36TH Year
1987 - 2023

PRODUCT CATALOGUE 2023

Index

Company Profile

EPI is an uninterruptible power supply (UPS) manufacturer with factories in Italy, that manufactures Static Transfer Switches (STS) and Batteries as well. Over the last 34 years, it has evolved from a home grown manufacturer in Italy to a worldwide company with offices in 20 countries across Europe, Asia Pacific, South Asia, Middle East and the South America.

To ensure a superior quality standard of your EPI UPS, we partnered with some of the world's leading manufacturers of Electrical and Electronic products, who produce for the world's premium brands such as IBM, Dell, Apple and etc. Our team of experienced software and hardware engineers have spent many sleepless nights over the years in research and development to come up with the features and functionalities that leads the industry.

We offer a comprehensive range of services, including :

- UPS research and design
- Installation Services
- Preventive Maintenance
- On Site Service
- Extended Warranty
- Remote Monitoring

EPI-UPS SYSTEMS is a global provider of power quality solutions designed to increase the availability and uptime of mission-critical applications or processes – from a simple desktop PC to a large Internet Data Center or industrial manufacturing plant.

The wide range of products (up to 1,000kVA) with single or parallel configurations (up to 6MVA) can satisfy most of the different requests. To ensure our prompt delivery, we have just set up another assembly plant in Istanbul in addition to our existing Shenzhen assembly factory. Qualified technicians can provide all the technical support before and after sales, necessary to be competitive in a high-tech market. Using advanced systems, we guarantee the conformity of our products to meet even the most restrictive European standards.

“Leading provider of customer-focused power solution for the global marketplace”

Pace-setting technologies, highly reliable UPS system and services experts uniquely position – EPI aims to deliver comprehensive solutions that open up infinite possibilities for its customers’ success .

Our depth enables us to confidently deliver solutions that extend beyond expectations. Offering flexible and cost effective solutions through the utilization of latest technology available for UPS system. We have gained recognition from our global customers for consistently delivering power solutions of high quality and reliability. With a dedicated & motivated workforce, unified by a desire to make the customers’ success, their success, delivery lead-times are continuously managed and improved to enable rapid customer satisfaction; EPI today continues to strive and innovate to provide ever higher levels of service and quality for customers, to be their choice leading edge advanced UPS system. Maintain good relations with customers and aiming for the best customer service by satisfying specifically what the customer requires and expects.

The EPI strength is built on a sound long-term relationship with several of the most significant global vendors in the power industry. A professional approach in conducting business has enabled EPI to form mutually valuable relationships with its partners.

Lite Series

500 – 3000 VA
Line Interactive

2000 – 3000 VA

500 – 1500 VA

Product

The Lite Series includes models of 500-600-800-1000-1200VA-1500 VA. Designed to protect your power for personal computers, it provides comprehensive protection in a small and economic package. It is not only offers greater comprehensive power protection against surges and spike, but also provide pure voltage with built in Automatic Voltage Regulator. The UPS will continue providing clean and sable power to the connected equipment while embedded microprocessor controller guarantees high reliability, perfect for any home or small office application.

The Lite series uses Line Interactive with high efficiency and high reliability.

When the load is supplied from the mains, the automatic voltage regulator (AVR) and EMI filters stabilizes power and suppress atmospheric disturbances. When the mains fails, the load is powered from a pseudo-sine wave inverter, to provide sufficient runtime for computer system shutdown

Application

- Personal computer
- TV/FAN/Microwave oven/Washing machine
- Air conditioner
- Refrigerator/Freezer
- POS terminals
- Security system
- Servers and workstations
- Fax machine

Features

- Advanced AVR for voltage stabilization
- CPU controlled
- Auto re-start when AC recovers
- Silence setup
- Automatic charging (offline charging)
- Battery low voltage protection
- Overload & short circuit protection
- Wide input voltage range
- Offering LED and LCD panels for selection
- Optional USB/RS232/RJ45 communication port

Model	Lite500	Lite600	Lite800	Lite1000	Lite1200	Lite1500	Lite2000	Lite2000	Lite3000
Capacity	500VA/ 300W	600VA/ 360W	800VA/ 480W	1000VA/ 600W	1200VA/ 720W	1500VA/ 900W	2000VA/ 1200W	2000VA/ 1200W	3000VA/ 1800W
Input									
Input Voltage	110/120Vac or 220/230/240Vac								
Input Voltage Range	85-150Vac or 145-290Vac				84-145Vac or 145-290Vac		84-145Vac or 175-275Vac		
Frequency Range	45-65Hz								
Output									
Output Voltage	110/120Vac or 220/230/240Vac								
Output Voltage Range	102-132Vac or 200-255Vac						102-132Vac or 198-242Vac		
Output Frequency	60±0.5Hz or 50±0.5Hz (Battery mode)								
Output wave Form	PWM (Battery mode)								
Transfer Time	Typical 2-6ms, 10ms max.								
Battery									
Q'ty & Capacity of Battery	12V/ 4.5Ahx1pcs	12V/ 7Ahx1pcs	12V/ 9Ahx1pcs	12V/ 7Ahx2pcs	12V/ 7Ahx2pcs	12V/ 7Ahx2pcs	12V/ 9Ahx2pcs	12V/ 7Ahx4pcs	12V/ 9Ahx4pcs
Charging Period	4-6 hours recover to 90% capacity								
Protection									
Full Protection	Low voltage & overload & short circuit protection								
Indicator									
LCD or LED	Optional								
Interface									
USB/RJ45 or None	Optional, support can support Windows, Linux, Unix and MAC								
Environment									
Operation Temperature	0-40°C								
Humidity	20-90% (Non-condensing)								
Noise Level	≤40dB (1m away)								
Altitude	The altitude should not exceed 1000m,and the height above 1000m should be reduced to a maximum of 4000m.Refer to IEC62040								
Physical									
Net Weight (kg)	3.6	4.3	4.7	8.5	9.5	11.5	14.7	17.8	20
Unit Dimension (mm)	255x98x140	300x95x140		330x122x192			345x122x192	412x145x210	

MTN-Plus Series

1kVA ~ 3kVA
Single-phase in/Single-phase out
Double Conversion Online (VFI)

Product

MTN-Plus Series is a range of ON-LINE double conversion technology UPS with 0.9 (1/1) output power factor and "zero" transfer time. The load is always powered by the inverter, which supplies true sinusoidal voltage that is free from electrical interference.

HIGH RELIABILITY
MTN Plus Series offers high quality power supply with the greatest degree of availability and reliability.

MTN Plus Series is compact and very convenient for users, especially for basic equipment such as PC, Workstation, Network centers, Communication equipments, and other critical systems.

EXTENDED BACK UP TIME
Battery expansion is possible to increase the back-up time of the UPS. For longer back-up time, it is available MTN Plus "L" version without internal battery but with powerful battery charger.

PROTECTIONS OF TELEPHONE LINE
MTN Plus series comes with a RJ45/RJ11 socket to guarantee the protection of its telephone or network lines against any voltage surges.

AUTOMATIC RESTART
The UPS is programmed to restart automatically when the mains returns after switching off due to end of back-up time following prolonged power failure.

COMMUNICATION
MTN-Plus series comes with an expansion slot for optional communication board which makes it compatible with the main communication option – SNMP and dry contact dry.

Features

- True online double conversion technology
- 3-level inverter
- IGBT PFC technology
- Wide input voltage range
- Cold start function
- Zero transfer time
- Smart communication port
- LCD/LED display
- Overload and short-circuit protection
- Optional intelligent slot for SNMP adaptor

Module Model	MTN-Plus 1101-05S	MTN-Plus 1101-00L	MTN-Plus 1102-05S	MTN-Plus 1102-00L	MTN-Plus 1103-05S	MTN-Plus 1103-00L
Capacity	1000VA		2000VA		3000VA	
Real Power Rating (W)	900W		1800W		2700W	
Input						
Phase	Single phase + ground Rated					
Voltage (V)	220/230/240VAC					
Voltage Range	115VAC ~ 300VAC					
Max Current (A)	6 (max)		12 (max)		16 (max)	
Frequency	50/60Hz, ±10%					
Power Factor	≥0.95 (According to EN60555-2)					
Bypass Voltage Range	80VAC~286VAC, ±5VAC					
Output						
Phase	Single phase + ground					
Waveform	True Sine Wave					
Voltage	220/230/240VAC, ±1%					
Frequency	50/60Hz (selectable)					
Power Factor	0.9					
Frequency (Utility Mode)	Output frequency synchronizes with input frequency when input frequency is in the range of 46Hz~54Hz					
Frequency (Battery Mode)	Output frequency is 50Hz when input frequency is not in the range of 46Hz~54Hz					
Transfer Time	Utility-Battery = 0ms Utility-Bypass < 4ms					
Voltage Precision	±2%					
Crest Factor	3 : 1					
THD	<3% (linear load)					
Overload Capacity (Utility Mode)	Transfer to Bypass 105%<load≤125%, ±5%, 50s 125%<loads≤150, ±5%, 25s Load>150±5%, 300ms					
Battery						
Type	Maintenance-free lead-acid					
Voltage	36VDC		72VDC		96VDC	
Back Up Time	Standard : 100% load ≥5mins Long Time Unit depends on capacity of external batteries					
Charge Current (A)	1	7	1	7	1	7
Communication						
Communication Interface	9 pin D type connector (RS232)					
Environment						
Operating Temperature	0°C – 40°C					
Humidity	0-95% (non-condensing)					
Storage Temperature -	25°C – 45°C Altitude >1000m					
Mechanical						
Dimension (W*D*H) (mm)	350*144*236		425*190*336		425*190*336	
Weight (kg)	12.0	5.7	22.2	10.0	26.3	10.0
Standard						
Industry Standards	IEC 61000-4-2 to 5, GB4943-2001, IEC 62040-1, YT/D 1095-2000					

MTN-Plus Series

6kVA~10kVA (1/1)
10kVA ~ 20kVA (3/1)
3-Level Inverter Technology

Product

MTN Plus Online Series is an uninterruptible power supply incorporating double conversion technology. It provides perfect protection specifically for strict load. The double conversion principle eliminates all mains power disturbances. A rectifier converts the alternating current from the socket outlet to direct current. This direct current charges the batteries and powers the inverter. In the event of power failure, the maintenance-free batteries power the inverter. Thus the inverter generates a sine wave AC power, which permanently supplies the loads.

Designed with the proven online double conversion architecture, this series of UPS offers the greatest degree pf availability in power protecting and provides continuous high quality AC power to connect strict load, especially for the basic equipment in some areas as : finance, communication, government, traffic, manufacture and education sectors.

HIGH RELIABILITY
MTN Plus Series offers high quality power supply with the greatest degree of availability and reliability.

EXTENDED BACK UP TIME
Battery expansion is possible to increase the back-up time of the UPS. For longer back-up time, it is available with the MTN Plus “L” version without internal battery but with powerful battery charger.

COMMUNICATION
MTN Plus series comes with an expansion slot for optional communication board which makes it compatible with the main communication option : SNMP and dry contact card.

Features

- Faster response, more reliable protection by adopting current-limiting hardware circuit on rectifier and inverter sections
- 3-level inverter, support any kinds of load in the power range: Air conditioner / Laser printer / fans / 6-pulse load
- Greatly reduces the voltage stress of input PFC switching components, increases the overall working efficiency by adopting PFC soft switching circuit technology
- Electric stress on switching the UPS on/off is reduced by 50%, inverter working efficiency increases significantly, supports all kinds of load by adopting 3-level inverter technology
- Overall efficiency is increased greatly, less power consumption of small load, effective efficiency reaches over 93% on full load
- With mobile network monitoring function developed, end user can monitor and supervise UPS functioning and running with mobile device anytime, anywhere
- Stable output voltage wave form, more accurate output range of 220V, ±1%

Model	MTN Plus 1106-05S	MTN Plus 1106-00L	MTN Plus 1110-05S	MTN Plus 1110-00L	MTN Plus 3110-05S	MTN Plus 3110-00L	MTN Plus 3115-05S	MTN Plus 3115-00L	MTN Plus 3120-05S	MTN Plus 3120-00L
Capacity	6kVA		10kVA		10kVA		15kVA		20kVA	
Real Power Rating	5.4kW		9kW		8kW		12kW		16kW	
Input										
Phase	Single phase+ ground				Three phase + neutral + ground					
Rated Voltage (V)	220/230/240VAC				220/230/240VAC,380/400/415VAC					
Voltage Range	(120± 5 ~ 274± 5) VAC				273VAC~ 478 VAC (line to line)					
Max Current (A)	25(max)		27 (max)		45 (max)		68 (max)		91 (max)	
Frequency	50/60Hz, ±10%									
Power Factor	≥0.99 @full load				≥0.95 @full load					
Output										
Phase	Single phase+ ground									
Waveform	True Sine wave									
Voltage	200/208/220/230/240VAC									
Frequency	50/60Hz (selectable)									
Power Factor	0.9				0.8					
Crest Factor	3 : 1									
THD	<2% (linear load)									
Battery										
Type	Maintenance-free lead-acid									
Voltage (DC)	240VDC									
Communication										
Communication	Interface 9 pin D type connector (RS232), intelligent slot for SNMP adaptor(optional)									
Environment										
Operating Temperature	0°C- 40°C									
Humidity	20-95%(non-condensing)									
Storage Temperature	-25°C – 45°C									
Noise (1meter away)	≤ 50dB		≤ 55dB		≤ 65dB					
Mechanical										
Dimension (W*D*H) (mm)	533*260 *560	425*190 *328	533*260 *560	533*260 *501	533*260 *501	560*260 *717	533*260* 501	560*260 *717	533*260* 501	560*260 *717
Weight (kg)	55.0	12.5	62.0	21.0	23.0	32.0	33.0	65.0	75.0	76.0
Standard										
Industry Standards	IEC61000-4-2 to 5, GB4943-2001, IEC62040-1, YT/D 1095-2000									

MTP Series

1-10kVA
Single-phase in/Single-phase out
Double Conversion Online (VFI)

MADE IN UK

Product

MTP Series is a range of ON-LINE double Conversion technology UPS with 1.0 output power factor and “zero” transfer time, the load is always powered by the inverter, which supplies true sinusoidal voltage that is free from electrical interference.

