

## H 3-PHASE ONLINE UPS TECHNICAL SPECIFICATION

**Table 1. 10KVA ~ 60KVA UPS 3-Phase Input / 3-Phase Output**

KVA	10	20	30	40	50	60
<b>RECTIFIER</b>						
INPUT VOLTAGE	220VΔ / 380VΔ / 460VΔ, 208VY / 380VY / 400VY / 415VY					
INPUT RANGE	+/- 20%V					
INPUT FREQUENCY	50 / 60 Hz +/- 5Hz					
INPUT POWER FACTOR	0.8					
NORMAL INPUT CURRENT(A)	18	36	54	72	90	108
MAXIMUM INPUT CURRENT(A)	24	45	68	90	113	136
POWER WALK IN	0% - 100% : 20 sec					
EFFICIENCY	99%					
VOLTAGE REGULATION	1%					
CURRENT LIMIT(A)	27	54	81	108	135	162
RIPPLE VOLTAGE	0.5%					
<b>BATTERY</b>						
BATTERY TYPE	SEAL LEAD ACID / NiCd					
NO. OF CELLS	174 / 271					
VOLTAGE RANGE	295 – 410VDC / 285-415VDC					
MAXIMUM CHARGE CURRENT (ADC)	5	10	15	20	25	30
BATTERY LOW VOLTAGE	320VDC / 305VDC					
BATTERY LOW STOP VOLTAGE	295VDC / 285VDC					
BOOST CHARGE	402VDC / 415VDC					
FLOAT CHARGE	390VDC / 410VDC					

KVA	10	20	30	40	50	60
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### INVERTER

DC INPUT RANGE	285 – 420VDC					
WAVE FORM	SINUSOID					
OUTPUT VOLTAGE	380 / 400 / 415 VAC 3 Phase 4 Wire					
OUTPUT POWER FACTOR	0.8					
VOLTAGE REGULATION 100% UNBALANCE LOAD	+ / - 1 %					
FREQUENCY LOCK RANGE	45 – 55 Hz / 55 – 65 Hz					
OUTPUT FREQUENCY (FREE RUNNING)	50 / 60 Hz + / - 0.1 Hz					
PHASE SHIFT UNDER 100% UNBALANCE LOAD	120 % + / - 0.5°					
THD (LINEAR LOAD)	< 2 %					
OVERLOAD	<110%	CONTINUOUS				
	110 – 125%	15 min				
	125 – 150%	10 min				
	> 150%	60 sec				
EFFICIENCY (100% LOAD)	93%	93%	93%	93.5%	93.5%	94%
MAXIMUM OUTPUT PEAK CURRENT(A)	43	87	130	174	218	260

### STATIC SWITCH

VOLTAGE RANGE	173 – 277 VAC (LINE TO NEUTRAL)					
FREQUENCY RANGE	45 – 55 Hz / 55 – 65 Hz					
EFFICIENCY	99.5%					
TRANSFER TIME:						
- MAINS -> INVERTER	0 ms					
- INVERTER -> MAINS	0 ms					
OVERLOAD	100%	30 sec				
	300%	1 sec				
ISOLATION WITH OUTPUT	YES					

<b>KVA</b>	<b>10</b>	<b>20</b>	<b>30</b>	<b>40</b>	<b>50</b>	<b>60</b>
<b>OVERALL CHARACTERISTICS</b>						
OVERALL EFFICIENCY	91%	91%	91%	91.5%	92%	92%
<b>OPERATING ENVIRONMENT:</b>						
- TEMPERATURE	0 – 40°C ( 32 – 104°F )					
- HUMIDITY	0% - 90% ( NON-CONDENSING )					
- ALTITUDE	<1500 M ABOVE SEA LEVEL					
MAXIMUM HEAT DISSIPATION(KW)	0.65	1.3	1.9	2.6	3	3.5
WEIGHT(Kg) (No Battery)	270	300	400	480	550	680
<b>DIMENSION:</b>						
- HEIGHT(mm)	1600					
- WIDTH(mm)	550					
- DEPTH(mm)	800					
- AUDIBLE NOISE	< 65 dBA (AT 1 m)					
<b>STANDARDS:</b>						
- EN50091-1,-2	YES					
- FCC CLASS A	YES					
<b>PROTECTIONS:</b>						
- SHORT CIRCUIT	RECTIFIER, RESERVE, BYPASS NFB					
- LIGHTNING	MOV					
- EMC FILTER	INPUT & OUTPUT					
- GALVANIC ISOLATION	BETWEEN INPUT & OUTPUT					
DATA DISPLAY BY LCD	YES					
<b>INDICATIONS &amp; ALARMS:</b>						
- LED,LCD,BUZZER	YES					
DRY CONTACT	YES					
BATTERY START	YES					

☆All specifications mentioned above are subject to change without prior notice.

