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POWERWARE 5130 HV

PW 1250 R/T 2U
PW 1750 R/T 2U
PW 2500 R/T 2U
PW 3000 R/T 2U
PW 3000 R/T 3U
PW 3000 R/T 2U 208V
PW EBM 1250/1750
PW EBM 2500/3000 2U & 3U

Technical data sheets:

manufacturer's declaration according to IEC 62040-3

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PW5130 rack/Tower

1250, 1750, 2500,3000 208V, 3000 2U & 3U, EBM 1250, EBM 3000

/ CEI 62040-3

Technical data sheets - Manufacturer declaration

UPS tests reference only	Characteristic of equipment	Units and/or informations	Manufacturer's declared values	Minimum performance requirements, methods and references
	Construction			
	Model catalogue reference		PW5130 1250 R/T 2U PW5130 1750 R/T 2U PW5130 2500 R/T 2U PW5130 3000 208V R/T 2U PW5130 3000 R/T 2U PW5130 3000 R/T 3U PW5130 EBM 1250/1750 PW5130 EBM 2500/3000	
	Model rating	VA ou W	1250VA / 1150W / 0.92 1750VA / 1600W / 0.91 2500VA / 2250W / 0.9 3000VA / 2700W / 0.9 3000VA / 2700W / 0.9 3000VA / 2700W / 0.9	PW5130 1250 R/T 2U PW5130 1750 R/T 2U PW5130 2500 R/T 2U PW5130 3000 208V R/T 2U PW5130 3000 R/T 2U PW5130 3000 R/T 3U
	Topology		Line Interactive	
	Dimensions L x D x H	mm	See separate declaration	If details, to specify them in the separate declaration
	Weight	Kg	See separate declaration	If details, to specify them in the separate declaration
	Weight with batteries if integrated	kg	See separate declaration	If details, to specify them in the separate declaration
	Environmental			
4.1.4	Ambient storage temperature range	° C	-15° C to +50° C	-15° C to +50° C For Altitude < 1000m and moisture 20 to 95% T° specified, equipment with and without batteries
4.1.2	Ambient service temperature	° C	0 to 40°C	Range for operation 0°C with 40°C But if ASI in a room, range +10° C to +35° C
4.1.1	Maximun service altitude	m	1000m and P = nP – 10% all the 1000m	Until 1000m included For 1500 to 5000m, coefficient of downgrading from 0,95 to 0,67
4.1.3	Relative humidity range	%	Storage : 10% to 90% Operation : 20% to 90%	without condensation

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UPS tests reference only	Characteristic of equipment	Units and/or informations	Manufacturer's declared values	Minimum performance requirements, methods and references
	Degree of protection in accordance with IEC 60529	IP	IP 20	IP XX first X (/ foreign body) 2nd X (/ water)
7.3	Acoustic noise at 1m - On utility power - On buck/boost mode - On battery mode	 dBA dBA dBA	 40dBA max (without buzzer and batt full recharged) 45dBA max 45dBA max (100% SPS load)	Measurements in accordance with standard ISO 7779 (0,15m < d < 8m according to dimensions of the source of noise, with ,preference 1m).
	Electrical characteristics – Input			
5.2.2 and 6.3.2.1	Rated input voltage and Voltage tolerance	nominal V P < 1/2nP P < 2/3nP P > 2/3nP	All model except PW3000 208V 230V +28 % (294V) - 30 % (160V) Extended mode - 35 % (150V) PW3000 208V RT : 208V +26% (263V) -23%(160V) Extended mode : -28% (150V)	Nominal value of input voltage, and thresholds of passage in stored energy mode by input voltage exceeding the tolerance To specify : if there is no a change of mode to stored energy mode by U + 10% or if the thresholds depend on the load use Minimal value of input votage allowing the refill battery during normal operation UPS (230V default value)
5.2.2 and 6.3.2.2	Rated input frequency and frequency tolerance	Hz	Normal mode : 50Hz-60Hz (-6% +16%) Extended mode : 50Hz-60Hz (-20% +16%	Nominal value of input frequency and thresholds of a change of mode to stored energy mode of the UPS, by input frequency exceeding the tolerance If it there not a change of mode to stored energy mode, to specify the minimum and maximum frequency possible for the UPS
5.2.2 and 6.3.10	Rated input current Nominal RMS current (battery full charged) R load RCD load	 A r.m.s	 5.4A 7.6A 10.9A 13A 15.1A	Nominal voltage (230V) PW5130 1250 R/T 2U PW5130 1750 R/T 2U PW5130 2500 R/T 2U PW5130 3000 R/T 2U / 3U Nominal voltage (208V) PW5130 3000 208V R/T 2U Nominal voltage (230V) PW5130 1250 R/T 2U PW5130 1750 R/T 2U PW5130 2500 R/T 2U PW5130 3000 R/T 2U / 3U Nominal voltage (208V) PW5130 3000 208V R/T 2U

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5 .2.2 and 6.3.9.2	Nominal Input current – worst case			Nominal voltage (230V)
			8.2A	PW5130 1250 R/T 2U
			11.5A	PW5130 1750 R/T 2U
			16.4A	PW5130 2500 R/T 2U
			19.7A	PW5130 3000 R/T 2U / 3U
				Nominal voltage (208V)
			19.7A	PW5130 3000 208V R/T 2U