High Reliability

MTP Series offers high quality power supply with the greatest degree of availability and reliability

MTP Series is compact and very convenient for users, especially for basic equipment such as PC, Workstation, Network centers, Communication equipments, and other critical systems.

Extended Back Up Time

Battery expansion is possible to increase the back-up time of the UPS. For longer back-up time, it is available MTP “L” version without internal battery but with powerful battery charger

Automatic Restart

The UPS is programmed to restart automatically when the mains returns after switching off due to end of back-up time following prolonged power failure.

Communications

MTP Series comes with an expansion slot for optional communication board which make it compatible with the main communication option: SNMP and Dry contact card

DSP Technology

The advance DSP digital control technology enable UPS more stable performance.

Active Input Power Factor Correction (PFC)

Digitalized control of the PFC enable the UPS to keep input power factor above 0.99 to prevent possible electric grid pollution and meanwhile mostly save the cost.

Zero Power Switch Delay

When the utility power fails, UPS will automatically switch from AC mode to battery mode with no delay, which ensures stable power supply of operating system.

Environment Friendly

This UPS is eco-designed and manufactured to meet the most local pollution control requirement of Electronic Products, which mean it will cause no harm to environment and human beings in normal usage.

Wide Range of Input Voltage and Frequency

We intentionally widen the range of input factors to make sure the UPS can apply to various environment, which will effectively sustain the battery charging even in unstable power environment so that the service life of the UPS could be obviously prolonged.

Features

- True double-conversion
- Microprocessor control optimized reliability
- Input power factor correction
- Output power factor 1.0
- Wide input voltage(110V~300)
- Converter mode available
- Generator compatible
- Smart SNMP works well either USB or RS-232

Model	MTP 1101S	MTP 1101L	MTP 1102S	MTP 1102L	MTP 1103S	MTP 1103L	MTP 1106S	MTP 1106L	MTP 1110S	MTP 1110L
Rated Capacity	1kVA/1kW		2kVA/2kW		3kVA/3kW		6kVA/6kW		10kVA/10kW	
Input										
Input Formats	L + N + PE									
Nominal Voltage	208/220/230/240VAC									
Input Voltage Range	110-300VAC									
Frequency Range	44-56Hz or 54-66Hz									
Power Factor	≥0.99									
Harmonic Distortion	≤3% THD (Linear Load); ≤5% THD (Non-Linear Load)									
Output										
Output Formats	L + N + PE									
Output Voltage	208/220/230/240VAC									
Voltage regulation	1%									
Frequency Range	Line Mode: Synchronized range, Battery Mode: 50/60 Hz ±1%									
Harmonic Distortion	≤2% THD (Linear Load); ≤5% THD (Non-Linear Load)						≤2% THD (Linear Load); ≤4% THD (Non-Linear Load)			
Power Factor	1.0									
Transfer Time	0									
Overload Capacity	AC Mode: 30min@102%~110% Load 10min@110%~130% Load 30s@130%~150% Load 200ms@>150% Load		attery Mode: 1min@102%~110% Load 10s@110%~130% Load 3s@130%~150% Load 200ms@>150% Load				AC Mode: 30min @102%-105% Load 10min @105%-125% Load 30s @125%-150% Load 500ms @>150% Load		Battery Mode: 10min@102%-105% Load 1min@105%-125% Load 10s@125%-150% Load 500ms@>150% Load	
Efficiency	93%		94%				95.50%			
Battery										
Quantity	7Ah x2(3)		7Ah x 4(6)		7Ah x 6(8)		7Ah x 16 (20)			
Typical Recharge Time	Depending on user needs									
Charging Current	1A to 4A (default 1A)		1A to 12A(default 1A)							
Environment										
Ambient Temperature	0-40°C									
Humidity	20%-95% (No condensing)									
Storage Temperature	-15~60°C (Battery: 0-40°C)									
Altitude	The altitude should not exceed 1,000m, and the height above 1,000m should be reduced toa maximum of 4,000m. Refer to IEC62040									
Indicator										
LCD	Load level, Battery level, AC mode, Battery mode, By-pass mode,									
Physical										
Dimension (mm)	350x145x230		410x190x325				500x240x616	500x240x460	500x248x616	500x240x460
Weight (kg)	18.6	9.0	19	10	25	11	57	18	67.5	20
Management										
Interface	RS232, Intelegent Slot									

MTN-eLite Series

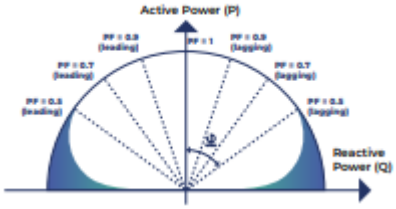
Single-Phase In/ Single-Phase Out UPS from 6 - 30 kVA

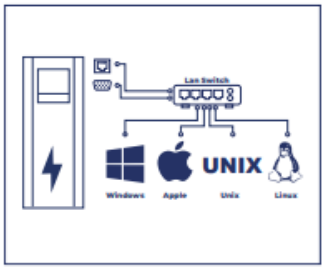
3 LEVEL UPS | VFI TYPE UPS ONLINE | TOWER | 96% HIGH EFFICIENCY | LI - ION READY

Product

MTN-Elite UPS is designed and built using state-of-the-art technology and components to provide maximum protection to the powered loads with no impact on downstream systems and optimised energy savings. The series includes 6-20 kVA single/single phase models with on-line double conversion technology (VFI) with latest three level technology. The load is powered continuously by the inverter which supplies a sinusoidal voltage, filtered and stabilised in terms of form and frequency. Input and output filters provide significant further immunity from mains disturbances and lightning strikes.

In terms of technology and performance, MTN-Elite is one of the best UPS available on the market today: three level inventer to achieve 95% efficiency af half load, output power factor 1 to increase in efficiency of system and devices and reduce power system losses.

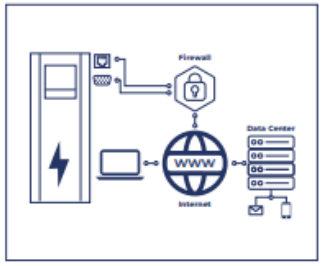




Features

Three level Technology, Compact and Robust, MTN-elite monoline is the perfect UPS to protect and supply loads in the industrial fields and critical applications.

- Three Level Technology
- On Line-Double Conversion Technology (Class VFI-SS-111)
- IGBT PWM Rectifer & Inverter Technology
- High Efficiency up to 95,5%
- Higher efficiency with eco mode up to 98%
- High Input Power Factor (>0.99)
- Low Input THD (≤%5)
- Increase battery life time up to 35% with smart charger
- Temperature compensation battery charging
- Higher fan file time with Intelligent fan speed control
- Operate as frequency converter (50 Hz / 60 Hz)
- Short Circuit, Overload, Lightning and Surge Protection
- Perfect Generator Compability
- Easy Service with Manual bypass
- Variable input low voltage depending on loading percentage (up to -40%)
- Parallelable with Common or Separate Battery Cabinet
- Realtime warnings at LCD screen



Model	MTN-e1106	MTN-e1110	MTN-e1115	MTN-e1120	MTN-e1130
Nominal power (kVA)	6	10	15	20	30
General Specs					
Technology	Three Level On-Line double conversation VFI-111				
Waveform	Sinusoidal				
Architecture	Stand Alone or Optional Parallel				
Input					
Input voltage	220, 230, 240 V 1PH+N+PE	220, 230, 240 V 1PH+N+PE / 380, 400, 415 V 1PH+N+PE			
Input frequency	45-65 Hz				
Voltage Tolerance	(%100 load) (-20)% (+20)%				
Voltage Tolerance	(%50 load) (-40)% (+20)%				
Input Power Factor	>0.99				
Input Current Harmonic	≤5%				
Output					
Output voltage	220,230,240 V 1 Ph+ N+PE (Adjustable from front panel)				
Output Voltage Tolerance	+1%				
Overall Efficiency (AC-AC)	Up to 95.5 % (At half load)				
Ecomode Efficiency	Up to 98.5%				
Nominal Output Frequency	50/60Hz +0.01 free run (Adjustable from LCD Panel)				
Crest Factor	3:1				
Output Power Factor	1.0				
THD of Output Voltage	<2% (at full linear load)				
Bypass					
Overload Capability	150% for 1 minutes				
Bypass	Built in Automatic and Maintenance Bypass				
Voltage Tolerance	±10%				
Battery					
Battery Type	VRLA-AGM / GEL / NiCd / Li-ion				
Battery Test	Automatic or Manual				
Battery Recharge Time	<6h-8h				
Charger Capacity					
Standard Model (max)	1A		4A		
with Charger Option	4A / 13A				
Battery Quantity					
with Internal Battery (12V 7/9Ah)	20 pcs		28 pcs		60 pcs
External Cabinet with 4A Charger Option	20-40 pcs (Default 30 pcs)	30-40 pcs (Default 30 pcs)			
External Cabinet with 13A Charger Option	30-46 pcs (Default 30 pcs)				
Communication and Accessories					
LCD Display	Graphical lcd screen, Led bar status				
Communication ports (Optional)	RS485, Genset, SNMP, GSM Modem, Relay Contacts, Input Contacts, Modbus and USB				
Accessories (Optional)	Galvanic Isolation Transformer, Remote Monitoring Panel				
Physical Characteristics					
Dimensions H x W x D (mm)	635X256X580	735X256X673			990X300X850
Net Weight (kg)	30	38	40	50	70
Ambient Conditions					
Operating temperature	(°C) 0°C – 40°C				
Storage temperature	-15°C+ 55°C				
Relative Humidity (%)	< 95% not condensing				
Noise (at 1 meter)	< 55 dBA				
Protection Class	IP 20				
Compliance					
Referance Product	Standards EN 62040-1-1 (Safety), EN 62040-2 (EMC), EN 62040-3 (Performance)				

STC SERIES

3-5 kW 48Vdc
Double Conversion Online (VFI)

Product

This is a multi-function UPS, combining functions of inverter and battery charger to offer uninterruptible power support with portable size. Its comprehensive LCD display offers user-configurable and easy-accessible button operation such as battery charging current, AC charger priority and acceptable input voltage based on different applications.

STC comes in nominal power rating of 3,000VA and 5,000VA. It is designed to provide conditioned power to microcomputers and other sensitive electronic equipment. When it is generated, alternating current is clean and stable. However, during transmission and distribution it may be subject to voltage sags, spikes and complete power failure that may interrupt computer operations, cause data loss and even damage equipment. The UPS protects equipment from these disturbances. The UPS is a compact, on-line UPS. An on-line UPS continuously conditions and regulates its output voltage, whether utility power is present or not. It supplies connected equipment with clean sine-wave power. Sensitive electronic equipment operates best from sine-wave power. For ease of use, the UPS features a LCD display to indicate all information for UPS, and provide kinds of function buttons.

Automatic Restart

The UPS is programmed to restart automatically when the mains returns after switching off due to end of back-up time following prolonged power failure.

