardian Plus	**4N-GA420/ 430-XX**	High-end workstations, servers	3 and 7 5-15R	10 kA	270V (L-N)[3] 240 V (L-N)[4]
ZoneMaster 140	**4N-GA171-xx**	Primary power panel	1 per panel	140 kA-300 VA	400–1500V[3]
ZoneMaster 75	**4N-GA112-xx**	Primary or secondary power panel	1 per panel	75 kA-150 kA	400–800V[3]
ZoneSentinel[7]	**4N-GA121-xx**	Secondary power panel[7]	1 per panel	40 kA	400–1000V[3,8]
Data Surge Devices	**Order Number**	**Application**	**Configuration**	**Maximum Surge**	**Peak clamp[1] (Voltage maximum)**
ZoneGuardian CPP	**4N-GA240-xx**[5]	Snap-in extender modules for Desktop data/tel	Up to 4 per Zone Guardian or SCP module	2 kA	10–27V(data)[6] 105–270 (tel)
DLM Series	**4N-GA210-xx**	Hardwired comm line	8 modules/encl.		12–27V
SCP Series	**4N-GA249-xx**	Used with UPS system for total protection	Plugs into standard 15A receptacle, add up to 4 CPP modules per receptacle		10–27V (data)[6] 105–270 (tel)
Zone Barrier Series	**4N-GA245-xx**	Standalone & Din rail mount	Up to 32 modules per rail, rack or wall mount		12-27V (data)
MDL Series Enclosure Modules Cables	**4N-GA250-xx** **4N-GA262-xx** **4N-GA264-xx** **4N-GA270-xx** **4N-GA272-xx** **4N-GA276-xx** **4N-GA277-xx**	Data Truck Line	3 & 20 modules per enclosure	1.9-3 kA	12-27V (data)[6] 105-270V (tel)

1 Minimum Clamp V threshold of power modules is 150.
2 Use 4N-GA440-AD for systems with 5-20R plug.
3 Clamp V at 6 kV (1.2/50 ms) and 3 kA (8/20 ms) IEEE CAT B impulse test. UL 1449 for panel devices.
4 Clamp V at 6 kV (1.2/50 ms) and 500A (8/20 ms) UL 1449 for receptacle devices.
5 4N-GA240 data protection modules must be used in combination with 4N-GA350/420/430 & 4N-249 plug surge protectors. Number of modules unlimited on strip models.
6 Clamp V at 2 kV (1.2/50 ms) and 1000A (8/20 ms).
7 Also for any system requiring 3-phase power or non-standard plug types.
8 When used in series with Zonemaster devices, maximum let through voltage is 330V.

Note: All power protector models feature protection on all modes (L-N, L-G, and N-G) at 330V maximum let through voltage.

Transient Voltage Surge Suppressers *(continued)*

Application Information

- Panelboard Protection
  - Main panel protection is the single best way to reduce all high-level power surges from external disturbances to safe levels within the building.
  - Use the ZoneMaster 75 series at the service entrance of small single three-story facilities and at sub-panels feeding sensitive equipment. Use the 140 series at the service entrance of larger facilities or where lightning is more prevalent, such as the southeastern and southern areas of the U.S.
  - Zone Sentinel devices are ideal for protecting a dedicated secondary panel within a building or may be used as main panel protection to handle lower surge levels.
- Desktop Power and Data/Network Protection
  - As long as there is a communications port available on the device to be protected, it is important that BOTH power AND the communications port are protected. Protecting power or data/telephone alone in these situations increases the likelihood of voltage potential differences and resulting damage to equipment.