UPS tests reference only	**Characteristic of equipment**	**Units and/or informations**	**Manufacturer's declared values**	**Minimum performance requirements, methods and references**
5.2.2	Input current distortion at rated input current	% TDH		
		On line R load	<2%	PW5130 1250 R/T 2U
			<2%	PW5130 1750 R/T 2U
			<2%	PW5130 2500 R/T 2U
			<2%	PW5130 3000 208V R/T 2U
			<2%	PW5130 3000 R/T 2U
			<2%	PW5130 3000 R/T 3U
5.2.2 and 6.3.10	Input power factor			With input current at 100% rated VA and W on linear load and non linear load
			1250VA / 0.92	PW5130 1250 R/T 2U
			1750VA / 0.91	PW5130 1750 R/T 2U
			2500VA / 0.9	PW5130 2500 R/T 2U
			3000VA / 0.9	PW5130 3000 208V R/T 2U
			3000VA / 0.9	PW5130 3000 R/T 2U
			3000VA / 0.9	PW5130 3000 R/T 3U
5.2.2 and 6.3.3	Inrush current	% ot the rated curent value		Maximum peak value of current measured after mains power down of 1 second and 5 minutes (if the perturbance < 1ms it is not retained)
			1250VA / 100%	PW5130 1250 R/T 2U
			1750VA / 100%	PW5130 1750 R/T 2U
			2500VA / 100%	PW5130 2500 R/T 2U
			3000VA / 100%	PW5130 3000 208V R/T 2U
			3000VA / 100%	PW5130 3000 R/T 2U
			3000VA / 100%	PW5130 3000 R/T 3U
5.2.2	Number of phases	Phase(s)	1 Phase and Neutral	
	Output waveform			
5.3.1.2	Waveform - Normal mode		Sinusoidal	Sinusoidal or non sinusoidal
5.3.1.2	Waveform - Stores energy mode		Sinusoidal	Sinusoidal or non sinusoidal
	Transfer - Normal mode / Stored energy	Break	Break	
		No break		

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	Break time / Make time (if applicable)	ms	Transfert time on battery mode : * *Normal mode* **Mains → UPS :** 10ms max **Mains ⇔ Boost or Buck :** 6ms typical / 10ms max **UPS → Mains :** 2~6ms typical / 10ms max * *Low mode* **Mains → UPS :** 10ms typical / 25ms max **Mains ⇔ Boost or Buck :** 6ms typical / 10ms max **UPS → Mains :** 10ms typical / 25ms max	Transfer transients and times measured at the time of tranfer load from UPS to an alternative source and return, by command or defect of switches of coupling and bypass

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UPS tests reference only	Characteristic of equipment	Units and/or informations	Manufacturer's declared values	Minimum performance requirements, methods and references
	Electrical output characteristics - Static characteristics - Normal mode			
5.3.2	Rated output voltage	V r.m.s	200/208/220/230/240V	
	Output voltage variation	V r.m.s	230V default value +28 % (294V) - 30 % (160V) Extended mode - 35 % (150V)	Output voltage measured at the two ends of the range of rated power factor and with nominal rated votage Voltage variation = maximum and minimum measured value
	Output frequency (nominal)	Hz	Same as utility 50Hz or 60Hz	
6.3.2.2	Output frequency variation (synchronized if applicable)	Hz	All model Normal mode : 50Hz – 60Hz (6% + 16%) (47 to 70Hz) Extended mode : 50Hz 60Hz (20% +16%) (40 to 70Hz)	Thresholds of maximum frequency for which the UPS remains synchronized with the mains To specify also ,UPS freqency variation with stored energy mode
6.3.6.3	Output frequency synchronized phase error at change of mode	Degrees	Transfer with break and continuity alternation	*On line* : if non tranfer by a change of mode to stored energy mode, to note 0 *Off line* : To note the measurements of dephasing compared with the fundamental, at the time of the transfer of source when the mains return
	Rated output apparent power	VA	1250VA 1750VA 2500VA 3000VA 3000VA 3000VA	PW5130 1250 R/T 2U PW5130 1750 R/T 2U PW5130 2500 R/T 2U PW5130 3000 208V R/T 2U PW5130 3000 R/T 2U PW5130 3000 R/T 3U
	Rated output active power across a linear load	W	1150W 1600W 2250W 2700W 2700W 2700W	PW5130 1250 R/T 2U PW5130 1750 R/T 2U PW5130 2500 R/T 2U PW5130 3000 208V R/T 2U PW5130 3000 R/T 2U PW5130 3000 R/T 3U
	Rated output active power across a reference non linear load	W	1150W 1600W 2250W 2700W 2700W 2700W	PW5130 1250 R/T 2U PW5130 1750 R/T 2U PW5130 2500 R/T 2U PW5130 3000 208V R/T 2U PW5130 3000 R/T 2U PW5130 3000 R/T 3U
6.3.4.2	Total voltage distortion across a linear load	%	Useless (load on mains)	UPS mode with nominal rated output power VA