Communication

STC Series comes with an expansion slot for optional communication board which make it compatible with the main communication option: SNMP and AS40

Features

- True double-conversion
- Pure Sine-wave output
- Output Power Factor 1.0
- Configurable charging current via LCD setting
- Compatible with Generator
- Cold Start capability
- Overload and short circuit protection
- Very powerful AC charger at 60A
- Optional parallel operation up to 9 units for Single Phase and Three Phase application
- Common 48Vdc battery pack for the parallel system
- Full Bridge inverter design to support half-wave load and unbalance load

Model		STC 1103-00L	STC 1105-00L
Capacity		3000VA/3000W	5000VA/5000W
Input			
Voltage		220/230/240 VAC	
Voltage Range		110-280 VAC @ 50% load ; 176-280 VAC @ 100% load	
Frequency Range		46~54 Hz or 56~64 Hz	
Power Factor		≧ 0.98 @ Nominal Voltage (100% Load)	
THDi		≤ 8%	
Output			
Output Voltage		220/230/240 VAC	
AC Voltage Regulation (Batt. Mode)		± 1%	
Frequency Range (Synchronized Range)		46~54 Hz or 56~64 Hz	
Frequency Range (Batt. Mode)		50 Hz ± 0.1 Hz or 60Hz ± 0.1 Hz	
Current Crest Ratio		3:1	
Harmonic Distortion		≦ 3% THD (Linear Load, ≦ 5 % THD (Non-linear Load)	
Transfer Time	AC Mode to Batt. Mode	Zero	
	Inverter to Bypass	4 ms (Typical)	
Waveform		Pure Sinewave	
Efficiency			
Line Mode		93%	
ECO Mode		99.50%	
Battery Mode		91%	
Battery			
Battery Voltage		48 VDC	
Floating Charge Voltage		54.6 VDC	
Overcharge Protection		66 VDC	
Charging Current (Max)		60 A	
Indicators			
LCD Panel		Load level, Battery level, AC mode, Battery mode, Bypass mode, and Fault indicator Via LCD	
Physical			
Dimension, D x W x H(mm)		450 x 190 x 336	
Net Weight (kgs)		15	15.5
Communication Interface		RS232 & USB	
Operating Environment			
Humidity		0 to 95% Relative Humidity(Non-condensing)	
Operating Temperature		0°C to 50°C	
Storage Temperature		-15°C to 60°C	

MSN-Pro Series

10kVA ~ 20kVA (220V/230V/240V)
3-phase in/Single-phase out
Double Conversion Online (VFI)

Product

MSN-Pro series, ranging from 10KVA to 20KVA, is double conversion online UPS with fully DSP controlled technology. This MSN-Pro series UPS applies the advanced 3-level technology, achieving efficiency up to 95%. With its compact design of high power density (kW=kVA), MSN-Pro series make it ideal choice for computers, telecommunication equipment and other sensitive devices.

The MSN-Pro Online UPS System provide the clean power to your precise mission critical equipment, regardless of any disturbance on incoming AC power. The system offers many advance features to give maximum reliability with flexibility of various configuration at the lower cost of electricity bills. With MSN-Pro Online UPS you have complete peace of mind.

Features

- Providing more high efficient AC power, compared with the previous generation
- Full digital control technology based on DSP to achieve high reliability and power function
- Output power factor 1.0
- Digitally controlled and intelligent battery management to extend the battery life
- Operation and display with LCD and LED indicators
- Fan speed can be auto conditioned according to the loads, input voltage or working mode
- Digitally controlled charger current and voltage
- Super high power density
- Self aging function enable user to test UPS at customer site without load
- Failure waveform record function help to solve problem quickly
- Parallel operation up to 4 units

Model	MSN-Pro 3110L	MSN-Pro 3115L	MSN-Pro 3120L
Input			
Cold Start	YES , Default output frequency will be 50 Hz or settable		
Acceptable Input Voltage	L-L 190VAC~499VAC; 100% load@>305VAC		
	90% load@>266VAC; 75% load@>228VAC		
	75% load@>228VAC; 50% load@>190VAC		
Phase	Three phase in, single phase out		
Transfer Voltage Range	L-L 380/400/415VAC		
Line low transfer	190VAC		
Line low recovery	209VAC		
Line high transfer	499VAC		
Line high recovery	486VAC		
Input Current			
Rating (nominal input voltage)	16.5A/380V	25A/380V	33A/380V
Input Power Factor	≥0.99		
Input current distortion	≤4%		
Input Frequency Range	40~70Hz		
Output			
Frequency adaptable	Settable		
Power	10KVA	15KVA	20KVA
Power(kW)	10KW	15KW	20KW
Waveform (Bat. Mode)	Pure Sine Wave		
Nominal voltage	L-N 220VAC/230VAC/240VAC, 200VAC/208VAC(PF=0.9)		
Voltage regulation	± 1 %		
Voltage distortion	≤1% THD, linear load, ≤3% THD, non linear load		
Synchronization range	±5Hz default, settable		
Battery mode	(50±0.1) Hz default		
Transfer Time			
Line mode to battery mode	0ms		
Inverter to bypass	0ms		
Efficiency			
Line mode with battery full charged	94%@100% load, 94.5%@70% load	94.2%@100% load, 95%@70% load	94.2%@100% load, 95%@50% load
ECO mode	98.0%		
Noise (1m away)	<55dB	<62dB	
Overload Capability (Inverter)	105% to 110% : Transfer to bypass after 10 mins; 111% to 125% : Transfer to bypass after 1 mins.; 126% to 150% : Transfer to bypass after 30s		
Overload Capability (Bypass Mode)	less than 125% : long time running; 126% to 130% : Shutdown in 5 mins; 131% to 150% : Shutdown in 1 mins; > 150% : Shutdown in 200 ms		
Battery			
Quantity	16-24PCS settable		
DC Voltage	192VDC default, settable		
Charger			
Charging current (max)	5A max, settable		
Float Charging Voltage	2.25V/cell default, 19ondensa via software		
Boost Charging Voltage	2.25V/cell default, 19ondensa via software		
Indicator & Alarm			
Display	LED+LCD		
Interface			
Interface	RS232, EPO		
Option			
Smart Kit	DB9 port dry contact, Parallel kit, USB, SNMP, 12A charger (derate to P.F. 0.9)		
Environment			
Storage	-40~70℃		
Working	0~40℃, huminity 95% non 19ondensation, attitude<3000m (@full load)		
Mechanical			
Dimension WxDxH (mm)	190*485*336	190*485*480	190*485*480
Net Weight (KG)	20	30	30
Package Weight (KG)	22	33	33

MLD Series

High Frequency Online UPS
Single-phase in/Single -phase out
1 – 3 kVA

Product

MLD series is online double-conversion UPS with full DSP control technology. With 19 inch standard rack design, self-adjusting output frequency, smart battery management system and network management. MLD is a perfect choice for computers, IT equipment and other sensitive device.

DSP Technology

The advanced DSP digital control technology enables UPS more stable performance.

Active input power factor correction (PFC)

Digitalized control of the PFC enable the UPS to keep input power factor above 0.99 to prevent possible electric grid pollution and meanwhile mostly save the cost.

Zero power switch delay

When the utility power fails, UPS will automatically switch from AC mode to battery mode with no delay, which ensures stable power supply of operating system.

Environment Friendly

This UPS is eco-designed and manufactured to meet the most local pollution control requirement of Electronic Products, which means it will cause no harm to environment and human beings in normal usage.

Wide range of input voltage and frequency

We intentionally widen the range of input factors to make sure the UPS can apply to various environment, which will effectively sustain the battery charging even in unstable power environment so that the service life of the UPS could be obviously prolonged.

Application

IDC (Internet Dater Center) network, servers and workstations, control system, communication system, office, PC etc.

Features

- True online double-conversion technology
- Wide input voltage range and stable power supply extends battery lifetime
- DSP technology
- Advanced PFC technology, input PF>99%
- Cold start
- Automatic battery charging on/off mode
- Lighting and surge protection
- LCD
- Smart RS232 port with monitoring software
- Smart slot for mission critical applications

Model	MLD1101S	MLD1101L	MLD1102S	MLD1102L	MLD1103S	MLD1103L
Capacity	1kVA/1kW		2kVA/2kW		3kVA/3kW	
Input						
Voltage	208/ 220/230/240Vac, L+N+PE					
Voltage Range	110~300Vac					
Frequency Range	40-70Hz					
Power Factor	≥0.99					
THDi	≤4% (Linear load); ≤5% (Non-linear load)					
Output						
Voltage	208/220/230/240Vac ,L+N+PE					
Voltage Regulation	±1%					
Frequency	50/60Hz ± 0.1%					
THDu Hamonic Distrotion	≤2% (Linear load); ≤5% (Non-linear load)					
Transfer Time	Line mode to battery mode, 0ms; Inverter mode to bypass mode ,4ms					
Waveform	Pure Sine Wave					
Overlord Capacity	Line Mode: 30min@102%~110% load 10min@110%~130% load 30s@130%~150% load 200ms@>150% load		Battery Mode: 1min@102%~110% load 10s@110%~130% load 3s@130%~150% load 200ms@>150% load			
Crest Factor	3:1					
Efficiency						
Line Mode	94.5%		95.5%		95.5%	
Battery Mode	87.5%@24Vdc 88.5%@36Vdc	88.5%	89.5%@48Vdc 91.5%@72Vdc	91.5%	91.5%	
ECO Mode	98%					
Battery						
Battery Voltage	24/36Vdc	36Vdc	48/72Vdc	72Vdc	72/96Vdc	96Vdc
Battery Number	12V 9AH*2/3pcs	External	12 9AH*4/6pcs	External	12V 9AH*6/8pcs	External
Charging Current	1A	1-12A settable	1A	1-12A settable	1A	1-12A settable
Communication						
Interface	RS232 / SNMP card(optional) / USB Port /AS400 (optional)					
Environment						
Operation Temperature	0~40℃					
Humidity	0~95% (non-condensing)					
Audible Noise	≤50dB					
Altitude	The altitude should not exceed 1000m, and the height above 1000m should be reduced to a maximum of 4000m.Refer to IEC62040					
Physics						
Dimensions (W*D*H)mm	440*379*86	440*379*86	440*450*86(48Vdc) 440*568*86(72Vdc)	440*450*86	440*568*86(72Vdc) 440*719*86(96Vdc)	440*450*86
Weight (kg)	8.6/10	4	15.6/18.6	6.4	22.5/25	8.2

All specifications are subject to change without prior notice.

MTN-Dual Series

1kVA~3kVA
Online double conversion
Tower or 19" rack mount UPS

Product

MTN-Dual series is a online double conversion UPS with full DSP control technology. With 19 inch standard rack design, self-adjusting output frequency, smart battery management system and network management. MTN-Dual is a perfect choice for computers, IT equipments and other sensitive devices.

DSP TECHNOLOGY
The advance DSP digital control technology enable UPS more stable performance.

ACTIVE INPUT POWER FACTOR CORRECTION (PFC)
Digitalized control of the PFC enable the UPS to keep input power fact above 0.99 to prevent possible electric grid pollution and meanwhile mostly save the cost.

ZERO POWER SWITCH DELAY
When the utility power fails, UPS will automatically switch from AC mode to battery mode with no delay, which ensures stable power supply of operating system.

ENVIRONMENT FRIENDLY
This UPS is eco-designed and manufactured to meet the most local pollution control requirement of Electronic Products, which mean it will cause no harm to environment and human beings in normal usage.

GENERATOR COMPATIBILITY
The wide range of input voltage and frequency can effectively separate the harmful electric wave produces by the generators and provide safe and reliable power supply.

WIDE RANGE OF INPUT VOLTAGE AND FREQUENCY
We intentionally widen the range of input factors to make sure the UPS can apply to various environment, which will effectively sustain the battery charging even in unstable power environment so that the service life of the UPS could be obviously prolonged.

LiFePO4 BATTERY ADVANTAGES
- Long battery runtimes – typically 3 times longer than lead-acid batteries
- Very lightweight – each battery pack weighs 44% less than a lead-acid equivalent
- Long service life – more than 10 years; only 4 to 5 years for lead-acid batteries
- Wide-temperature range – tolerates wide temperatures from -20°C to 55°C
- Advanced safety – no thermal runaway issues that are inherent in Lithium-ion chemistry
- Lower lifetime costs – 75 percent less than lead-acid batteries
- Eco-friendly –EPI LiFePO4 battery is safe for the environment. It has no caustic materials or dangerous odors.

Features

- Wide range of input voltage while input PF>99%
- Output PF of 0.9
- Full protection of over-voltage, circuit short and over temperature
- Network/fax/modem surge protection
- LED/LCD display, monitoring all the operation status
- 19 inch standard cabinet and battery cabinet
- Automatic fan speed adjustment
- Abundant interface : RS232, USB, SNMP, Intelligent Card

MODEL	MTN-Dual1101S	MTN-Dual1102S	MTN-Dual1103S
	MTN-Dual1101L	MTN-Dual1102L	MTN-Dual1103L
Capacity	1kVA/.9kW	2kVA/1.8kW	3kVA/2.7kW
Input voltage range	110VAC-288VAC		
	100% load@>176VAC; 80% load@>154VAC		
	70% load@>132VAC; 50% load@>110VAC		
Input frequency	40-70Hz		
Input PF	≥0.97		
Voltage regulation	±1 %		
Output frequency	50/60Hz		
Output PF	0.9		
Overload capability (Inverter mode)	105%-130% : to bypass 1 min; 150% : to bypass after 30 sec		
Overload capability (Battery mode)	105%-130% : shutdown after 10 sec; 150% : shutdown after 5 sec		
Crest factor	3 : 1		
Efficiency	87%	91%	90%
Display	LED+LCD		
Battery voltage	36VDC	72VDC	96VDC
Battery type/number	12V,7Ah*3	12V,7Ah*6	12V,7Ah*8
	External		
Interface	RS232, SNMP		
Optional	USB, SNMP, Dry contacts		
Operation temperature	0-40℃		
Relative humidity	0-95%(non-condensing)		
Dimension (W*D*H) (mm)	440*430*86	440*480*173	440*480*173
	440*430*86	440*480*86	440*480*86
Weight (kg)	11.5	25	31
	7	8	9.5

MTN-Dual Series

6kVA~10kVA
Online double conversion
Tower or 19" rack mount UPS

Product

MTN-Dual series is a online double conversion UPS with full DSP control technology. With 19 inch standard rack design, self-adjusting output frequency, smart battery management system and network management MTN-Dual is a perfect choice for computers, IT equipments and other sensitive devices.

