

# +Power Modular UPS

SOLUTION



**• High efficiency online double conversion technology**

+Power is applied with online double conversion technology to reach its high performance over 94.5% at 50% load. It significantly reduces overall Total Cost of Ownership (TCO).

**• High scalability**

DSP control provides an improved solution with high performance. Integrated with modular design and parallel technology, +Power simplifies future power expansion.

**• Unity output power factor**

+Power delivers unity output power (kVA=kW) providing the maximum power capacity to mission critical loads. It satisfies the requirements of the latest servers and optimizes IT investment with every penny.

**• Modular design lowers MTTR**

Modular design is applied in power module, STS module and battery module. It will simplify maintenance and replacement with low MTTR (Mean Time To Repair).

**• N+1 or N+X parallel redundancy for power guarantee**

Scalable architecture allows you to optimize cost expense to meet power demands by vertically expanding in a single rack enclosure from 30KVA to 210KVA and achieve N+1 or N+X redundancy in the same rack. Supporting up to 420Kva system with 210Kva x2 in parallel operation

**• Ease of installation and maintenance**

Built-in maintenance bypass assures continuous power to critical loads during UPS maintenance. Besides, to facilitate installation and maintenance, all panel control and connectors are front accessibility.

**• Flexible battery configuration adapts different applications**

Battery numbers can be adjusted flexibly. It will adapt different power demands and shorten system downtime. Battery voltage can be set from 32 to 40 pieces per string.

**• Highly reliable operation with redundant power supply in STS**

+Power provides 2 power supplies in STS, ensuring no risk of shutdown.

**• User-adjustable charging current**

+Power provides maximum 8A or 6A charging current for every power module and it's user-adjustable based on requirement.

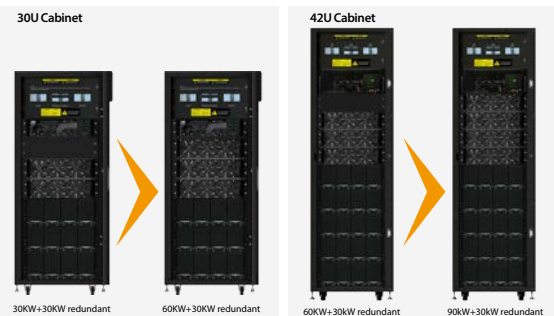
**• High overload capability**

+Power supports, 110% overload for 60 minutes, 125% for 10 minutes, and 150% for 1 minute.

**• Graphic 5.7" LCD design for easy management**

Designed for easy management, the intuitive design of 5.7" graphic LCD display enhances the the readability of identified and advanced configuration.


**• Optional 10" touch LCD panel**



### +Power 3P/3P 400V Modular UPS Selection Guide

MODEL	+Power 30U-90HV	+Power 42U-120HV	+Power 30U-120HV +Power 30U-90-20KHV	+Power 30U-180HV +Power 30U-120-20KHV	+Power 42U-200-20KHV	+Power 42U-210HV	+Power 42U-300HV
PHASE	3-phase in / 3-phase out						
CABINET CAPACITY*	90 KW	120 KW	120 KW or 80 KW	180 KW or 120 KW	200 KW	210 KW	300 KW
BATTERY TYPE	Built-in Battery		External Battery				
ONE POWER MODULE CAPACITY	30KVA / 30KW		30KVA / 30KW or 20KVA / 20KW		20KW	30KVA / 30KW	30KVA / 30KW
MAX. POWER MODULE NO.	3	4	4	6	10	8	10
MAX. BATTERY SET NO.**	3	5	-	-	-	-	-
<b>INPUT</b>							
Nominal Voltage	3 x 380VAC/400VAC/415VAC (3Ph+N)						
Voltage Range	305 ~ 478 VAC at 100% load; 208 ~ 304VAC at <70% load						
Nominal Frequency	50/60Hz (Auto Sensing)						
Frequency Range	40Hz ~70Hz						
Power Factor	> 0.99 @ 100% Load , >0.98 @ 50% Load						
Harmonic Distortion (THDi)	< 3% @ 100% load						
<b>OUTPUT</b>							
Nominal Voltage	3 x 380VAC/400VAC/415VAC (3Ph+N)						
Voltage Regulation(Steady state)	≤ ± 1% Typical (balanced load) ; ≤ ± 2% Typical (imbalanced load)						
Nominal Frequency	50/60Hz						
Frequency Range(Synchronized)	46Hz ~ 54Hz or 56Hz ~ 64Hz						
Overload Capability	1 hour for 110%, 10 mins for 125%, 1 min for 150%, 200ms for >150%						
Harmonic Distortion	≤ 2% THD (Linear Load) ; ≤ 4% THD (Non-linear Load)						
Efficiency	Up to 94.5%						
<b>BATTERY / CHARGER</b>							
Nominal Voltage	+/- 216V (12V x 36 pcs)						
Maximum Voltage	+/- 240V (12V x 40 pcs)						
Minimum Voltage	+/- 192V (12V x 32 pcs)						
Float Charging Voltage	2.25V / Cell						
Boost Charging Voltage	2.35V / Cell						
Temperature Compensation	Yes						
Maximum Charging Current (Per Power Module)	8A	8A for 30KW power module 6A for 20KW power module		6A	8A		
<b>PHYSICAL</b>							
Cabinet Dimension (D x W x H) mm	1100 x 600 x 1475	1100 x 600 x 2010	1100 x 600 x 1475	1100 x 600 x 1475	1100 x 600 x 2010		
Net Weight (Kg)	675	932	335 or 333	437.5 or 434.5	611	549	620
<b>ENVIRONMENT</b>							
Operating Temperature	0 ~ 40°C						
Relative Humidity	0 ~ 95% non-condensing						
Altitude	<1000m for Nominal power						
IP Class	IP 20						
<b>MANAGEMENT</b>							
Smart RS-232 / USB	Supports Windows* 2000/2003/XP/Vista/2008, Windows* 7/8/10, Linux and MAC						
Optional SNMP	Power management from SNMP manager and web browser						
<b>STANDARDS</b>							
Safety	IEC/EN 60950-1; IEC/EN 62040-1						
EMC	IEC/EN 62040-2 Category C3						