Powering Business Worldwide

UPS tests reference only	Characteristic of equipment	Units and/or informations	Manufacturer's declared values	Minimum performance requirements, methods and references
6.3.8.1	Total voltage distortion across a reference non linear load	%	Useless (load on mains)	UPS mode with nominal rated output power VA and dc voltage load capacitor ≤ 1.22 x of UPS output voltage
6.3.4.2	Individual harmonics voltage		Useless (load on mains)	Measurements with nominal rated power VA
5.3.2 and 6.3.5.3	Short-circuit capability Maximum RMS current (in normal mode, battery full charged) VA × 1.05 / Line low detection or input protection current rating if lower		30A < 4 cycles 45A < 4 cycles 80A < 4 cycles 80A < 4 cycles 80A < 4 cycles 80A < 4 cycles	PW5130 1250 R/T 2U PW5130 1750 R/T 2U PW5130 2500 R/T 2U PW5130 3000 208V R/T 2U PW5130 3000 R/T 2U PW5130 3000 R/T 3U
5.3.2 and 6.3.5.1	Overload capability		105% +5%-4.5% : shutdown after 30mn 120% +5%-5%: shutdown after 5mn 150% +5%-5% : shutdown after 10s	Overload applied on the output terminals of the UPS when the UPS is in normal mode at resistive load Measurements of the time duration during which the output voltage remains in the rated range
5.3.2 and 6.3.4	Range of load power factor permitted - linear load		Only with non linear load or linear load	
	Number of phases	Phase(s)	1 phase and Neutral	
5.3.2 et 6.3.4.5	Output voltage unbalance at reference unbalance load (multiphase only)	%	Useless	2 phases with nominal linear load and the other phase at no load
5.3.2 et 6.3.4.5	Maximum phase angle variation (multiphase only)	Degrees	Useless	
6.3.4.6	Output voltage d.c component - Linear load	%	Useless (Load on mains)	Average value of the output voltage, during 10 s, lower than 0,1% of rms voltage value.
	Electrical output characteristics - Dynamic characteristics - Normal mode			
5.3.2 , 6.3.6.1 and 6.3.6.2	Output voltage dynamic variation during transfer normal/stored energy mode of operation and vice versa		Transfert with interuption	To note Fig 1, 2 or 3 and specified UPS Performance with nominal power W and resistive linear load - mains voltage stopped with 0 and maximum of sinusoide , during t > 1s _ 3 times minimum, to ensure itself of the repetitivity, during t > 1s - Return mains voltage to all angular positions of the sinusoide
6.3.7.1 and 6.3.8.4	Output voltage dynamic variation due to load changes		Useless (Load on mains)	To note Fig 1, 2 or 3 to specify the performance and to announce if the performances are > - Linear load P (W) : measurements UPS peak voltage, for variation 0% to 100% then 100% to 20% of nP - Non linear load P (VA) : UPS < 4KVA, measurement of the transitory variation of U, for variation 25% to 100% then 100% to 25% of nP UPS > 4KVA, measurement of the transitory variation of U, for variation 33% to 66% then 66% to 99% then 99% to 66% then 66% to 33% of nP

	Maximum rate of change of output frequency	Hz/s	Useless (Load on mains)	

Powering Business Worldwide

UPS tests reference only	Characteristic of equipment	Units and/or informations	Manufacturer's declared values	Minimum performance requirements, methods and references
	Electrical output characteristics - Static characteristics - Stored energy mode			
5.3.1	Rated output voltage	V r.m.s	200, 208,220, 230, 240 (if configuration by communication : USB or RS232)	
6.3.4.4	Output voltage variation	V r.m.s	On all products : -10% / + 6%	Measurements of the regulated voltage, at the 2 ends of the range of FP, to the nominal FP, UPS functioning with nominal linear load , from there, of beginning of stored energy mode until end of stored energy mode
6.3.4.3	Rated peak output voltage	V	380 V	Measurements of the regulated voltage, UPS functioning with stored energy mode , at no load
6.3.4.4	Rated peak output voltage variation	V	On all products : 260V min (End of backup time)	Measurements of the regulated voltage, at the 2 ends of the range of FP, to the nominal FP, UPS functioning with nominal linear load , from there, of beginning of stored energy mode until end of stored energy mode
5.3.1.2	Non sinusoidal voltage rise time 0.1 to 0.9 peak (if waveform exceeds 0.5V/µs)	V/µs	Sine wave	With nominal rated output power W dV / dt ≤ 10V/µs
5.3.2	Output frequency	Hz	50Hz – 60Hz (detected on mains) On cold start default is 50Hz for HV	
5.3.2	Output frequency variation	Hz	50Hz – 60Hz	Range of the frequency regulation
5.3.2	Rated output apparent power	VA	1250VA 1750VA 2500VA 3000VA 3000VA 3000VA	PW5130 1250 R/T 2U PW5130 1750 R/T 2U PW5130 2500 R/T 2U PW5130 3000 208V R/T 2U PW5130 3000 R/T 2U PW5130 3000 R/T 3U
5.3.2	Rated output active power	W	1150W 1600W 2250W 2700W 2700W 2700W	PW5130 1250 R/T 2U PW5130 1750 R/T 2U PW5130 2500 R/T 2U PW5130 3000 208V R/T 2U PW5130 3000 R/T 2U PW5130 3000 R/T 3U
5.3.2	Rated output active power non linear load	W	1150W 1600W 2250W 2700W 2700W 2700W	PW5130 1250 R/T 2U PW5130 1750 R/T 2U PW5130 2500 R/T 2U PW5130 3000 208V R/T 2U PW5130 3000 R/T 2U PW5130 3000 R/T 3U