DSP TECHNOLOGY
The advance DSP digital control technology enable UPS more stable performance.

ACTIVE INPUT POWER FACTOR CORRECTION (PFC)
Digitalized control of the PFC enable the UPS to keep input power fact above 0.99 to prevent possible electric grid pollution and meanwhile mostly save the cost.

ZERO POWER SWITCH DELAY
When the utility power fails, UPS will automatically switch from AC mode to battery mode with no delay, which ensures stable power supply of operating system.

ENVIRONMENT FRIENDLY
This UPS is eco-designed and manufactured to meet the most local pollution control requirement of Electronic Products, which mean it will cause no harm to environment and human beings in normal usage.

GENERATOR COMPATIBILITY
The wide range of input voltage and frequency can effectively separate the harmful electric wave produces by the generators and provide safe and reliable power supply.

WIDE RANGE OF INPUT VOLTAGE AND FREQUENCY
We intentionally widen the range of input factors to make sure the UPS can apply to various environment, which will effectively sustain the battery charging even in unstable power environment so that the service life of the UPS could be obviously prolonged.

LiFePO4 BATTERY ADVANTAGES
- Long battery runtimes – typically 3 times longer than lead-acid batteries
- Very lightweight – each battery pack weighs 44% less than a lead-acid equivalent
- Long service life – more than 10 years; only 4 to 5 years for lead-acid batteries
- Wide-temperature range – tolerates wide temperatures from -20°C to 55°C
- Advanced safety – no thermal runaway issues that are inherent in Lithium-ion chemistry
- Lower lifetime costs – 75 percent less than lead-acid batteries
- Eco-friendly –EPI LiFePO4 battery is safe for the environment. It has no caustic materials or dangerous odors.

Features

- Wide range of input voltage while input PF>99%
- Output PF of 0.9
- Full protection of over-voltage, circuit short and over temperature
- Network/fax/modem surge protection
- LED/LCD display, monitoring all the operation status
- 19 inch standard cabinet and battery cabinet
- Automatic fan speed adjustment
- Abundant interface : RS232, USB, SNMP, Intelligent Card

Model	MTN-D1106S MTN-D1106L	MTN-D1110S MTN-D1110L
Capacity	6kVA	10kVA
Input Voltage range	110VAC – 288VAC 100% load @ >176VAC; 80% load @ >154VAC 70% load @>132VAC; 50% load @ >110VAC	
Input Frequency	40-70Hz	
Input P.F.	≥0.99	
Voltage Regulation	±1%	
Output Regulation	50/60Hz	
Output P.F	. 0.9	
Overload Capability (Inverter mode)	110% : to bypass after 10 min: 130% : to bypass after 1min; 150% : to bypass after 10sec; Shutdown after 1min	
Overload Capability (Battery mode)	110% : shutdown after 10min; 125% : shutdown after 10sec; >125% : shutdown after 1sec	
Crest Ratio	3 : 1	
Efficiency	92%	
Display	LED + LCD	
Battery	192VDC	
Charging Current	5A(S); 8A(L)	5A(S); 8A(L)
Interface	RS232, SNMP (option)	
Options	USB, SNMP, ECO kit, Dry Contact, Parallel kit, Battery cabinet	
Operation Temperature	0-40°C	
humidity	0-95% (non-condensing)	
Dimension W*D*H (mm)	438*680*218 438*680*130	438*680*218 438*680*130
Net Weight (Kg)	62/18.5	70.5/21.5

MTN-D 10-25 kVA

Online double conversion
Tower or 19" rack mount UPS
3/3 ; 3/1 configuration

Product

MTN-Dual series is double conversion online UPS with fully DSP controlled technology. With its flexible configuration of 3/3 and 3/1, compact design, it's the ideal choice for modern data center with 19 inch standard rack design, self-adjusting output frequency, smart battery management system and network management. MTN-Dual is a perfect choice for computers, IT equipment and other sensitive device.

DSP TECHNOLOGY
The advanced DSP digital control technology enables UPS more stable performance.

ACTIVE INPUT POWER FACTOR CORRECTION (PFC)
Digitalized control of the PFC enable the UPS to keep input power factor above 0.99 to prevent possible electric grid pollution and meanwhile mostly save the cost.

ZERO POWER SWITCH DELAY
When the utility power fails, UPS will automatically switch from AC mode to battery mode with no delay, which ensures stable power supply of operating system.

ENVIRONMENT FRIENDLY
This UPS is eco-designed and manufactured to meet the most local pollution control requirement of Electronic Products, which means it will cause no harm to environment and human beings in normal usage.

FLEXIBLE CONFIGURATION
The system can be configured to 3/3 and 3/1

FRIENDLY INTERFACE
5.5" touch color LCD with graphic display, more information displayed and easier for customer to operate

WIDE RANGE OF INPUT VOLTAGE AND FREQUENCY
We intentionally widen the range of input factors to make sure the UPS can apply to various environment, which will effectively sustain the battery charging even in unstable power environment so that the service life of the UPS could be obviously prolonged.

Features

- Wide range of input voltage while input PF>99%
- Output PF of 1.0
- Full protection of overvoltage, circuit short and over temperature
- Network/fax/modem surge protection
- LCD/LED display, monitoring all the operation status
- 19 inch standard cabinet and battery cabinet
- Automatic fan speed adjustment
- Abundant interface : RS232, RS485, USB, SNMP, Intelligent Card
- Parallel up to 4 units

Model	MTN-D10	MTN-D15	MTN-D20	MTN-D25
Power Rating	10KVA/10KW	15KVA/15KW	20KVA/20KW	25KVA/25KW
Main				
Input	3 P + N+ PE			
Rate Voltage	380/400/415VAC (line-ine)			
Rate Frequency	50/60Hz			
Input Voltage Range	304~478Vac (line-ine), full load			
	228V~304Vac (line-ine),full load; 228V~304Vac(line-ine),derate from 75% to 100% load			
Input Frequency Range	40Hz～70Hz			
Input PF	>0.99			
Input THDi	<4% (100% Linear Load)		<3% (100% Linear Load)	
Bypass				
Rate Voltage	380/400/415Vac (line-ine)			
Rate Frequency	50/60Hz			
Input Voltage Range	Selectable, -40%～+25%			
Bypass Frequency Range	Selectable, ±1Hz, ±3Hz, ±5Hz			
Bypass Overload	125%, Long time;130%,10mins;150%,1min;>150%,1s			
Output				
Rate Voltage	380/400/415Vac (line-ine)			
Rate Frequency	50/60Hz			
Output PF	1			
Output THDu	<1% from 0% to 100% linear load; <5.5% full nonlinear load according to IEC/EN62040-3		<1.5% from 0% to 100% linear load; <6% full nonlinear load according to IEC/EN62040-3	
Inverter Overload	110% for 1 hour;125% for 10 min;150% for 1min;>150% for 200ms			
Battery				
Battery number	±240VDC			
Charger Accuracy	1 %			
Charger Capacity	up to 20% *Output power			
Battery Cold Start	Yes			
Efficiency				
AC Mode	95.0%max		>95.5%	
Battery Mode	94.5%max		>95%	
Environmental				
Operation Temperature	0 ～ 40 ℃			
Storage Temperature	-40 ～ 70 ℃			
Relative Humidity	0 ～ 95% Non condencing			
Noise (1 meter)	65dB @ 100% load, 62dB @ 45% load			
Physical data				
Dimension W*D*H (mm)	438*780*130	438*780*130	438*780*130	438*780*130
Weight (kg)	25	25	30	30

XR Nuova Series

High Frequency Online UPS
10-80kVA
3-phase in/3-phase out
(380V/400V/415V)

Product

XR series 10-80kVA UPS adopts online double conversion technology, which can completely eliminate all kinds of grid problems and provide customers with stable and pure sinusoidal power supply protection. Advanced design makes these products have unparalleled reliability and high performance. The high input power factor and low input current harmonics ensure the UPS green and environment protection, and high efficiency ensures the energy saving.

Application

Small and medium-sized data centers, IT machine rooms, financial institutions, traffic dispatch centers, security monitoring, etc.

Features

- Wide input voltage range
- Online double conversion technology
- DSP digital control technology
- Intelligent battery management extends battery life
- High efficiency, up to 95%
- 5-inch color touchscreen, friendly man-machine interface, easy to operate
- Parallel up to 8 units

Model	XR 3010S	XR 3015S	XR 3020S	XR 3030S
Capacity	10kVA	15kVA	20kVA	30kVA
Input				
Phase	3 Phase+Neutral+Ground			
Rated Voltage	380/400/415Vac			
Voltage Range	208-478Vac			
Frequency Range	40-70Hz			
Power Factor	≥0.99			
THDi	≤3% (100% linear load)			
Bypass				
Voltage Range	Upper limit: 380V+25% (+10%, +15%, +20%, settable); 400V+20% (+10%, +15%, settable) 415V+15% (+10%, settable) Lower limit: -45% (-10%, -20%, -30%, settable)			
Frequency Range	50/60Hz±10%			
Output				
Phase	3 Phase+Neutral+Ground			
Rated Voltage	380/400/415Vac			
Power Factor	0.9			
Voltage Regulation	±1%			
Output Frequency	Normal Mode: ±1%/±2%/±4%/±5%/±10%, settable; Battery Mode: 50/60Hz±0.1%			
Crest Factor	3:1			
THDu	≤2% with linear load; ≤4% with non-linear load			
Overload	110% load for 60 mins; 125% load for 10 mins; 150% load for 1 minute; ＞150%, transfer to bypass			
Battery				
Rated Voltage	±240V			
Quantity	7Ah*40pcs	9Ah*40pcs	9Ah*40pcs	9Ah*40pcs*2 strings
Charging Current	1A			2A
System				
Efficiency	94.5%			
Display	5-inch color touchscreen			
IP Class	IP20			
Interface	USB, CAN, RS485, FE, LBS, Parallel card, Relay card, SNMP card (optional)			
Temperature	Operation: 0-40 ℃; Storage: -25-55℃			
Humidity	0-95% (non-condensing)			
Altitude	＜1500m, within 1500-4000m, power derates 1% every 100m rise			
Noise (1meter)	＜58dB			
Applicable Standard	Safety: IEC/EN 62040-1; EMC: IEC/EN 62040-2; Performance: IEC/EN 62040-3			
Physical				
Weight	150	160	165	270
Dimension D*W*H(mm)	250*690*705			350*690*875

Model	XR 3010L	XR 3015L	XR 3020L	XR 3030L	XR 3040L	XR 3060L	XR 3080L
Capacity	10kVA	15kVA	20kVA	30kVA	40kVA	60kVA	80kVA
Input							
Phase	3 Phase+Neutral+Ground						
Rated Voltage	380/400/415Vac						
Voltage Range	208-478Vac						
Frequency Range	40-70Hz						
Power Factor	≥0.99						
THDi	≤3% (100% linear load)						
Bypass							
Voltage Range	Upper limit: 380V+25% (+10%, +15%, +20%, settable); 400V+20% (+10%, +15%, settable) 415V+15% (+10%, settable) Lower limit: -45% (-10%, -20%, -30%, settable)						
Frequency Range	50/60Hz±10%						
Output							
Phase	3 Phase+Neutral+Ground						
Rated Voltage	380/400/415Vac						
Power Factor	1						
Voltage Regulation	±1%						
Output Frequency	Normal Mode: ±1%/±2%/±4%/±5%/±10%, settable; Battery Mode: 50/60Hz±0.1%						
Crest Factor	3:1						
THDu	≤2% with linear load; ≤4% with non-linear load						
Overload	110% load for 60 mins; 125% load for 10 mins; 150% load for 1 minute; ＞150%, transfer to bypass						
Battery							
Rated Voltage	±192V/±204V/±216V/±228V/±240V (32/34/36/38/40 pcs), settable						
Charging Current	Max. 10A, settable					Max. 20A, settable	
System							
Efficiency	94.5%						
Display	5-inch color touchscreen						
IP Class	IP20						
Interface	USB, CAN, RS485, FE, LBS, Parallel card, Relay card, SNMP card (optional)						
Temperature	Operation: 0-40 ℃; Storage: -25-55℃						
Humidity	0-95% (non-condensing)						
Altitude	＜1500m, within 1500-4000m, power derates 1% every 100m rise						
Noise (1meter)	＜58dB						
Applicable Standard	Safety: IEC/EN 62040-1; EMC: IEC/EN 62040-2; Performance: IEC/EN 62040-3						
Physical							
Weight	45	45	45.5	45.8	46	82.5	63
Dimension W*D*H(mm)	250*690*530					300*830*960	

All specifications are subject to change without prior notice.

