



Combotrade Thirteen (Pty) Ltd T/A PowerMan Reg No. 97/02468/07

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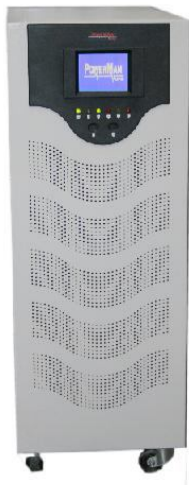
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## The On-Line Three-phase UPS Range

The Three phase UPS's can be divided into two sections - the first is the units that have a three phase input and a single phase output, and the second is the units designed to have both input and output three phase.



PM33-40 40KVA UPS

The three phase UPS's run under a double conversion design principal. The incoming mains is converted directly into DC. This DC power is used to charge the batteries and to drive the inverter, which in turn runs the load. Should the mains fail the batteries will simply carry on driving the inverter, and start to discharge as opposed to charging. The units have a built in Static By-Pass feature which enables the machine to transfer the load to normal mains under certain conditions. There is no break on the output on transfer to or from the mains.

### Features.

- Units can be operated as single units, paralleled or configured in hot stand-by.
- Automatic & manual battery boost / Monthly boost / Current boost.
- Automatic & manual battery test with indication of result.
- Automatic battery charge voltage compensation for elevated temperatures.
- Rectifier input frequency range of 45 to 65 Hz , auto select.
- Inverter overload capability of 150 %, temp depending.
- Useable as frequency converters from 50/60 Hz to 16.6,50, 60 or 400 Hz.
- Double static switch.
- Dot matrix LCD display of vital parameter and basic system control.

- Electronic safety-interlock for manual Bypass Isolator, preventing damage from incorrect switching operation.
- Mains isolated on-line design maximizes load circuit protection.
- Single control card (for any power rating, configuration or frequency).
- Systems are Multi-Microprocessor controlled to achieve ultimate reliability.
- Excellent M.T.B.F. figures achieved due to reduced component count.
- PCB intelligent configurable via PC.
- Novell DB9 and RS 232 interface ports for monitoring & communication.
- Data logging with user selective error log options included.