Powering Business Worldwide

UPS tests reference only	Characteristic of equipment	Units and/or informations	Manufacturer's declared values	Minimum performance requirements, methods and references
6.3.4.4	Total output voltage distortion	% THD	< 8% without load < 25% during nominal backup time at full load	Measurements, with UPS with rated nominal power (VA)
6.3.4.4	Individual harmonic voltage linear load		See separate declaration	Measurements, with UPS with rated nominal power (VA)
5.3.2 et 6.3.8.2	Individual harmonic voltage non linear load		See separate declaration	Measurements, with UPS with rated and fitted nominal power (VA) Dc voltage of capacitor of reference load remaining at 1,22% of UPS output voltage
5.3.2 et 6.3.5.4	Short-circuit capability		30A < 4 cycles 45A < 4 Cycles 80A < 4 Cycles 80A < 4 Cycles 80A < 4 Cycles 80A < 4 Cycles	Short circuit applied on the output terminals of the UPS with stored energy mode at no load For three phase outputs, Ph /Ph et Ph/N , if a neutral is provided PW5130 1250 R/T 2U PW5130 1750 R/T 2U PW5130 2500 R/T 2U PW5130 3000 208V R/T 2U PW5130 3000 R/T 2U PW5130 3000 R/T 3U
5.3.2 et 6.3.5.2	Overload capability		105% +5%-4.5% : shutdown after 10s 110% +5%-5% : shutdown after>5 cycles	Overload applied on the output terminals of the UPS with stored energy mode at resistive load Measurements of the time duration during which the output voltage remains in the rated range
5.3.2	Range of load power factor permitted		From 0,6 to 1	
5.3.2	Number of output phases (multiphase only)	Phase(s)	1 phase and Neutral	
	Electrical characteristics - Dynamic characteristics - Stored energy mode			
6.3.6.1	Output voltage dynamic variation during transfer from stored energy mode to normal mode		Transfer with break	The same conditions as UPS in normal mode
6.3.7.1	Output voltage dynamic variation due to load changes		Complies with figure 3	The same conditions as UPS in normal mode
	Efficiency			
6.6.11	Efficiency input / output	%	On all products : ≥ 75%	UPS in normal mode with nominal power
	Synchronization (if applicable)			
6.3.6.4	Acceptable voltage difference	%	Useless	
6.3.2.2	Range of frequency synchronization	Hz	Useless	
6.3.6.4	Maximum phase error	degees	Useless	

Powering Business Worldwide

UPS tests reference only	Characteristic of equipment	Units and/or informations	Manufacturer's declared values	Minimum performance requirements, methods and references
5.4	**Stored energy mode of operation**			
	Duration of maximum permitted stored energy time at rated load	min	See separate declaration	Normal temperature of test ,25° C
6.3.9.1	Store energy time (for integral batteries) at rated load	min	See separate declaration	Normal temperature of test ,25° C
6.3.9.2	Restored energy time to 90% charge (for integral batteries) Batteries recharge profile	h	See separate declaration 2.27V ± 2% /cell 2.35V ± 2% /cell max -3mV/Cell mini / +°C	Normal temperature of test ,25° C To specify ,if batteries recharge with constant limiting current. In floating voltage, ripple current is 0,05xCmaxi
	Batteries rating and quantity (for integral batteries) Battery cabinet	Ah and units	48Vdc 1250VA 48Vdc for 1750VA 72Vdc for 2500VA 72Vdc for 3000VA 48Vdc 72Vdc	12V/7.2Ah *4 in series 12V/9Ah *4 in series 12V/7.2Ah × 6 in series 12V/9Ah × 6 in series 12V 9Ah (2 strings of 4 in serial) 12V 9Ah (2 strings of 6 in serial)
6.3.9.1	Battery cut-off voltage	V With no load	1.6V/cell Ubatt min 2.5V/cell Ubatt max	Normal temperature of test 25°c
5.8	**Control and monitoring signals**			
	Separate declaration for complete list of indications and remote alarm/monitoring or interface devices		See separate declaration	
5.5.2	**Bypass characteristics**			
	Type of bypass	Manuel Automatic	Useless	
	Mecanical / Static	Mecanical Static	Useless	
	No break transfer / Break transfer	No break Break	Useless	No break if recovering UPS / CS
	Break time / make time	ms	Useless	If mains HT
	Maintenance Bypass	Yes No	Useless	
	Bypass protection fus or circuit-breaker rating	A	Useless	
	Galvanic isolation fitted	Yes No	Useless	

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UPS tests reference only	Characteristic of equipment	Units and/or informations	Manufacturer's declared values	Minimum performance requirements, methods and references
5.7	**Electromagnetic compatibility**			
	Immunity see IEC/EN 62040-2		See separate declaration	- Immunity to electrostatic discharges - Immunity to radiated
	Emission see IEC/EN 62040-2		See separate declaration	- conducted a.c mains - conducted a.c output - Radiated - electric field - Radiated - magnetic field
	Individual input harmonics current		See separate declaration	

Powering Business Worldwide

1250, 1750, 2500, 3000 2U & 3U, EBM 1250, EBM 3000 / CEI 62040-3
Technical data sheets - Separate declaration