MST-Pro Series

10kVA ~ 120kVA
3-phase in/3-phase out
Online Double Conversion

Product

MST-Pro Series three phase UPS offers advanced technology that increase performance and reliability three high speed DSPs with completed digital control fully ensures high quality of power supply. High input power factor allows UPS a green energy saving power. It also offers humanisation design - full front access of service ability and user-friendly interface.

Application

- ISP (Internet Service Provider)
- IDC (Internet Data Center)
- Computing Center
- Bank
- Server Center
- Precise equipment

40-120kVA

Feature

- Support all kinds of load with high overload capability
- Fully digital control with 3 DSPs including IGBT rectifier, inverter and charger
- Digital circulating current control technology, increasing the parallel reliability
- Wide input voltage window, compatible with different utilities
- Green power technology, high input power factor, low current THD, high efficiency
- Intelligent battery management, extending battery life
- Intelligent self-diagnose function, all kinds of fault protection and large capability of history record storage
- Full front maintenance
- Redundant design of power model fans, increasing the system reliability
- Modularised design of subsystems, convenient field maintenance
- High MTBF (Mean Time Before Failure) [>200,000h], low MTTR (Mean Time To Repair) [<0.5h]
- Large LCD display, friendly human machine interface Configured with top and bottom cable connection
- Parallel up to 6 units
- Variety of options including main and bypass back feed protection, battery leakage protection, battery start kit, output isolation transformer and lighting protection kit

Model	MST-Pro10L	MST-Pro10S	MST-Pro15L	MST-Pro15S	MST-Pro20L	MST-Pro20S	MST-Pro30L	MST-Pro30S	MST-Pro40L	MST-Pro40S	MST-Pro60	MST-Pro90	MST-Pro120
Capacity	10kVA		15kVA		20kVA		30kVA		40kVA		60kVA	90kVA	120kVA
Input													
Grid System	3 Phases + Neutral + Ground												
Rated Input Voltage	380/400/415VAC (Line-Line)										380/400/415VAC (L-L)		
Rated Frequency	50/60Hz												
Input Voltage Range	304~478Vac (Line-Line),full load; 228V~304Vac (Line-Line),load decreases linearly according to the min phase voltage												
Input Frequency Range	40Hz～70Hz												
Input Power Factor	>0.99												
Input Current THDi	<4% (full Linear Load)				<3% (full Linear Load)								
Bypass													
Rated Bypass Voltage	380/400/415VAC (Line-Line)												
Rated Frequency	50/60Hz												
Bypass Voltage Range	Selectable, default -20%～+15%; Upper limit: +10%, +15%, +20%, +25%; Lower limit: -10%, -15%, -20%, -30%, -40%												
Bypass Frequency Range	Selectable, ±1Hz, ±3Hz, ±5Hz												
Bypass Overload	125% Long term operation; 125%~130% for 10min; 130% 150 for 1min; >150%, last for more than 300m												
Output													
Rated Inverter Voltage	380/400/415VAC (Line-Line)												
Rated Frequency	50/60Hz												
Output Power Factor	1				0.9						1		
Voltage precision	±1.5%(0-100% linear load)										±1%		
Transient Response	<5% for step load (20% - 80% -20%)												
Transient recovery	< 30ms for step load (20% - 100% -20%)										< 30ms for step load (0% - 100% - 0%)		
Output Voltage THDu	<1% (linear load); <5.5% (non-linear load) according to IEC/EN62040-3				<1% linear load; <6 (non-linear load) according to IEC/EN62040-3						<1% from 0% to 100% linear load <5% full non-linear load according to IEC/EN62040-3		
Inveter Overload	<110%, 60min; 110%~125%,10min; 125%~150%,1min;												
Frequency Regulation	50/60Hz±0.1%												
Synchronized Range	Settable, ±0.5Hz ～ ±5Hz, default ±3Hz												
Synchronized Slew Rate	Settable, 0.5Hz/S ～ 3Hz/s, default 0.5Hz/s												
Battery and Charger													
Battery Rate Voltage	±240VDC												
Charger Voltage precision	1%												
Charger Power	max=20% System Power												
Efficiency													
Normal Operation	95%max				>95%				>96%		>95%		
Battery Operation	94.5%max				>95%				>96%		>95%		
System													
Display	LED + LCD										LED + LCD + touch screen		
Interface	Standard: RS232, RS485 Option: SNMP, Dry Contact, Parallel kit, Battery cold start												
Environmental													
Operation Temperature	0 ～ 40 ℃												
Storage Temperature	-40 ～ 70 ℃												
Relative Humidity	0 ～ 95% (Non condensing)												
Noise (1 meter)	58dB @ 100% load, 52dB @ 45% load				65dB @ 100% load, 62dB @ 45% load								
Physical data													
Dimension (W*D*H,mm)	250*660*530	250*840*715	250*660*530	250*840*715	250*680*770	350*738*1335	250*680*770	350*738*1335	250*836*770	500*840*1400	600*980*950	600*980*1400	600*980*1400
Weigh(Kg)	31	51.5 (without battery)	31	51.5 (without battery)	50	89 (without battery)	52	89 (without battery)	61	140	170	231	226

MST-Pro Series

80 kVA - 500 kVA
3-phase in/3-phase out
Online Double Conversion

Product

MST-Pro series three phase UPS offers advanced technology that increase performance and reliability three high speed DSPs with completed digital control fully ensure high quality of power supply, high input power factor makes UPS green energy saving power. It also offers humanization design: full front access of service ability, user-friendly interface.

Application

- ISP (Internet Service Provider)
- IDC (Internet Data Center)
- Computing Center
- Bank
- Server Center
- Precise equipment

Features

- Three phase in and out system, compatible with utility of 380/400/415V, 50/60Hz
- Online double conversion, offering load with best power quality
- Support all kinds of load, high overload capability
- Fully digital control with three DSPs including IGBT rectifier, inverter, charger
- Digital circulating current control technology, increasing the parallel reliability
- Wide input voltage window, compatible with different utilities
- Green power technology, high input power factor, low current THD, high efficiency
- Intelligent battery management, extending battery lifetime
- Intelligent self-diagnose function, all kinds of fault protection, large capability of history record storage.
- Full front maintenance, saving space.
- Redundant design of power model fans, increasing the system reliability
- Modularized design of subsystem, convenient field maintenance
- High MTBF (mean time before failure)(>200,000h), low MTTR(mean time to repair)(<0.5h)
- Large LCD display, friendly human machine interface
- Configured with top and bottom cable connection
- Parallel up to 1,500kVA.
- All kinds of options include main back feed protection, bypass back feed protection, battery leakage protection, battery start kit, output isolation transformer and lighting protection kit.

Model	MST-Pro80	MST-Pro100	MST-Pro150	MST-Pro200	MST-Pro250	MST-Pro300	MST-Pro400	MST-Pro500
Power Rating	80kVA	100kVA	150kVA	200kVA	250kVA	300kVA	400KVA	500KVA
Input								
Grid System	3 Phases + Neutral + Ground							
Rated Input Voltage	380/400/415VAC (L-L)							
Rated Frequency	50/60Hz							
Input Voltage Range	304~478Vac (Line-Line),full load 228V~304Vac (Line-Line),load decrease linearly according to the min phase voltage							
Input Frequency Range	40Hz～70Hz							
Input Power Factor	>0.99							
Input Current THDi	<3% (full Linear Load)							
Bypass								
Rated Bypass Voltage	380/400/415VAC (Line-Line)							
Rated Frequency	50/60Hz							
Bypass Voltage Range	Selectable, default -20%～+15% Up limited: +10%, +15%, +20%, +25% Down limited: -10%, -15%, -20%, -30%, -40%							
Bypass Frequency Range	Selectable, ±1Hz, ±3Hz, ±5Hz							
Bypass Overload	125%, long time operation 125%< load <130%, last for more than 10 minutes 130%<load<150%, last for more than 1 minutes >150%, last for more than 300ms				110% Long term operation 110%~125% last for more than 5min, 125%~150% last for more than 1min, >150% last for more than 1s			
Output								
Rated Inverter Voltage	380/400/415VAC (Line-Line)							
Rated Frequency	50/60Hz							
Output Power Factor	1							
Voltage precision	±1%							
Transient Response	<5% for step load (20% - 80% -20%)							
Transient recovery	< 30ms for step load (0% - 100% -0%)							
Output Voltage THDu	<1% from 0% to 100% linear load <5% full non-linear load according to IEC/EN62040-3							
Inverter Overload	<110%, 60min; 110%~125%,10min; 125%~150%,1min; >150%,200ms							
Frequency Regulation	50/60Hz±0.01%							
Synchronized Range	Settable, ±0.5Hz ～ ±5Hz, default ±3Hz							
Synchronized Slew Rate	Settable, 0.5Hz/S ～ 3Hz/S, default 0.5Hz/S							
Battery and Charger								
Battery Rate Voltage	±240VDC							
Charger Voltage precision	1%							
Charger Power	max=20% *Output power							
Efficiency								
Normal Operation	>96%							
Battery Operation	>96%							
System								
Display	LED+LCD							
Interface	RS232, RS485, USB, Programmable dry contact				RS232, RS485, USB, Programmable dry contact, battery cold start			
Option	battery cold start, SNMP, AS400, parallel kit, Lightning protection components, Dust Filter, LBS				SNMP, AS400, parallel kit, Lightning protection components, Dust Filter, LBS			
Environment								
Operation Temperature	0 ～ 40 °C							
Storage Temperature	-40 ～ 70 °C							
Relative Humidity	0 ～ 95% Non condensing							
Noise (1 meter)	65dB @ 100% load, 62dB @ 45% load							
Altitude	<1000m, Load derated 1% per 100m From 1000 ～ 2000m							
Physical								
Dimension (W*D*H,mm)	600*980*1150	600*980*1150	650*960*1600	650*960*1600	650*960*2000	650*960*2000	1300*1100*2000	1300*1100*2000
Weigh (kg)	210	210	305	350	445	490	810	900

XTREME X SERIES

3-phase in/3-phase out
10 - 800 kVA

DATA CENTER MEDICAL INDUSTRY TRANSPORTATION EMERGENCY

Product

Compact, high performance three phase power protection with excellent efficiency and scalable runtime for any type of it load, tertiary application, lighting or building and other business critical applications.

The Xtreme X Series UPS brings the latest power conversion technology to the marketplace, using a three level design with a multi mode architecture with latest generation components. These UPS aim to be functional, safe, easy to install and use.

Complete, Cost Effective Solution

- Online double conversion mode with an real full power, according to IEC 62040: kW=kVA (unity power factor design) means 25% more active power available compared to legacy UPS.
- Dual input mains allow you to manage independent power sources.
- Increased system availability placing UPS in parallel for N+1 and N+X redundancy.
- Internal manual bypass for easy maintenance without power interruption.
- Up to 8 pcs parallelable.
- Multi language big LCD display

Tailored to Your Environment

- Low noise level and higher fan life time with intelligent fan speed control.
- Flexible battery solutions.
- Compact, lightweight and easy to install.
- Frequency converter mode.
- Extended battery life with exclusive battery charging management for increased battery life.
- All in one: 1/1, 1/3, 3/1 and 3/3 phase configurations.
- Adjustable battery quantity.

Lowest Total Cost of Ownership

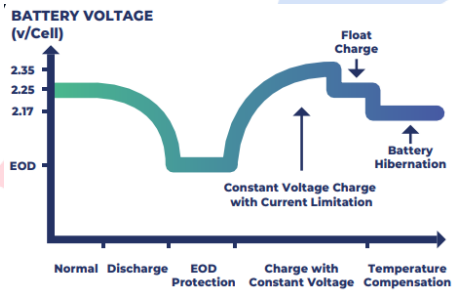
- Thanks to three level inverter design and a multi mode architecture that makes real time decisions between premium protection mode and premium efficiency mode brings efficiency up to 96% at 50% online load operation.
- 10% saving on energy losses compared to legacy UPS gives significant savings in energy.
- Significant reduction in energy loss.
- Reduced energy usage, air conditioning requirements and cooling operating costs.
- Energy Saver mode for global efficiency improvement on parallel systems.
- Up to 35 percent smaller than similar competitive solutions. Saves space with a reduced footprint

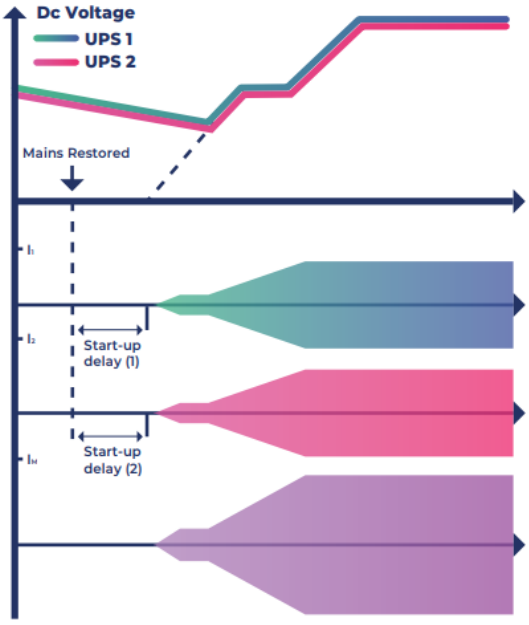
Easy Maintenance

- Built-in manual bypass to eliminate maintenance related downtime.
- Proactive detection of fan failure and switch fault for early diagnosis on UPS malfunction.
- Plug and play card design to simplify the maintenance process.
- Easy service by the help of modular power board concept.
- MTTR is less than 30 minutes.
- Lower spareparts cost by using common boards for different ratings.