AC Desktop Protector Options

ZoneGuardian Plus—Premium Performance (10 KA max)	
4N-GA420-AD	Three-outlet, 15A wall plug
4N-GA430-AF	Three-outlet, 15A power strip[2]
4N-GA430-AG	Seven-outlet, 15A power strip[2]
4N-GA440-AD[1]	One 20A 5-20R outlet with wall plug[2]
4N-GA440-AE[1]	One 20A L5-20R outlet with wall plug[2]
ZoneGuardian—High Quality Performance (10 KA max)	
4N-GA350-CK	Three-outlet, 15A wall plug
4N-GA350-DA	Three-outlet, 15A power strip[2]
4N-GA350-DB	Seven-outlet, 15A power strip[2]

1. Not ZoneGuardian Series Devices—will not accept CPP modules
2. All Power Strips and GA440 devices furnished with 6-foot cord

AC Panel Protection ZoneMaster 140—Main Panel Protection (140 KA max)	
4N-GA171-AA	120/240V 1-phase 3W, 400V clamp
4N-GA171-AB	120/208V 3-phase 4W WYE, 400V clamp
4N-GA171-AC	120/240V 3-phase 4W Delta, 400V clamp
4N-GA171-AD	240V 3-phase 3W Delta, 800V clamp
4N-GA171-AE	277/480V 3-phase 4W WYE, 800V clamp
4N-GA171-AF	350/600V 3-phase 4W WYE, 1500V clamp
4N-GA171-AG	480V 3-phase 3W Delta, 1500V clamp
ZoneMaster 75—Main and Secondary Panel Protection (75 KA max)	
4N-GA112-AA	120/240V 1-phase 3W, 400-V clamp
4N-GA112-AB	120/208V 3-phase 4W WYE, 400-V clamp
4N-GA112-AC	120/240V 3-phase 4W Delta, 400-V clamp
4N-GA112-AD	240-V 3-phase 3W Delta, 800-V clamp
4N-GA112-AE	277/480V 3-phase 4W WYE, 800-V clamp
4N-GA112-AF	350/600V 3-phase 4W WYE, 1500-V clamp
4N-GA112-AG	480V 3-phase 3W Delta, 1500-V clamp
ZoneSentinel—Secondary Panel Protection (40 KA max)	
4N-GA121-AA	120/240V 1-phase 3W, 400-V clamp
4N-GA121-AB	120/208V 3-phase 4W WYE, 400-V clamp
4N-GA121-AC	120/240V 3-phase 4W Delta, 400-V clamp
4N-GA121-AD	240V 3-phase 3W Delta, 600-V clamp
4N-GA121-AE	277/480V 3-phase 4W WYE, 1000-V clamp

Transient Voltage Surge Suppressers *(continued)*

Communication Port Protection

ZoneGuardian Series CPP modules are supplemental snap-on devices to be used for communications port protection with ZoneGuardian AC surge or to extend the number of ports on SCP modules below. Wall plug models limited to four modules per suppresser.

CPP Modules	
4N-GA240-AB	2 wire dial-up, RJ11
4N-GA240-AC	2-2 wire dial-up, RJ11
4N-GA240-AD	4 wire leased line, RJ11
4N-GA240-AE	4 wire leased line, term strip
4N-GA240-AF	4 wire digital data, RJ485
4N-GA240-AG	4 wire data, term strip
4N-GA240-AH	4 wire T1 RJ48C
4N-GA240-AJ	4 wire T1 term strip
4N-GA240-AK	EIA-232 4 wire+SH, term strip
4N-GA240-BA	EIA-232 5 wire, term strip
4N-GA240-BB	EIA-232 8 wire, RJ45
4N-GA240-BC	EIA-232 6 wire, MMJ
4N-GA240-BD	EIA-422 4 wire+SH, term strip
4N-GA240-BE	EIA-232 4 wire RJ45
4N-GA240-BF	EIA-232 6 wire RJ45
4N-GA240-BG	EIA-423 4 wire+SH, term strip
4N-GA240-BH	EIA-423 6 wire, MMJ
4N-GA240-BJ	EIA-485 2 wire+GRD term strip
4N-GA240-CA	E-NET 4 wire 10BaseT, RJ45
4N-GA240-CB	IBM 3270 video one-wire with shield, BNC
4N-GA240-CH	EIA-232 4 wire Token Ring RJ45
4N-GA240-CJ	EIA-422 4 wire tern strip
4N-GA240-EA	8 wire UL category 5, RJ45
SCP Modules (standalone Communications Port Protectors) add up to 4 CPP modules to increase number of ports	
4N-GA249-BB	EIA-232 8 wire RJ45
4N-GA249-BH	EIA-232 6 wire RJ45
4N-GA249-AB	2 wire Dial-Up, RJ11 Telco
4N-GA249-AD	4 wire leased line, RJ11 Telco
4N-GA249-AF	4 wire Digital Data, RJ48S Telco
4N-GA249-BB	8 wire RS232, RJ45
4N-GA249-BE	4 wire RS232, RJ45
4N-GA249-BH	6 wire RS423, MMJ
4N-GA249-CA	4 wire 10BaseT, RJ45
4N-GA249-EA	8 wire RJ45, UL Category 5
In-line Devices (Attach to Device Port)	
4N-GA510-BF	Ethernet ThinWire
4N-GA700-BH	EIA-232, 12 wire, DB25F/DB25M
4N-GA700-BA	EIA-232, 8 wire, DB9