Dimensions and weight of equipment

Product size (WxHxD, mm) 2U = 88.9mm 3U=133.35 Depth = depth sheetmetal / depth include front panel for rack (socket length is not included)	441.2 x 86.2 x 475 / 509 441.2 x 86.2 x 600 / 634 441.2 x 130.7 x 450 / 484	1250/1750/EBM 48V RT 2U 2500/3000/EBM 72V RT 2U 3000/EBM 72V RT 3U
Product weight (+/- 0.5kg)	24.3/26.6/30.40 33.8/33.8/34.3/41.70	1250/1750/48VEBM 2500 2U /3000 2U/3000 3U/ 3U 72VEBM
Packaging size (WxHxD, mm)	590*800*235 590*975*235 590*775*277	1250/1750/EBM 48V RT 2U 2500/3000 RT 2U 3000/EBM 72V RT 3U
Packaging weight (+/- 0.5kg)	32/34.3/37.36 42.1/42.1/39.5/45.5	1250/1750/48VEBM 2500 2U /3000 2U/3000 3U/ 3U 72VEBM

Electrical Output characteristics - Static characteristics – Normal Mode

Individual harmonic voltages linear load ⇒ Useless because load on mains

Individual harmonic voltages non-linear load ⇒ Useless because load on mains

Electrical Output characteristics - Static characteristics –Stored energy mode

Individual harmonic voltages linear load

Harmonic	**U% rms**			
Pulsar Evolution	**1250VA**	**1750VA**	**2500VA**	**3000VA**
H3	1.214	0.919	1.382	2.924
H5	1.033	0.803	2.948	4.484
H7	0.979	0.736	1.345	1.654
H9	0.982	0.757	1.071	0.142

Manufacturer's declaration according to IEC 62040-3

H11	0.843	0.582	0.854	1.369
H13	0.771	0.735	0.702	0.983
H15	0.645	0.598	0.504	0.455
H17	0.348	0.517	0.713	0.614
H19	0.189	0.398	0.429	0.721
H21	0.177	0.395	0.259	0.474
H23	0.140	0.288	0.527	0.257
H25	0.178	0.173	0.202	0.472
H27	0.136	0.188	0.156	0.356

Individual harmonic voltages non-linear load

Harmonic	**U% rms**			
Pulsar Evolution	**1250VA**	**1750VA**	**2500VA**	**3000VA**
H3	5.015	5.313	6.519	6.658
H5	5.691	6.038	6.187	6.118
H7	4.303	4.510	4.968	5.022
H9	1.745	1.891	2.68	2.623
H11	0.105	0.565	1.622	1.450
H13	2.081	1.994	0.803	0.697
H15	1.343	1.600	1.491	1.478
H17	0.714	0.731	1.052	1.025
H19	0.443	0.391	0.658	0.799
H21	0.532	0.470	0.290	0.321
H23	0.390	0.360	0.354	0.339
H25	0.184	0.180	0.286	0.317
H27	0.223	0.099	0.154	0.161

Stored energy time

Standard model (XX% means XX% of full Watts SPS load at PF=0.7)

1250VA / 1150W model

Configuration	115W SPS	288W SPS	575W SPS	863W SPS	1150W SPS+PFC
Internal battery only	1H59Min	32Min38S	15Min22S	6Min21S	5Min
1 battery cabinets	7H10Min	2H30Min	58Min	42Min	29Min49S

Manufacturer's declaration according to IEC 62040-3

2 battery cabinets	12H21Min	4H27Min	1H40Min	1H17Min	54Min38S
3 battery cabinets	17H32Min	6H24Min	2H23Min	1H53Min	1H19Min
4 battery cabinets	22H43Min	8H22Min	3H05Min	2H28Min	1H44Min

1750VA / 1600W model

Configuration	160W SPS	400W SPS	800W SPS	1200W SPS	1600W PFC
Internal battery only	1H20Min	24Min	9Min35S	5Min40S	3Min30S
1 battery cabinets	4H05Min	1H36Min	36Min11S	24Min	16Min
2 battery cabinets	6H50Min	2H48Min	1H02Min	42Min20S	28Min30S
3 battery cabinets	9H35Min	4H	1H29Min	1H	41Min
4 battery cabinets	12H20Min	5H12Min	1H55Min	1H19Min	53Min30S

2500VA / 2250W model (Min)

Configuration	225W SPS	563W SPS	1125W SPS	1938W SPS	2250W PFC
Internal battery only	1H17Min	28Min	11Min15S	5Min46S	3Min
1 battery cabinets	5H	2H02Min	55Min	31Min	23Min
2 battery cabinets	6H50Min	3H27Min	1H40Min	59Min	42Min
3 battery cabinets	13H	5H09Min	2H30Min	1H30Min	1H3Min
4 battery cabinets	17H44Min	6H52Min	3H26Min	2H	1H25Min

3000VA/2700W model(Min)

Configuration	270W SPS	675W SPS	1350W SPS	2025W SPS	2700W PFC
Internal battery only	1H10Min	24Min15S	10Min15S	5Min30S	3Min
1 battery cabinets	4H02Min	1H45Min	44Min	25Min	17Min
2 battery cabinets	7H28Min	3H	1H13Min	47Min	32Min
3 battery cabinets	10H34Min	4H15Min	1H41Min	1H09Min	47Min
4 battery cabinets	13H40Min	5H30Min	2H10Min	1H31Min	1H02Min

Restored energy time to 90% capability

1250VA/1750VA/2500VA/3000VA Recharge Time Table(Min)

1250/1750	3 hours to 90% capability
1250/1750 + 1 EXB	18 hours to 90% capability
1250/1750 + 2 EXB	29 hours to 90% capability
1250/1750 + 3 EXB	46 hours to 90% capability
1250/1750 + 4 EXB	65 hours to 90% capability
2500/3000	3 hours to 90% capability
2500 / 3000+ 1 EXB	7 hours to 90% capability
2500 / 3000+ 2 EXB	16 hours to 90% capability
2500 / 3000+ 3 EXB	24 hours to 90% capability
2500 / 3000+ 4 EXB	30 hours to 90% capability