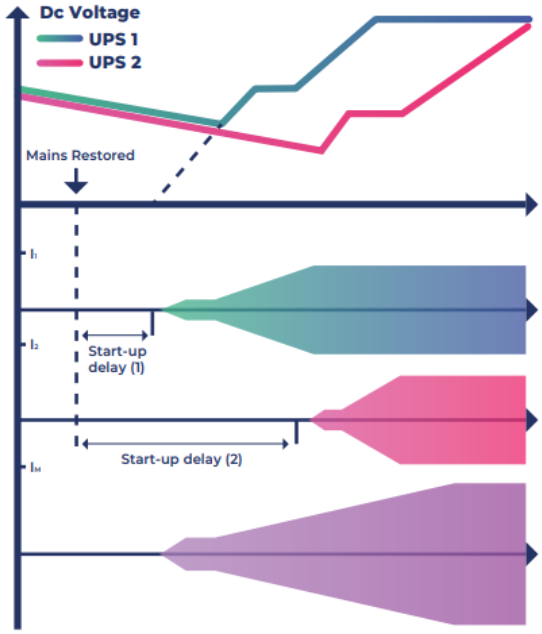
Intelligent Battery Management System

- Thanks to intelligent battery management system increase 35% battery life and maximizes battery performance, life time and reliability through intelligent charging.
- Temperature compensated battery charging monitors performing measurement of external and internal battery temperature and adjusting the charge current rate accordingly. **Intelligent battery management system can sustain battery lifespan and the capacity of battery backed up through the functions of;**
- Monitoring & compensation battery remaining capacity displayed in percentage.
- Overcharge/discharge protection.
- Auto/manual battery test.
- Three charging modes ensure maximum battery availability.
- Constant current charging provides maximum rated current to the battery until the voltage rises to a pre-determined limit.
- A boost voltage is provided for a short term to reduce the battery recharge interval.
- Float charging maintains the battery at the recommend voltage.
- Adjustable battery charging time due to the level of the load to save from energy cost.





Dc voltage and AC current behaviour using the same value for delay time



Dc voltage and AC current behaviour using different value for delay time

High Performance Rectifier Clean Input Performance

- Thanks Thanks to the technology used, UPS solves installation problems in systems where the power supply has limited installed power, where the UPS is also powered by a generator or where there are compatibility problems with loads that generate harmonic currents; UPS has zero impact on its power source, being either the mains power supply or a generator. IGBT based rectifier and innovative control algorithm ensures an input Total Harmonic Distortion (THDi) of less than 3% and draws a pure sinusoidal waveform from the mains. This also provides UPS input power factor of >0.99.

Advantages

- Saving in the sizing of upfront equipment e.g. emergency generators, cablings and circuit breakers.
- No disturbances to nearby equipment; eliminate perturbation and outage on upfront electrical equipment, avoiding also any investigation and analysis cost due to malfunction In addition, UPS plays a filter and power factor correction role in the power network upstream of the UPS, as it eliminates harmonic components and the reactive power generated by the powered utilities

Programmable Soft Start

Start up delay function, to restart the rectifiers when mains power is restored if there are several UPS in the system. The programmable soft start allows the rectifier to ramp up in a programmable time period (0-15 seconds) thus eliminating in-rush current.

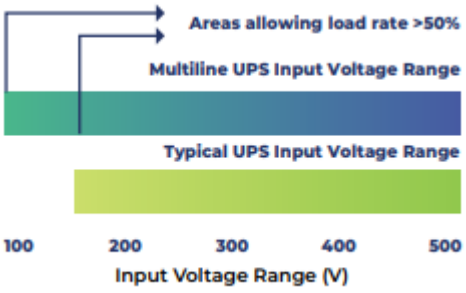
This feature reduces the need of oversizing the input power system (gensets, feeder cables, and over current devices).

Perfect Generator Compatibility

User programmable features such as slew rate, phase angle rate of change and voltage rate of change allow the UPS to quickly sync to a genset during emergency back. Thanks to its robust IGBT rectifier it is enough to choose generator with power only 20% higher rated than the UPS

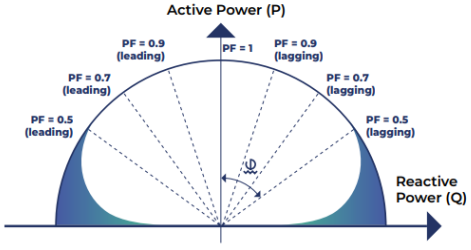
High Grid Adaptability

- 138-485 Vac wide input voltage range to minimize battery use: 485-305 Vac for 100% load; 305-138 Vac for 100%-40% load (derating linearly)
- 6 kV/5 kA lightning protection design, reducing lightning related failure rate.



Output Performance

High Output Power factor 1= Real Power (kW)
Real full power, according to IEC 62040: Output power factor of 1 (kW=kVA) rate provides 25% more active power compared to traditional UPS. Suitable for latest generation of servers (leading or unity power factor) without any reduction in active power from 1 leading to 1 lagging. Suitable also for leading power factor loads down to 0.9 without apparent power derating.



Total Harmonic Distortion (THD)

A distorted output voltage waveform affects the proper function of the load's equipment. The Xtreme X Series has very low output voltage THD, eve with connected 100% unbalanced or 100% non-linear loads.

Transient Response

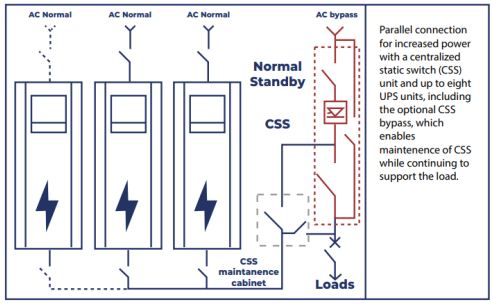
Transient response is very fast due to control algorithms which reduces the need to oversize the UPS for pulse load applications.

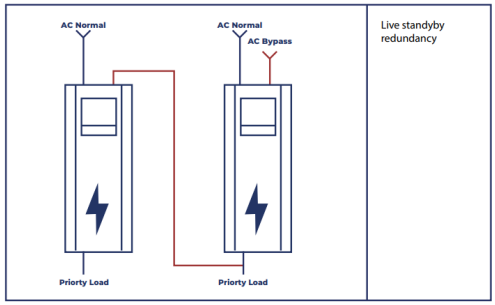
Redundant Parallel Features

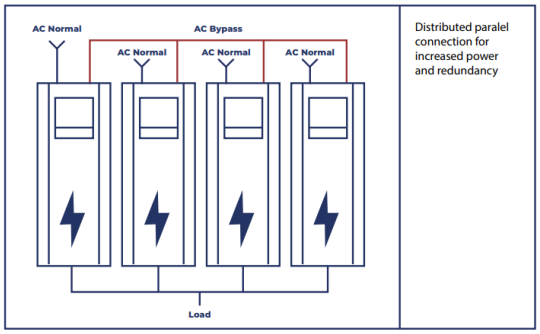
Thanks to unique control technology that can parallel UPS modules with true redundancy by eliminating any single point of failure, RPA provides a scalable paralleling technique that reduces operating footprint and increases system reliability by eliminating the need for external paralleling equipment and cabinets (centralized bypass and master control). One of the UPS modules in the system intelligently takes the leadership role, while the other UPS modules have access to all control parameters. If one UPS fails to operate, the load is automatically redistributed among the others. If the lead UPS fails to operate, then another UPS automatically takes on the leadership role.

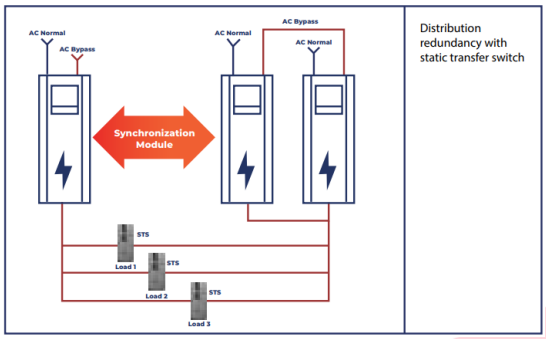
Parallel Operation Features;

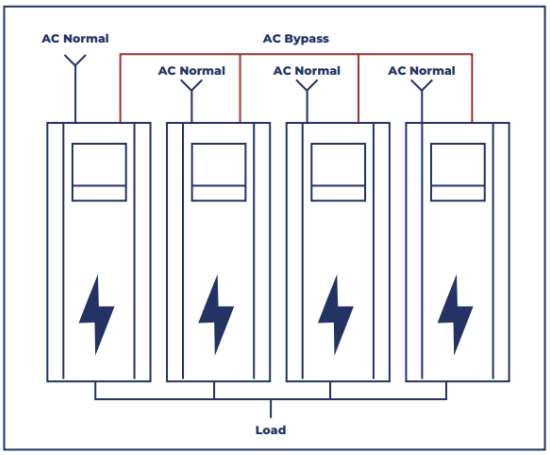
- Parallel connection with ring cable.
- Sequential Soft Start.
- Loop bus connection.
- Distributed Control Logic.
- Autosensing disconnected parallel cable.
- Redundant Communication.
- Easy power update without any interruption.
- Full synchronization of parallel units.
- Isolated parallel operation card.
- Static bypass for all units.
- No Single Points of Failure



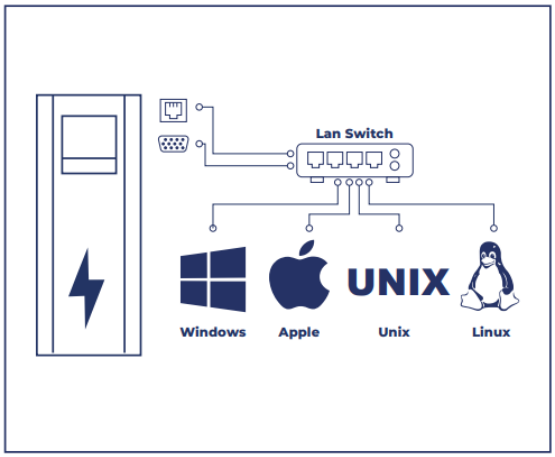


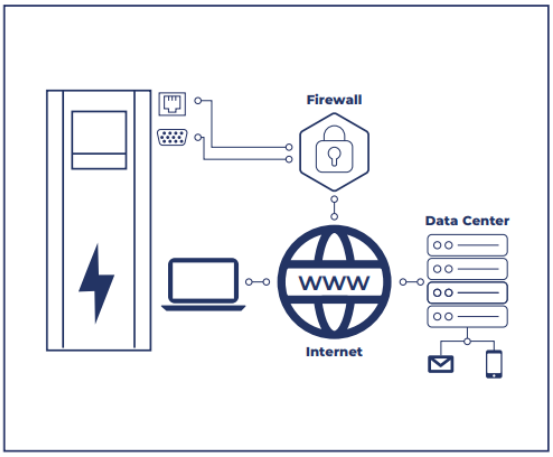






- PC & Server shutdown
- Web page remote monitoring
- Building management system
- E-mail alarm reporting
- Remote monitoring 24/7 technical Service





Self Load Power Test

Only 4% incremental energy consumption. Full power test of Rectifier, Inverter, Bypass, Chokes, Capacitors, Cables and Fuses. Customer load safely supplied through maintenance bypass dummy load free.