\*When temperature is above 30°C , the output power factor will be de-rated, 0.9 at 31°C ~35°C and 0.8 at 36°C ~40°C.  
 \*\* One battery module contains 10 pcs of 12V/7Ah or 12/9Ah sealed lead acid batteries in one tray. One complete battery set contains 4 battery modules.  
 \*\*\*If the UPS is installed or used in a place where the altitude is above than 1000m, the output power must be derated one percent per 100m.  
 Product specifications are subject to change without further notice.



Model	Description	Dimension DxWxH(mm)	Weight (kg)
PM-20HV	3P/3P 20KVA / 20KW power module	650 x 440 x 132(3U)	34
PM-30HV	3P/3P 30KVA / 30KW power module	650 x 440 x 132(3U)	34.5
Battery Module	10 pcs of 12V 9Ah batteries	735 x 107 x 155	26

## +Power 3P/3P 208V Modular UPS Selection Guide

MODEL	+Power 30U-60LV	+Power 42U-80LV	+Power 30U-80LV	+Power 30U-120LV	+Power 42U-140LV
PHASE	3-phase in / 3-phase out				
CABINET CAPACITY*	54 KW	72 KW	72 KW	108 KW	126 KW
BATTERY TYPE	Built-in Battery		External Battery		
ONE POWER MODULE CAPACITY	20KVA/18KW				
MAX. POWER MODULE NO.	3	4	4	6	7+1
MAX. BATTERY SET NO.**	3	4	-	-	-
<b>INPUT</b>					
Nominal Voltage	3 x 208 VAC (3Ph+N)				
Voltage Range	156 ~ 253 VAC at 100% load; 121 ~ 155VAC at <70% load				
Nominal Frequency	50/60Hz (Auto sensing)				
Frequency Range	40Hz ~70Hz				
Power Factor	> 0.99 at 100% load, >0.98 at 50% load				
Harmonic Distortion (THDi)	< 3% @ 100% load				
<b>OUTPUT</b>					
Nominal Voltage	3 x 208V/220VAC (3Ph+N)				
Voltage Regulation (Steady state)	≤ ± 1% Typical (balanced load) ; ≤ ± 2% Typical (imbalanced load)				
Voltage Regulation (Transient)	≤ ± 5% Typical				
Nominal Frequency	50/60Hz				
Frequency Range (Synchronized)	46Hz ~ 54Hz or 56Hz ~ 64Hz				
Overload Capability	1 hour for 110%, 10 mins for 125%, 1 min for 150%, 200ms for >150%				
Harmonic Distortion	≤ 1.5% THD (Linear Load) ; ≤ 4% THD (Non-linear Load)				
Efficiency	Up to 92.5% at over 50% load				
<b>BATTERY / CHARGER</b>					
Nominal Voltage	+/- 120V (12V x 20 pcs)				
Float Charging Voltage	2.25V / Cell				
Boost Charging Voltage	2.35V / Cell				
Temperature Compensation	Yes				
Maximum Charging Current	8A for each power module (User-adjustable)				
<b>PHYSICAL</b>					
Cabinet Dimension (D x W x H) mm	1100 x 600 x 1475 [30U]	1100 x 600 x 2010 [42U]	1100 x 600 x 1475 [30U]	1100 x 600 x 1475 [30U]	1100 x 600 x 2010 [42U]
Net Weight (kg)	675	828	335	437.5	7 Power Modules: 514.5 8 Power Modules: 549
<b>ENVIRONMENT</b>					
Operating Temperature	0 ~ 40°C				
Relative Humidity	0 ~ 95% non-condensing				
Altitude	<1000m for Nominal power				
IP Class	IP 20				
<b>MANAGEMENT</b>					
Smart RS-232 / USB	Supports Windows® 2000/2003/XP/Vista/2008, Windows® 7/8/10, Linux and MAC				
Optional SNMP	Power management from SNMP manager and web browser				
<b>STANDARDS</b>					
Safety	UL1778, CSA C22.2 No. 107.3-05				
EMC	FCC Part 15, Subpart B Class A				

\*When temperature is above 30°C , the output power factor will be de-rated, 0.8 at 31°C ~35°C and 0.7 at 36°C ~40°C .