Powering Business Worldwide

Control and monitoring signals

Man machine interface (front panel)

3.51 Definition		
Item	***Specification***	***Comments***
❑.... General	1 On/Off button..... 3 general status Leds..... 8 bargraph Leds (battery / load level)..... 2 power share status Leds ..... Buzzer	1 2-3-4 5-6 7
① On/Off button	To start/stop the UPS	With 3s delay
② Load protected	See table of operation below	Green General Led
③ Minor or environment fault	See table of operation below	Yellow General Led
④ Load unprotected	See table of operation below	Red General Led
⑤ Battery level bargraph	From 0 to 25% : first Led From 26% to 50% : the 2 first Leds From 51% to 75% : the 3 first Leds From 76% to 100% : the 4 Leds	
⑥ Load level bargraph	From 0 to 25% : first Led From 26% to 50% : the 2 first Leds From 51% to 75% : the 3 first Leds From 76% to 100% : the 4 Leds	
⑦ Power share Plug #1 & #2 status	Off ..... On	Plug not powered Plug powered
❑.... Pictogram	See picture below	
❑.... Buzzer	See table of operation below	
❑.... Site wiring fault	Red Led at rear panel	For LV models only

Powering Business Worldwide

3.52 Operation

Operation	ON/OFF switch	Switch LED	Load status		General Leds			Buzzer	% battery level	% load level	2 Leds Poweshare
					Green	Yellow	Red				
On mains	OFF		Unpowered					0	1 to 4 leds	0 led	
On mains	ON	🟢	Powered	Protected	🟢			0	1 to 4 leds	0 to 4 leds	
On battery (from transfer)		🟢	Powered	Protected	🟢	🟡		1, 2	1 to 4 leds	0 to 4 leds	
On battery (from battery test)		🟢	Powered	Protected	🟢			0	**Alternate**	0 to 4 leds	
Buck/boost		🟢	Powered	Protected	🟢			0	1 to 4 leds	0 to 4 leds	
Ovlerload		🟢	Powered	Protected	🟢	🟡		0	1 to 4 leds	**Flash**	
		🟢	Powered	un protected			🔴	3	1 to 4 leds	**Flash**	
			Unpowered				🔴	3	1 to 4 leds	**Flash**	
Short circuit			Unpowered				🔴	3	1 to 4 leds	**Flash**	
Internal fault		🟢	Powered	un protected			🔴	3	1 to 4 leds	0 to 4 leds	
			Unpowered				🔴	3	1 to 4 leds	0 to 4 leds	
Battery fault		🟢	Powered	un protected			🔴	3	**Flash**	0 to 4 leds	
End of battery life (LCM)		🟢	Powered	Protected	🟢	🟡		0	**Flash**	0 to 4 leds	
Powershare plugs								0	1 to 4 leds	0 to 4 leds	🟢 🟢
RPO activated			Unpowered			🟡		0	1 to 4 leds	0 leds	

Flash : the 4 Leds flash

1 to 4 leds : 0-1 to 4 Led are lighted according to % of load / battery level

Alternate : Led switch On and Off step by step

Buzzer : 0 = none, 1 = On (0.5s) / Off (10s) on battery mode, 2 = On (0.5s) / Off (3s) under pre alarm, 3 = continuous

Communication ports :

- RS232
- USB

Optional cards for UPS :

- Status information card
- SNMP card

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E.M.C

Radiated radio-frequency disturbances, in accordance with EN 50091-2 and EN 55011 A Class, EN 55022 B class optional, Including line and battery mode.

Electrostatic discharges: in accordance with IEC / EN 61000-4-2 Level 4

Radiated susceptibility: in accordance with IEC / EN 61000-4-3 and ENV 50204 10 V/m

Electrical fast transient: in accordance with IEC / EN 61000-4-4 Level 4

Surges: in accordance with IEC / EN 61000-4-5) Level 4, Common mode and Level 3, Differential mode.

Input current harmonic components : in accordance with IEC 61000-3-2 standard.
(With nominal rms current)

Current Test Result Summary (Run time)

EUT: Uninterruptible Power Systems M/N:PW5130 1250 230V Rack/Tower 2U
Tested by: Mark
Test category: Class-A per Ed. 3.0 (2005-11) (European limits) Test Margin: 100
Test date: 2008-06-03 Start time: 16:18:51 End time: 16:20:12
Test duration (min): 1 Data file name: H-000219.cts_data
Comment: FULL LOAD
Customer: EATON POWER QUALITY SAS

Test Result: Pass Source qualification: Normal
THC(A): 0.15 I-THD(%): 4.08 POHC(A): 0.020 POHC Limit(A): 0.251
Highest parameter values during test:

V_RMS (Volts):	229.96	Frequency(Hz):	50.00
I_Peak (Amps):	5.681	I_RMS (Amps):	3.876
I_Fund (Amps):	3.872	Crest Factor:	1.467
Power (Watts):	880.2	Power Factor:	0.988