Software & Connectivity Solutions

- Local communication with RS232 and RS485
- 2pcs configurable input contact
- Relay board with alarms
- GenSet contact
- EPO contact
- USB
- Remote Monitoring Panel
- Battery Temperature Sensor for Temperature compensated charging
- JBUS, PROFIBUS Local connection
- SNMP IT Manager monitoring
- Environment sensors for Data Centers (Humidity, Temperature, Smoke, etc.)
- GSM, Telnet, GPRS communication

Features

- Three Level Technology
- Output Power Factor 1 (kVA=kW)
- On Line-Double Conversion Technology (Class VFI-SS-111)
- IGBT PWM Rectifier & Inverter Technology
- Multi Processor Digital Control
- High Efficiency up to 96%
- Higher efficiency with eco-mode (up to 98%)
- Low Input Current THD (≤3%)
- High Input Power Factor (>0.99)
- Low output voltage THD (≤2%)
- Short response time (≤2ms)
- Automatic soft-start
- Cold start
- Dual Input
- Advanced Battery Management
- DC/DC Charger/Booster
- Flexible battery count
- Wide Input Voltage Range
- Variable input low voltage depending on loading percentage (up to -36%)
- Short Circuit, Overload, Lightning and Surge Protection
- Paralellable Modules up to 8 units
- Intelligent redundancy management (n, n+1 and n+x)
- 256 Real Time Event Log with Detailed Parameters
- Static & Manual Bypass Operation
- Small Footprint and Easy Maintenance
- Data analyzing over user interface
- Advanced Communication Capabilities
- Remote monitoring and management software
- Perfect Generator Compatibility
- Programmable dry contacts

Model	EST 3310X	EST 3315X	EST 3320X	EST3330X	EST3340X	EST3360X	EST 3380X	EST33100X	EST33120X
Nominal power (kVA)	10	15	20	30	40	60	80	100	120
General									
Technology	Three Level On-Line double conversation VFI-111								
Waveform	Sinusoidal								
Architecture	Stand Alone or Distributed Parallel up to 8 units								
Input									
Input voltage	380, 400, 415 V 3Ph+N+PE								
Input frequency	45-65 Hz								
Voltage Tolerance (%100 load)	(-20)% (+20)%								
Voltage Tolerance (%40 load)	(-36)% (+20)%								
Input Power Factor	>0,99								
Input Current Harmonic**	≤3%								
Output									
Output voltage	380, 400, 415 V 3Ph+N+PE								
Output Voltage Tolerance	+1%								
Overall Efficiency*[5] (AC-AC)	Up to 96% (Half load)								
Crest Factor	3:1								
Ecomode Efficiency	Up to 98,5%								
Nominal Output Frequency	50/ 60Hz +0,01 free run (Adjustable from LCD Panel)								
Output Power Factor	1.0 (0.9/0.8 optional)								
THD of Output Voltage	<2%								
Battery									
Battery Type	VRLA-AGM / GEL / NiCd / Li-ion								
Battery Test	Automatic or Manual								
Battery Charge Time	<6h-8h								
Bypass									
Bypass	Built in Automatic and Maintenance Bypass								
Voltage Tolerance	±10%								
Transfer Time	0 ms								
Overload Capability	150% load 1 minute								
Communication									
LCD Display	Graphical lcd screen, Led bar status								
Communication Ports (Optional)	RS485, Genset, SNMP, GSM Modem, Relay Contacts, Input Contacts, Modbus and USB								
Battery Temperature Sensor Contact	Available								
Emergency Power Off (Epo)	Yes								
Accessories (Optional)	Galvanic Isolation Transformer, Remote Monitoring Panel								
Charger Capacity									
1.0 Model (max)	13A								
0.9 ,0.8 Model (max)	1/4A	4A				13A			
0.9, 0.8 model (with charge card option – max)	4A/13A	13A							
Battery Quantity									
With Internal Battery	20 pcs 12V 7/9Ah 32* pcs 12V 7/9Ah		32 pcs 12V 7/9Ah	32** pcs 12V 7/9Ah 60*3 pcs 12V 7/9Ah	2x30 pcs 12V 7/9Ah	2x30** pcs12V 7/9Ah 40*3 pcs 12V 18Ah 60 *4 pcs 12V 18Ah	40 pcs 12V 18Ah 60*4 pcs 12V 18Ah		
External Cabinet with 4A Charger Option	30-40 pcs (Default 30 pcs)								
External Cabinet with 13A Charger Option	30-46 pcs								
Physical									
Dimensions H x W x D (mm)	800 x 300 x 700		990 x 300 x 850		1200 x 430 x950		1200 x 430 x950		1300x 540 x 960
Net Weight (kg)	48	51	65	71	90	115	125	135	140	205	210
Environment									
Operating temperature (°C)	0°C – 40°C								
Storage Temperature	-15°C/+ 55°C								
Proposed Temp. To Extend Battery Life	20 – 25°C								
Relative Humidity (%)	< 95% not condensing								
Noise (at 1 meter)	<55 dBA		<58 dBA				<60 dBA		<62 dBA
Protection Class	IP 20								
Standard									
Reference Product Standards	EN 62040-1-1 (Safety), EN 62040-2 (EMC), EN 62040-3 (Performance)								

Model	EST33160X	EST33200X	EST33250X	EST33300X	EST33400X	EST33500X	EST33600X	EST33800X
Nominal power (kVA)	160	200	250	300	400	500	600	800
General								
Technology	Three Level On-Line double conversation VFI-111							
Waveform	Sinusoidal							
Architecture	Stand Alone or Distributed Parallel up to 8 units							
Input								
Input voltage	380, 400, 415 V 3Ph+N+PE							
Input frequency	45-65 Hz							
Voltage Tolerance (%100 load)	(-20)% (+20)%							
Voltage Tolerance (%40 load)	(-36)% (+20)%							
Input Power Factor	>0,99							
Input Current Harmonic**	≤3%							
Output								
Output voltage	380, 400, 415 V 3Ph+N+PE							
Output Voltage Tolerance	+1%							
Overall Efficiency* (AC-AC)	Up to 96% (Half load)							
Crest Factor	3:1							
Ecomode Efficiency	Up to 98,5%							
Nominal Output Frequency	50/ 60Hz +0,01 free run (Adjustable from LCD Panel)							
Output Power Factor	1.0 (0.9/0.8 optional)							
THD of Output Voltage	<2%							
Batteries								
Battery Type	VRLA-AGM / GEL / NiCd / Li-ion							
Battery Test	Automatic or Manual							
Battery Charge Time	<6h-8h							
Bypass								
Bypass	Built in Automatic and Maintenance Bypass							
Voltage Tolerance	±10%							
Transfer Time	0 ms							
Overload Capability	150% load 1 minute							
Communication								
LCD Display	Graphical lcd screen, Led bar status							
Communication Ports (Optional)	RS485, Genset, SNMP, GSM Modem, Relay Contacts, Input Contacts, Modbus and USB							
Battery Temperature Sensor Contact	Available							
Emergency Power Off (Epo)	Yes							
Accessories (Optional)	Galvanic Isolation Transformer, Remote Monitoring Panel							
Physical								
Dimensions H x W x D (mm)	1300x 540 x 960			1900 x 1250 x 775			1666 x 1723 x 866	
Net Weight (kg)	220	260	292	635	680	890	1050	1150
Ambient conditions								
Operating temperature (°C)	0°C – 40°C							
Storage Temperature	-15°C/+ 55°C							
Proposed Temp. To Extend Battery Life	20 – 25°C							
Relative Humidity (%)	< 95% not condensing							
Noise (at 1 meter)	<65dBA							
Protection Class	IP 20							
Compliance								
Reference Product Standards	EN 62040-1-1 (Safety), EN 62040-2 (EMC), EN 62040-3 (Performance)							

DX Series
10-30kVA

Single-phase in/Single-phase out
200V/208V/220V

Product

DX series UPS applies advanced technology that increases performance and reliability. Two high speed DSPs with completed digital control to ensure high quality of power supply, high input power factor and low input current makes UPS green energy saving power. It also offers humanisation design; a full front access of service ability and a user-friendly interface.

Applications

- ISP (Internet Service Provider)
- IDC (Internet Data Center)
- Computing Center
- Bank
- Server Center
- Precision equipment

Features

- Online double conversion
- High efficiency and reliability
- High input voltage and frequency windows
- High input PF>0.99
- Input current THDi<4%
- Multi-protection, over-temperature protection with 8 sensors, over-load, battery under voltage, fan failures, short-circuit
- Four circuit breakers, providing full protection when fault happens
- Battery cold start
- Battery management with smart charging control, greatly extend the battery life
- Parallel up to 8 units
- Friendly operation interface, high-resolution LCD screen

Model		DX33010XS; DX33010XL	DX33020XS; DX33020XL	DX33030XS; DX33030XL
Capacity		10kVA	20kVA	30kVA
Input				
Phase		3 Phase + Neutral + Ground; 200V/208V/220V (line-line)		
Voltage Range		187-261VAC (line-line), full load; 187-125VAC (line-line),load derated linearly	166-261VAC (line-line), full load; 166-125VAC (line-line), load derated linearly	
Frequency Range		40Hz-70Hz		
THDi		<5%(linear load)	<4%(linear load)	
Power Factor		>0.99		
Output`				
Voltage		200V/208V/220V (line-line)		
Voltage Regulation		1.5%		
THDu		<1.5%(linear load), <6%(non-linear load)		
Power Factor		1	0.9	
Frequency Range		50/60Hz		
Frequency Precision		0.1%		
Overload Capability		110% for 10min; 125% for 1min; 150% for 30s; >150% for 200ms	110% for 60min; 125% for 10min; 150% for 1min; >150% for 200ms	
Battery				
Voltage		±120VDC		
Charge Power		20% system power		
Voltage Precision		1%		
System Efficiency	Normal	93%	94%	
	Battery	92.5%	93%	
Display		LCD + LED + Keyboard		
IP Class		IP20		
Interface		Standard : RS232, RS485, Dual input kit		
Operation Temperature		0-40°C		
Relative Humidity		0-95% (non-condensing)		
Noise		58dB @ 100% load, 52dB @ 45% load (1 meter away)	70dB @ 100% load, 62dB @ 45% load (1 meter away)	
Mechanical				
Weight (kg)		51.5; 31.0	140.0; 64.0	
Dimension (W*D*H) (mm)		250*840*715 250*660*530	500*840*1400 250*950*770	

HM-ProX Series

10-120kVA
3-phase in/Single-phase out
On-Line Double Conversion (VFI)

Product

Stable, Smart, Simple, Saving; Reliable. HM-ProX industrial Uninterruptible Power Supply system (UPS) combines conservative design (SCR/IGBT) with proven digital control to ensure the utmost reliability in any electrical and environmental conditions. With the integration of our existing users' application and feedback, and our latest research and developments which have improving our product performance, efficiency, safety, system reliability, higher power Integration of density, intelligence and miniaturization.

Applications

- Oil and Gas industries,
- Off shore and onshore
- Refining and petrochemical plants
- Power generation plants
- Rail transport

Features

- Uses the DSP digital vector control technology which increases the performances of power components, enables an active conditioning of the load and allows personalized system settings. The result is improved reliability for the process and enhanced safety for the personnel.
- Support a variety of batteries type, automatic control of the charging voltage and current, with cold start function, and battery replacement without interrupting the UPS operation.
- The panel displays with friendly, easy detailed UPS interface information, realize UPS remote monitoring and control through input/output dry contact and SNMP card.
- 12-pulse rectifier is an option, which can enhance the input power factor and lower the Input power harmonics
- With high reliability design such as reverse voltage and short circuit protection, simple power distribution, and parallel redundancy (N+1) function

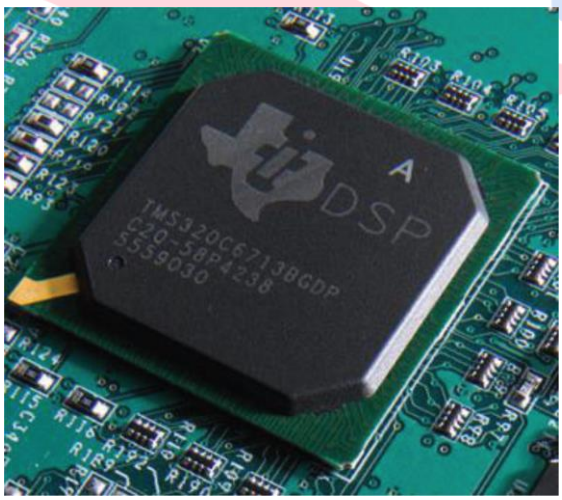
Model		HM-ProX10	HM-ProX15	HM-ProX20	HM-ProX30	HM-ProX40	HM-ProX50	HM-Pro60	HM-ProX80	HM-ProX120
Capacity		10kVA	15kVA	20kVA	30kVA	40kVA	50kVA	60kVA	80kVA	120kVA
Input										
Rated AC Input		380/400/415Vac, 50/60Hz								
Voltage Range		285Vac-498Vac								
Frequency Range		45-66Hz								
Bypass										
Rated AC Input		220/230/240Vac, 50/60Hz								
Voltage Range		-40%- +20% (settable)								
Frequency Range		±2.5%, ±5%, ±10%, ± 20% (settable)								
Voltage Transient		± 0.5 - ± 3Hz (settable)								
Output										
Rated AC Output		220/230/240Vac, 50/60Hz Single-phase+ neutral)								
Power Factor		0.9								
AVR Precision		± 1%								
Voltage Transient		± 5%(0-100% load change)								
THDv		< 1 % linear load, < 3 % linear load								
Frequency Precision		±0.05%								
N+X Parallel		4								
Load Capacity		105% constant, 110% 1 hour, 125% 10mins, 150% 1mins								
Battery										
Voltage		360/72/384V (settable), 2V/6V/12V battery selectable, support lithium & nickel–cadmium battery								
Other										
Display		LCD + LED touch-screen selectable								
Temperature		0-40°C								
Humidity		0-95% No condensation								
Noise		50dB			60dB		65dB			68dB
Depth (mm)		720					750			855
Height (mm)		1000					1400			1900
Width (mm)	6-Pulse	560					800			890
	12-Pulse	/			970		1270			1415
Weight (Kg)	6-Pulse	195	205	235	255	300	460	480	550	960
	12-Pulse	/			410	420	720	750	800	1390
Rs232/485		Support windows XP/7/8/Linux/Mac								
SNMP Oprtional		Support remote monitoring and management via SNMP								

HT-ProX Series

10 kVA~600 kVA
3-phase in /3-phase out
On-Line Double Conversion (VFI)

Product

Stable, Smart, Simple, Saving; Reliable. HT-Pro X series UPS is true online, double conversion topology, with most innovative design and patents, power your business with the highest power quality. Environment friendly, high efficiency and high reliability provides the lowest TCO (Total Cost of Ownership). This series UPS is fully digital controlled, armed with several DSP, MCU, CPLD, can parallel up to 8 units for redundancy or capacity, is truly a high quality, innovational solutions to protect your business from power problems.