**Table 2. 80KVA ~ 160KVA UPS 3-Phase Input / 3-Phase Output**

<b>KVA</b>	<b>80</b>	<b>100</b>	<b>120</b>	<b>160</b>
<b>RECTIFIER</b>				
INPUT VOLTAGE	380 / 400 / 415VAC 3 Phase 4 Wire			
INPUT RANGE	307 – 520V			
INPUT FREQUENCY	50 / 60 Hz +/- 7%			
INPUT POWER FACTOR	0.8			
NORMAL INPUT CURRENT(A)	144	180	216	288
MAXIMUM INPUT CURRENT(A)	180	225	270	360
POWER WALK IN	0% - 100% : 20 sec			
EFFICIENCY	99%			
VOLTAGE REGULATION	1%			
CURRENT LIMIT(A)	216	270	324	432
RIPPLE VOLTAGE	0.5%			
<b>BATTERY</b>				
BATTERY TYPE	SEAL LEAD ACID / NiCd			
NO. OF CELLS	174 / 271			
VOLTAGE RANGE	295 – 410VDC / 285-415VDC			
MAXIMUM CHARGE CURRENT (ADC)	40	50	60	80
BATTERY LOW VOLTAGE	320VDC / 305VDC			
BATTERY LOW STOP VOLTAGE	295VDC / 285VDC			
BOOST CHARGE	402VDC / 415VDC			
FLOAT CHARGE	390VDC / 410VDC			

<b>KVA</b>	<b>80</b>	<b>100</b>	<b>120</b>	<b>160</b>
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### **INVERTER**

DC INPUT RANGE		285 – 420VDC			
WAVE FORM		SINUSOID			
OUTPUT VOLTAGE		380 / 400 / 415 VAC 3 Phase 4 Wire			
OUTPUT POWER FACTOR		0.8			
VOLTAGE REGULATION 100% UNBALANCE LOAD		+ / - 1 %			
FREQUENCY LOCK RANGE		45 – 55 Hz / 55 – 65 Hz			
OUTPUT FREQUENCY (FREE RUNNING)		50 / 60 Hz + / - 0.1 Hz			
PHASE SHIFT UNDER 100% UNBALANCE LOAD		120 % + / - 0.5°			
THD (LINEAR LOAD)		< 2 %			
OVERLOAD	<110%	CONTINUOUS			
	110 – 125%	15 min			
	125 – 150%	10min			
	> 150%	60 sec			
EFFICIENCY (100% LOAD)		94.5%	94.5%	95%	95%
MAXIMUM OUTPUT PEAK CURRENT(A)		348	432	520	693

### **STATIC SWITCH**

VOLTAGE RANGE		173 – 277 VAC (LINE TO NEUTRAL)			
FREQUENCY RANGE		45 – 55 Hz / 55 – 65 Hz			
EFFICIENCY		99.5%			
TRANSFER TIME:					
- MAINS -> INVERTER		0 ms			
- INVERTER -> MAINS		0 ms			
OVERLOAD	100%	30 sec			
	300%	1 sec			
ISOLATION WITH OUTPUT		YES			

<b>KVA</b>	<b>80</b>	<b>100</b>	<b>120</b>	<b>160</b>
<b>OVERALL CHARACTERISTICS</b>				
OVERALL EFFICIENCY	92.5%	92.5%	93%	93%
<b>OPERATING ENVIRONMENT:</b>				
- TEMPERATURE	0 - 40°C ( 32 - 104°F )			
- HUMIDITY	0% - 90% ( NON-CONDENSING )			
- ALTITUDE	<1500 M ABOVE SEA LEVEL			
MAXIMUM HEAT DISSIPATION(KW)	4.6	5.4	6.5	8.7
WEIGHT(Kg) (No Battery)	820	950	1180	1450
<b>DIMENSION:</b>				
- HEIGHT(mm)	1600			
- WIDTH(mm)	1100			
- DEPTH(mm)	800			
- AUDIBLE NOISE	< 65 dBA (AT 1 m)			
<b>STANDARDS:</b>				
- EN50091-1,-2	YES			
- FCC CLASS A	YES			
<b>PROTECTIONS:</b>				
- SHORT CIRCUIT	RECTIFIER, RESERVE, BYPASS NFB			
- LIGHTNING	MOV			
- EMC FILTER	INPUT & OUTPUT			
- GALVANIC ISOLATION	BETWEEN INPUT & OUTPUT			
DATA DISPLAY BY LCD	YES			
<b>INDICATIONS &amp; ALARMS:</b>				
- LED,LCD,BUZZER	YES			
DRY CONTACT	YES			
BATTERY START	YES			