Harm#	Harms(avg)	100%Limit	%of Limit	Harms(max)	150%Limit	%of Limit	Status
2	0.003	1.080	0.3	0.004	1.620	0.28	Pass
3	0.123	2.300	5.3	0.123	3.450	3.55	Pass
4	0.005	0.430	1.1	0.005	0.645	0.78	Pass
5	0.081	1.140	7.1	0.081	1.710	4.74	Pass
6	0.004	0.300	1.2	0.004	0.450	0.88	Pass
7	0.018	0.770	2.3	0.018	1.155	1.55	Pass
8	0.004	0.230	1.7	0.004	0.345	1.22	Pass
9	0.032	0.400	8.1	0.033	0.600	5.43	Pass
10	0.003	0.184	1.7	0.003	0.276	1.23	Pass
11	0.004	0.330	1.3	0.004	0.495	0.86	Pass
12	0.003	0.153	2.0	0.003	0.230	1.48	Pass
13	0.020	0.210	9.6	0.020	0.315	6.45	Pass
14	0.003	0.131	1.9	0.003	0.197	1.43	Pass
15	0.006	0.150	4.0	0.006	0.225	2.70	Pass
16	0.003	0.115	2.5	0.003	0.173	1.76	Pass
17	0.017	0.132	12.7	0.017	0.199	8.44	Pass
18	0.002	0.102	1.8	0.002	0.153	1.37	Pass
19	0.004	0.118	3.1	0.004	0.178	2.13	Pass
20	0.002	0.092	2.2	0.002	0.138	1.60	Pass
21	0.014	0.107	12.9	0.014	0.161	8.61	Pass
22	0.001	0.084	1.7	0.002	0.125	1.35	Pass
23	0.002	0.098	2.4	0.002	0.147	1.68	Pass
24	0.001	0.077	1.9	0.002	0.115	1.35	Pass
25	0.010	0.090	10.8	0.010	0.135	7.74	Pass
26	0.003	0.071	3.8	0.003	0.106	2.88	Pass
27	0.006	0.083	6.9	0.007	0.125	5.26	Pass
28	0.008	0.066	11.4	0.008	0.099	7.79	Pass
29	0.009	0.078	11.3	0.009	0.116	7.64	Pass
30	0.004	0.061	6.8	0.004	0.092	4.59	Pass
31	0.006	0.073	8.3	0.006	0.109	5.56	Pass
32	0.007	0.058	11.8	0.007	0.086	8.04	Pass
33	0.005	0.068	6.6	0.005	0.102	4.70	Pass
34	0.002	0.054	4.1	0.002	0.081	2.95	Pass
35	0.002	0.064	3.5	0.002	0.096	2.40	Pass
36	0.000	0.051	0.7	0.000	0.077	0.56	Pass
37	0.002	0.061	2.5	0.002	0.091	1.73	Pass
38	0.000	0.048	0.6	0.001	0.073	0.79	Pass
39	0.002	0.058	4.2	0.003	0.087	2.89	Pass
40	0.000	0.046	0.7	0.001	0.069	0.85	Pass

Powering Business Worldwide

Current Test Result Summary (Run time)

EUT: Uninterruptible Power Systems M/N: PW5130 1750 230V Rack/Tower 2U
Tested by: Mark
Test category: Class-A per Ed. 3.0 (2005-11) (European limits) Test Margin: 100
Test date: 2008-06-03 Start time: 15:19:47 End time: 15:21:08
Test duration (min): 1 Data file name: H-000217.cts_data
Comment: FULL LOAD
Customer: EATON POWER QUALITY SAS

Test Result: Pass Source qualification: Normal
THC(A): 0.27 I-THD(%): 20.36 POHC(A): 0.044 POHC Limit(A): 0.251
Highest parameter values during test:

V_RMS (Volts):	230.00	Frequency(Hz):	50.00
I_Peak (Amps):	2.766	I_RMS (Amps):	1.379
I_Fund (Amps):	1.346	Crest Factor:	2.006
Power (Watts):	274.2	Power Factor:	0.865

Harm#	Harms(avg)	100%Limit	%of Limit	Harms(max)	150%Limit	%of Limit	Status
2	0.009	1.080	0.8	0.009	1.620	0.58	Pass
3	0.074	2.300	3.2	0.074	3.450	2.16	Pass
4	0.008	0.430	1.9	0.008	0.645	1.31	Pass
5	0.183	1.140	16.1	0.183	1.710	10.72	Pass
6	0.007	0.300	2.3	0.007	0.450	1.63	Pass
7	0.070	0.770	9.0	0.070	1.155	6.05	Pass
8	0.006	0.230	2.8	0.007	0.345	2.01	Pass
9	0.102	0.400	25.5	0.102	0.600	17.01	Pass
10	0.005	0.184	2.9	0.006	0.276	2.03	Pass
11	0.073	0.330	22.2	0.073	0.495	14.83	Pass
12	0.004	0.153	2.9	0.005	0.230	2.04	Pass
13	0.059	0.210	28.1	0.059	0.315	18.83	Pass
14	0.004	0.131	2.9	0.004	0.197	2.05	Pass
15	0.060	0.150	39.7	0.060	0.225	26.60	Pass
16	0.002	0.115	2.1	0.003	0.173	1.50	Pass
17	0.047	0.132	35.5	0.047	0.199	23.62	Pass
18	0.003	0.102	3.4	0.004	0.153	2.39	Pass
19	0.032	0.118	27.1	0.032	0.178	18.19	Pass
20	0.003	0.092	2.9	0.003	0.138	2.09	Pass
21	0.012	0.107	11.6	0.013	0.161	7.84	Pass
22	0.003	0.084	3.0	0.003	0.125	2.14	Pass
23	0.019	0.098	19.0	0.019	0.147	12.76	Pass
24	0.002	0.077	2.8	0.003	0.115	2.22	Pass
25	0.011	0.090	11.7	0.011	0.135	8.13	Pass
26	0.004	0.071	5.3	0.004	0.106	3.62	Pass
27	0.009	0.083	10.9	0.010	0.125	8.36	Pass
28	0.007	0.066	11.2	0.009	0.099	8.93	Pass
29	0.021	0.078	27.4	0.023	0.116	20.03	Pass
30	0.004	0.061	6.5	0.005	0.092	5.89	Pass
31	0.017	0.073	23.5	0.019	0.109	17.85	Pass
32	0.007	0.058	11.7	0.008	0.086	8.87	Pass
33	0.017	0.068	24.8	0.017	0.102	17.00	Pass
34	0.003	0.054	5.6	0.004	0.081	4.33	Pass
35	0.010	0.064	16.1	0.011	0.096	11.39	Pass
36	0.001	0.051	2.1	0.001	0.077	1.45	Pass
37	0.011	0.061	18.3	0.011	0.091	12.33	Pass
38	0.002	0.048	3.3	0.002	0.073	2.62	Pass
39	0.009	0.058	14.9	0.009	0.087	10.18	Pass
40	0.001	0.046	3.1	0.002	0.069	2.44	Pass