Note: All order numbers include one 7-foot data cable with mating connectors. CPP modules must be used with ZoneGuardian series AC TVSS devices. SCP modules plug into wall receptacle for standalone protection.

Accessories for DB25 and DB9 EIA-232 Communication Interfaces	
H8575-A	MMJ-to-DB25 EIA-232 adapter
H8571-J	MMJ-to-DB9 EIA-232 adapter
BC16E-10	10-foot 6-wire jumper cable with MMJ connectors

Note: Use of these adapters will not allow full modem control.

Transient Voltage Surge Suppressers *(continued)*

Zone Barrier Din Rail Mount Devices	
4N-GA245-AA	17.5” Din Rail w/19” rackmount kit, up to 32 modules
4N-GA245-AB	2 wire Dial-Up, RJ11
4N-GA245-AC	4 wire leased line, RJ11
4N-GA245-AF	4 wire Digital Data Service, RJ48S Telco
4N-GA245-AH	4 wire TI, RJ48C Telco
4N-GA245-BB	8 wire RS232, RJ45
4N-GA245-CA	4 wire 10BaseT Ethernet, RJ45
4N-GA245-CB	Coax IBM 3270/Video, RJ45
4N-GA245-CD	TwinAx IBM AS400/S3X
4N-GA245-CF	4 wire Dial-Up, RJ11
4N-GA245-CH	4 wire Token Ring, RJ45
4N-GA245-EA	8 wire RJ45, UL Category 5

Technical Data	General/Environmental
Operating temperature range	–40° to 85° C (–40° to 185° F)
Operating humidity range	0 to 95% (non-condensing)
Maximum continuous oper volts	25% above nominal service voltage
Safety cutout	Thermal protection against sustained overvoltages above maximum continuous but below clamp level
Enclosures	Durable lightweight plastic UL94-5V flame retardant. ZoneMaster products meet NEMA 1, 2, 3R, 3S, 12, and 13 classifications
Three-function LEDs on power module	red = gnd not present or L-N reversal; green = normal operation Note: communication protector modules failsafe via short circuit to gnd.
Maximum Peak clamp volts[1]	See TVSS (Quick Selection Chart)

1. Clamp levels given for L-N and L-L modes, where most damage occurs.

	ZoneGuardian 4N-GA350	ZoneGuardian Plus 4N-GA420, 4N-GA430
Hybrid clamp circuit (MOV, coil, capacitor)	3 stage	5 stage

	ZoneMaster 75	ZoneMaster 140	ZoneSentinel
Weight	6 lb (2.72 kg)	10 lb (4.54 kg)	4 lb (1.8 kg)
Size	10 x 8 x 4 in.	12 x 12 x 6 in.	8 x 6 x 4 in.
Stage/clamp component	Single stage MOV	Single stage MOV	Single stage MOV
No. redundant components	2 @40 kA	4@40 kA	1@40 kA
Required input circuit breaker		60 Amps	30 Amps