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**Table 3. 200KVA ~ 320KVA UPS 3-Phase Input / 3-Phase Output**

<b>KVA</b>	<b>200</b>	<b>240</b>	<b>300</b>	<b>320</b>
<b>RECTIFIER</b>				
INPUT VOLTAGE	380 / 400 / 415VAC 3 Phase 4 Wire			
INPUT RANGE	307 – 520V			
INPUT FREQUENCY	50 / 60 Hz +/- 7%			
INPUT POWER FACTOR	0.8			
NORMAL INPUT CURRENT(A)	350	420	525	560
MAXIMUM INPUT CURRENT(A)	437	525	656	700
POWER WALK IN	15% - 100% : 15 sec			
EFFICIENCY	99%			
VOLTAGE REGULATION	1%			
CURRENT LIMIT(A)	525	630	788	840
RIPPLE VOLTAGE	0.5%			
<b>BATTERY</b>				
BATTERY TYPE	SEAL LEAD ACID / NiCd			
NO. OF CELLS	174 / 271			
VOLTAGE RANGE	295 – 410VDC / 285-415VDC			
MAXIMUM CHARGE CURRENT (ADC)	100	120	150	160
BATTERY LOW VOLTAGE	320VDC / 305VDC			
BATTERY LOW STOP VOLTAGE	295VDC / 285VDC			
BOOST CHARGE	402VDC / 415VDC			
FLOAT CHARGE	390VDC / 410VDC			

KVA	200	240	300	320
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### INVERTER

DC INPUT RANGE		285 – 420VDC			
WAVE FORM		SINUSOID			
OUTPUT VOLTAGE		380 / 400 / 415 V 3 Phase 4 Wire			
OUTPUT POWER FACTOR		0.8			
VOLTAGE REGULATION 0-100% LOAD		+ / - 1 %			
FREQUENCY LOCK RANGE		45 – 55 Hz / 55 – 65 Hz			
OUTPUT FREQUENCY (FREE RUNNING)		50 / 60 Hz + / - 0.1 Hz			
PHASE DIFFERENCE WITH RESERVE INPUT		120°+ / - 0.5°			
THD (LINEAR LOAD)		< 5 %			
OVERLOAD	<110%	CONTINUOUS			
	110 – 125%	15 min			
	125 – 150%	10 min			
	> 150%	60 sec			
EFFICIENCY(100% LOAD)		95%	95%	95%	95%
MAXIMUM OUTPUT PEAK CURRENT(A)		800	1000	1250	1300

### STATIC SWITCH

VOLTAGE RANGE		173 – 277 VAC (LINE TO NEUTRAL)			
FREQUENCY RANGE		45 – 55 Hz / 55 – 65 Hz			
EFFICIENCY		99.5%			
TRANSFER TIME:					
- MAINS -> INVERTER		0 ms			
- INVERTER -> MAINS		0 ms			
OVERLOAD	100%	30 sec			
	300%	1 sec			
ISOLATION WITH OUTPUT		YES			

<b>KVA</b>	<b>200</b>	<b>240</b>	<b>300</b>	<b>320</b>
<b>OVERALL CHARACTERISTICS</b>				
OVERALL EFFICIENCY	93%	93%	93%	93%
OPERATING ENVIRONMENT:				
- TEMPERATURE	0 - 40°C ( 32 - 104°F )			
- HUMIDITY	0% - 90% ( NON-CONDENSING )			
- ALTITUDE	<1500 M ABOVE SEA LEVEL			
MAXIMUM HEAT DISSIPATION(KW)	11.5	13	16.3	17.4
WEIGHT(Kg) (No Battery)	2500	2700	3000	3100
DIMENSION:				
- HEIGHT(mm)	1600			
- WIDTH(mm)	2200			
- DEPTH(mm)	800			
- AUDIBLE NOISE	< 67 dBA (AT 1 m)			
STANDARDS:				
-EN50091-1 , 2	YES			
-FCC CLASS A	YES			
PROTECTIONS:				
- SHORT CIRCUIT	RECTIFIER, RESERVE, BYPASS NFB			
- LIGHTNING	MOV			
- EMC FILTER	INPUT & OUTPUT			
- GALVANIC ISOLATION	BETWEEN INPUT & OUTPUT			
DATA DISPLAY BY LCD	YES			
INDICATIONS & ALARMS:				
- LED,LCD,BUZZER	YES			
DRY CONTACT	YES			
BATTERY START	YES			

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