Powering Business Worldwide

Current Test Result Summary (Run time)

EUT: Uninterruptible Power Systems M/N: PW5130 3000 230V Rack/Tower 2U
Tested by: Mark
Test category: Class-A per Ed. 3.0 (2005-11) (European limits) Test Margin: 100
Test date: 2008-06-04 Start time: 11:33:28 End time: 11:34:49
Test duration (min): 1 Data file name: H-000222.cts_data
Comment: FULL LOAD
Customer: EATON POWER QUALITY SAS

Test Result: Pass Source qualification: Normal
THC(A): 0.42 I-THD(%): 18.47 POHC(A): 0.064 POHC Limit(A): 0.251
Highest parameter values during test:

V_RMS (Volts):	229.99	Frequency(Hz):	50.00
I_Peak (Amps):	4.163	I_RMS (Amps):	2.367
I_Fund (Amps):	2.324	Crest Factor:	1.764
Power (Watts):	514.4	Power Factor:	0.945

Harm#	Harms(avg)	100%Limit	%of Limit	Harms(max)	150%Limit	%of Limit	Status
2	0.006	1.080	0.6	0.008	1.620	0.49	Pass
3	0.189	2.300	8.2	0.189	3.450	5.47	Pass
4	0.008	0.430	1.9	0.009	0.645	1.38	Pass
5	0.267	1.140	23.4	0.267	1.710	15.60	Pass
6	0.006	0.300	2.0	0.007	0.450	1.46	Pass
7	0.067	0.770	8.7	0.068	1.155	5.85	Pass
8	0.007	0.230	2.9	0.007	0.345	2.08	Pass
9	0.172	0.400	43.0	0.172	0.600	28.69	Pass
10	0.005	0.184	2.7	0.006	0.276	2.01	Pass
11	0.066	0.330	20.1	0.067	0.495	13.46	Pass
12	0.004	0.153	2.8	0.005	0.230	2.13	Pass
13	0.117	0.210	55.5	0.117	0.315	37.05	Pass
14	0.004	0.131	3.2	0.005	0.197	2.32	Pass
15	0.067	0.150	44.9	0.068	0.225	30.03	Pass
16	0.002	0.115	1.5	0.002	0.173	1.24	Pass
17	0.081	0.132	61.7	0.082	0.199	41.04	Pass
18	0.004	0.102	4.0	0.004	0.153	2.92	Pass
19	0.051	0.118	43.0	0.051	0.178	28.82	Pass
20	0.002	0.092	2.2	0.002	0.138	1.63	Pass
21	0.032	0.107	30.3	0.033	0.161	20.35	Pass
22	0.003	0.084	3.7	0.003	0.125	2.79	Pass
23	0.035	0.098	35.4	0.035	0.147	23.77	Pass
24	0.002	0.077	3.0	0.002	0.115	2.17	Pass
25	0.004	0.090	4.4	0.004	0.135	3.13	Pass
26	0.003	0.071	3.7	0.004	0.106	3.84	Pass
27	0.008	0.083	9.1	0.009	0.125	7.22	Pass
28	0.008	0.066	12.3	0.009	0.099	8.81	Pass
29	0.018	0.078	22.7	0.018	0.116	15.50	Pass
30	0.004	0.061	7.1	0.005	0.092	5.64	Pass
31	0.017	0.073	23.9	0.019	0.109	17.44	Pass
32	0.007	0.058	11.6	0.007	0.086	8.24	Pass
33	0.015	0.068	21.8	0.017	0.102	16.43	Pass
34	0.004	0.054	6.7	0.004	0.081	4.67	Pass
35	0.018	0.064	28.5	0.019	0.096	19.44	Pass
36	0.001	0.051	1.7	0.001	0.077	1.51	Pass
37	0.015	0.061	25.3	0.016	0.091	17.04	Pass
38	0.002	0.048	3.7	0.002	0.073	2.62	Pass
39	0.023	0.058	40.1	0.023	0.087	26.87	Pass
40	0.002	0.046	4.0	0.002	0.069	2.89	Pass