\*\* One battery module contains 10 pcs of 12V/7Ah or 12/9Ah sealed lead acid batteries in one tray. One complete battery set contains 4 battery modules.

\*\*\*If the UPS is installed or used in a place where the altitude is above than 1000m, the output power must be derated one percent per 100m.

Product specifications are subject to change without further notice.



Model	Description	Dimension DxWxH(mm)	Weight (kg)
PM-20LV	3P/3P 20KVA / 18KW power module	650 x 440 x 132(3U)	34.5
Battery Module	10 pcs of 12V 9Ah batteries	735 x 107 x 155	26

# Rack Configuration



+Power 400V 30K Cabinet						
Rack Model Name	30U-90HV	30U-120HV	30U-180HV	42U-120HV	42U-210HV	42U-300HV
Height	30U	30U	30U	42U	42U	42U
STS Capacity	90K	120K	210K	120K	210K	300K
Type of installable power module	HV 30K or HV 20K	HV 30K or HV 20K	HV 30K or HV 20K	HV 30K or HV 20K	HV 30K or HV 20K	HV 30K or HV 20K
Max. number of installable power module	3	4	6	4	8	10
Number of installable battery modules in Layer	3	N/A	N/A	5	N/A	N/A
Max. capacity of installing HV 20K module	60K	80K	120K	80K	160K	200K
Max. capacity of installing HV 30K module	90K	120K	180K	120K	210K (If installed with 8 pcs, one is for redundancy)	300K
Max capacity w/internal battery, no external battery	60K (Maximum with 3 layers of battery modules)	N/A	N/A	90K (Maximum with 5 layers of battery modules)	N/A	N/A
Built-in empty battery modules in BOM	Yes, 12pcs	No	No	Yes, 20pcs	No	No



+Power 208V 20K Cabinet					
Rack Model Name	30U-60LV	30U-80LV	30U-120LV	42U-80LV	42U-140LV
Height	30U	30U	30U	42U	42U
STS Capacity	LV 60KVA	LV 80KVA	LV 140KVA	LV 80KVA	LV 140KVA
Type of installable power module	LV 20K only	LV 20K only	LV 20K only	LV 20K only	LV 20K only
Max. number of installable power module	3	4	6	4	8
Number of installable battery modules in layer	3	N/A	N/A	4	N/A
Max. capacity of installing LV 20K module	60KVA	80KVA	120KVA	80KVA	140KVA (If installed with 8 pcs, one is for redundancy.)
Max capacity w/internal battery, no external battery	60K	N/A	N/A	80K	N/A
Built-in empty battery modules in BOM	Yes, 12pcs	No	No	Yes, 16pcs	No

+Power 400V 20K Cabinet			
Rack Model Name	30U-80-20KHV	30U-120-20KHV	42U-200-20KHV
Height	30U	30U	42U
STS Capacity	90K	120K	210K
Type of installable power module	HV 20K only	HV 20K only	HV 20K only
Max. number of installable power module	4	6	10
Number of installable battery modules in layer	N/A	N/A	N/A
Max. capacity of installing HV 20K module	80K	120K	200K
Max. capacity of installing HV 30K module	N/A	N/A	N/A
Max capacity w/ internal battery, no external battery	N/A	N/A	N/A



+Power E 208V Cabinet		
Rack Model Name	E-60LV	E-60LV-L
Height	15U	~30U
STS Capacity	LV 60K	LV 60K
Type of installable power module	LV 20K only	LV 20K only
Max. number of power module	3	3
Number of installable battery module in layer	N/A	3
Max. capacity of installing LV 20K module	60KVA	60K
Max capacity w/ internal battery	N/A	60
Built-in empty battery modules in BOM	No	The battery module of +Power E is easy-replaceable without hot-swappable design
Note	+Power E (15U) without battery module is available. +Power E (30U) with battery module is available.	

+Power E 400V Cabinet				
Rack Model Name	E-90HV	E-60-20KHV	E-90HV-L	E-60-20KHV-L
Height	15U	15U	~30U	~30U
STS Capacity	90K	60K	90K	60K
Type of installable power module	HV 30K or HV 20K	HV 20K only	HV 30K or HV 20K	HV 20K only
Max. number of installable power module	3	3	3	3
Number of installable battery module in layer	N/A	N/A	3	3
Max. capacity of installing HV 20K module	60K	60K	60K	60K
Max. capacity of installing HV 30K module	90K	N/A	90K	N/A
Max capacity w/internal battery, no external battery	N/A	N/A	60K	60K
Built-in empty battery modules in BOM	No	No	The battery module of +Power E is easy-replaceable without hot-swappable design	
Note	+Power E (15U) without battery module is available. +Power E (30U) with battery module is available.			