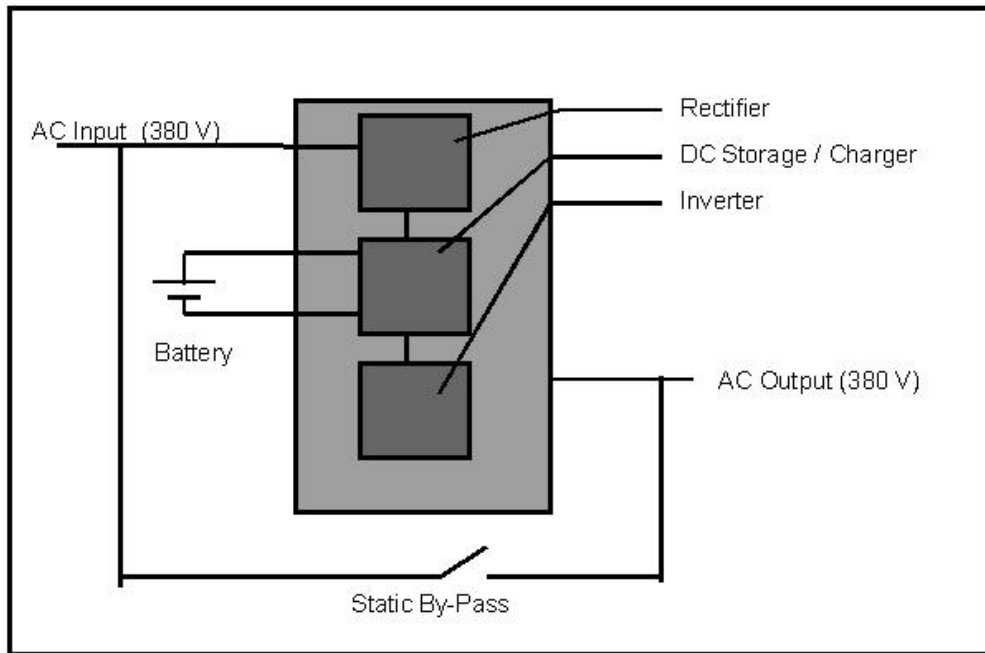


Figure 1 - UPS Block Diagram

### Run Times

	<b>10KVA</b>	<b>15 KVA</b>	<b>20KVA</b>	<b>30KVA</b>	<b>40KVA</b>
BAT360-7AH	7 to 15 min	*	*	*	*
BAT360-17AH	15 to 40 min	8 to 20 min	*	*	*
BAT360-24AH	30 to 70 min	15 to 40 min	12 to 30 min	*	*
BAT360-45AH	70 to 150 min	30 to 70 min	30 to 70 min	12 to 30 min	9 to 22 min
BAT360-66AH	100 to 250 min	60 to 135 min	45 to 105 min	25 to 60 min	17 to 45 min
BAT360-102AH	180 to 450 min	100 to 250 min	90 to 180 min	45 to 105 min	35 to 80 min

	<b>50KVA</b>	<b>60KA</b>	<b>80KVA</b>	<b>100KVA</b>
BAT360-66AH	12 to 30 min	10 to 20 min	7 to 15 min	*
BAT360-102AH	25 to 60 min	20 to 50 min	15 to 40 min	9 to 22 min

## Specifications.

<p><b><u>Rectifier</u></b> Voltage  Output  Frequency Features  Programmable</p>	<p>3 Phase 4 wire plus earth 400V / 415V AC -20% +10% Power rating 120% of inverter nominal Soft start - no inrush current Voltage depending on batteries 180 cells (30 x 12V batteries) = 405 VDC Regulation <math>\pm 1\%</math> Ripple &lt; 2 % 50 / 60 Hz Auto select Thermo-magnetic input CB protection MOV over voltage protection Phase rotation supervision Auto boost programmable Constant current battery charging Gen-set current limit option Input current limit Output voltage Boost voltage Boost time Battery charge current Battery Temperature</p>
<p><b><u>Inverter</u></b> DC Input Range VA Rating Load Power Factor Output Voltage Regulation  Overloads at 25 C  Electronic current limiting Crest Factor  Short circuit protection Output Wave Form Total Harmonic Distortion Audible Noise Frequency (free running)</p>	<p>300 - 435 VDC 10 KVA to 100 KVA 0,8 3 Phase 380V / 400V / 415V AC Static : <math>\pm 1\%</math> Dynamic : <math>\pm 5\%</math> Recovery to 90% in 1.5 ms &lt; 110% Continuous &lt; 150% for 10 seconds &lt; 200% for 1 second &gt; 200 % 3 : 1 up to 60 KVA 2.5 : 1 60 KVA and above By hardware at <math>\pm 300\%</math> Sinusoidal &lt; 3% 50 to 60 dBA (depending on cooling option) 50,60,400 Hz <math>\pm 0.1\%</math></p>
<p><b><u>Static by-pass</u></b> Rating Transfer points on Voltage Fault Detection Time Transfer Time Protection</p>	<p>150 % Continuous , 1500% for 5 cycles <math>\pm 10\%</math> &lt; 200 us Zero Rectifier input CB Battery input CB &amp; fuse Static by-pass input CB Fuse protection on all other circuits</p>
<p><b><u>Communications</u></b> Microprocessor RS232 Interface 4 Row LCD</p>	<p>Standard Standard</p>
<p><b><u>Environmental Conditions</u></b> Temperature Range  Humidity Warranty</p>	<p>0 to 40 C at sea level (full load) 35 C at 2000 Meters (full load) 40 % to 60 % (Maximum 90%) 12 Months</p>