Features

Leading Technology

- Advanced SCR rectifier and IGBT inverter control technology, true online double conversion topology, three phase in three phase out, 380/400/415V, 50/60Hz compatible.
- Super wide input voltage/frequency range, adapt to harsh utility environments.
- Higher overload capacity and output short-tolerant ability.
- Input power factor up to 0.95 with input filter options, input THDI<4.5%.
- Output power factor 0.9, brings 12.5% more power than traditional UPS.
- Intelligent self-diagnosis, mass memory to record operation log.
- Super long MTBF and short MTTR.
- Intelligent parallel and parallel ECO Mode.

RELIABILITY

Fully digital control with the most advanced DSP processor, higher system reliability. Redundant fan design, enhance system reliability. Build-in output isolation transformer, eliminate neutral to ground drifting voltage, and isolate load harmonic current influence to inverter. More than 90% components are from world well-known tier 1 suppliers, 100% IQC inspected. All final products will pass internal test procedure and 24 Hours burn-in before delivery, increase the system reliability.

ABUNDANT OPTIONS
Build-in various communication connectors (RS232, RS485, AS400, EPO etc). Optional cards available : SNMP, battery management kit, lighting proof module, dust proof filter etc.

OPERATION
Front side maintenance, top or bottom wiring connection, with protection equipments. Friendly human machine interface, easy operation with large LCD panel and keyboards.

OPTIONAL
- Upper wiring kit
- SNMP card
- Battery thermal sensor
- Parallel kit
- D level lighting proof module
- Bypass load share choke
- LBS cable
- Dry contact card
- 5th filter
- 11th filter
- BCB kit
- Battery grounding fault detector

IDEALLY SUITED FOR
Data centers, Server rooms, Finance, Telecommunications, Insurance, Education, Government, Large stadium, Opera, Theatre, Harbour, Traffic facilities, Production areas etc.

Technical Features
- Multi DSP, CPLD, MCU digital control, higher consistency and reliability.
- Output power factor 0.9, delivers 12.5% more power than tradition 0.8 UPS.
- Wide input voltage/frequency range, adapt to harsh utility power.
- Non master/slaver digital intelligent parallel control, self-load share algorithm, parallel up to 8 units.
- Single Mode ECO and parallel ECO
- Super overload capacity and output short-tolerant ability, maximize protect load even under abnormal conditions.
- Advanced intelligent battery management, self-diagnose technology, extend battery life.
- Redundant control power, increase even higher system reliability.
- Independent cooling system, multi-protection design, ensures high reliability even under harsh environments.
- 6-inch LCD display, friendly interface, easy to operate.
- Environment friendly green UPS, with various harmonic restrain technology.
- Double conversion online topology, with output isolation transformer, all-round protect load from utility or generator problems.

Model		HT-ProX10	HT-ProX15	HT-ProX20	HT-ProX30	HT-ProX40	HT-ProX60	HT-ProX80
Capacity	Rated capacity	10 kVA	15 kVA	20 kVA	30 kVA	40 kVA	60 kVA	80 kVA
	Active power	9 kW	13.5 kW	18 kW	27 kW	36 kW	54 kW	72 kW
Mains	Input type	3 phase + ground						
	Rated AC Input	380/400/415 VAC						
	Voltage range	285 VAC – 498 VAC						
	Rated frequency	50/60 Hz						
	Frequency range	45-66 Hz						
	Input power delay	5-600s settable						
	Rectifier soft start	6-100s settable						
Bypass	Rated AC input	380/400/415 VAC (3 phase + neutral)						
	Voltage range	-40%-+20% settable						
	Frequency	50/60Hz±10% (±2.5%, ±5%, ±10%, ±20% settable)						
Output	Rated AC output	380/400/415 VAC						
	AVR precision	±1% (100% balance load), ±2% (100% unbalance load)						
	Power factor	0.9						
	Voltage transient	±5% (0-100% load change)						
	THDv	< 1%(100%linear load)						
	Voltage transient	< 5ms						
	Frequency synchronization	±2Hz (±0.5 - ±3Hz settable)						
	Inverter overload	110% constant, 125% 10mins, 150% 1mins						
	Frequency precision	±0.05%						
	Waveform	Pure sinewave						
Efficiency	Normal mode	92%						
	ECO mode	98%						
Parallel	N+X parallel	8 units						
Battery	Voltage	(360V-384V) / (2V/cell)						
Display		LCD + LED						
Size	Depth (mm)	720						750
	Height (mm)	1100						1400
	Width (mm) 6 pulse	560						800
	Width (mm) 12 pulse	/			970		1270	
Weight	Net Weight (Kg) 6 pulse	195	235	255	300	330	480	550
	Net Weight (Kg) 12pulse	/			420	480	750	800
Environment	Temperature	0-40°C						
	Humidity	0-95% No condensation						
	Noise (1m)	≤ 55dB			≤ 60dB		≤ 65dB	
Control	RS232, RS485	Support windows XP/7/8/Linux/Mac						
	SNMP optional	Support remote monitoring and management via SNMP						
Standard	Safety	IEC60950-1,IEC62040-1-1						
	Electromagnetic compatibility	IEC62040-2,IEC62040-3						

Model		HT-ProX 100	HT-ProX 120	HT-ProX 160	HT-ProX 200	HT-ProX 250	HT-ProX 300	HT-ProX 400	HT-ProX 500	HT-ProX 600
Capacity	Rated capacity	100 kVA	120 kVA	160 kVA	200 kVA	250 kVA	300 kVA	400 kVA	500 kVA	600 kVA
	Active power	90 kW	108 kW	144 kW	180 kW	225 kW	270 kW	360 kW	450 kW	540 kW
Mains	Input type	3 phase + ground								
	Rated AC Input	380/400/415 VAC								
	Voltage range	285 VAC – 498 VAC								
	Rated frequency	50/60 Hz								
	Frequency range	45-66 Hz								
	Input power delay	5-600s settable								
	Rectifier soft start	6-100s settable								
Bypass	Rated AC input	380/400/415 VAC (3 phase + neutral)								
	Voltage range	-40%-+20% settable								
	Frequency	50/60Hz±10% (±2.5%, ±5%, ±10%, ±20% settable)								
Output	Rated AC output	380/400/415 VAC								
	AVR precision	±1% (100% balance load), ±3% (100% unbalance load)								
	Power factor	0.9								
	Voltage transient	±5% (0-100% load change)								
	THDv	< 1%(100%linear load)								
	Voltage transient	< 5ms								
	Frequency synchronization	±2Hz (±0.5 - ±3Hz settable)								
	Inverter overload	105% constant, 110% constant 1hour, 125% 10mins, 150% 1mins								
	Frequency precision	±0.05%								
	Waveform	Pure sinewave								
Efficiency	Normal mode	94%								
	ECO mode	98%								
Parallel	N+X parallel	8 units								
Battery	Voltage	(360V-384V) / (2V/cell)							456V-504V) / (2V/cell)	
Display		LCD + LED								
Size	Depth (mm)	855								900
	Height (mm)	1900								
	Width (mm) 6 pulse	890		1245		1640		2265	/	/
	Width (mm) 12 pulse	1415		1770		2265			2615	
Weight	Net Weight (Kg) 6 pulse	960		1075		1630		2105	/	/
	Net Weight (Kg) 12pulse	1390		1685		2290		2500	2850	3130
Environment	Temperature	0-40°C								
	Humidity	0-95% No condensation								
	Noise (1m)	≤ 67dB							≤ 71dB	≤ 73dB
Control	RS232, RS485	Support windows XP/7/8/Linux/Mac								
	SNMP optional	Support remote monitoring and management via SNMP								
Standard	Safety	IEC60950-1,IEC62040-1-1								
	Electromagnetic compatibility	IEC62040-2,IEC62040-3								

XTREME T SERIES

10 - 300 kVA
Transformer Based UPS
3-phase in/3-phase out

DATA CENTER MEDICAL INDUSTRY TRANSPORTATION EMERGENCY

Product

Compact, high performance three phase power protection with excellent efficiency and scalable runtime for any type of it load, tertiary application, lighting or bulding and other business critical applications. The Xtreme T Series UPS brings the latest power conversion technology to the marketplace, using a three level design with a multimode architecture with a test generation components. These UPS aim to be functional, safe, easy to install and use.

Complete, Cost Effective Solution

- Online double conversion mode with an real full power, according to IEC 62040: kW=kVA (unity power factor design) means 25% more active power available compared to legacy UPS.
- Dual input mains allow you to manage independent power sources.
- Increased system availability placing UPS in parallel for N+1 and N+X redundancy.
- Internal manual bypass for easy maintenance without power interruption.
- Up to 8 pcs parallelable.
- Multi language big LCD display

Tailored to Your Environment

- Low noise level and higher fan life time with intelligent fan speed control.
- Flexible battery solutions.
- Compact, lightweight and easy to install.
- Frequency converter mode.
- Extended battery life with exclusive battery charging management for increased battery life.
- Adjustable battery quantity.

Lowest Total Cost of Ownership

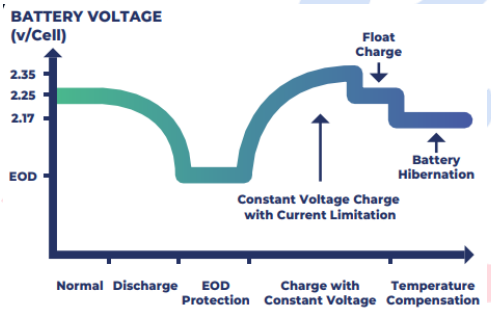
- Thanks to three level inverter design and a multi mode architecture that makes real time decisions between premium protection mode and premium efficiency mode brings higher efficiency even at 50% online load operation.
- 10% saving on energy losses compared to legacy UPS gives significant savings in energy.
- Significant reduction in energy loss.
- Reduced energy usage, air conditioning requirements and cooling operating costs.
- Energy Saver mode for global efficiency improvement on parallel systems.
- Up to 35 percent smaller than similar competitive solutions.
- Saves space with a reduced footprint.

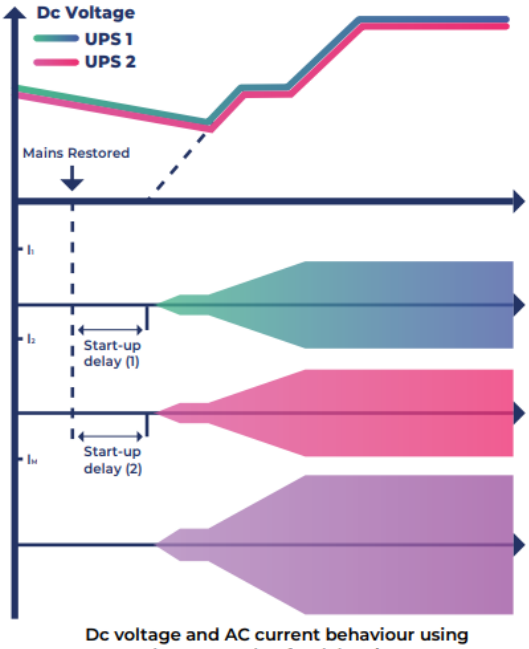
Easy Maintenance

- Built-in manual bypass to eliminate maintenance related downtime.
- Proactive detection of fan failure and switch fault for early diagnosis on UPS malfunction.
- Plug and play card design to simplify the maintenance process.
- Easy service by the help of modular power board concept.
- MTTR is less than 30 minutes.
- Lower spareparts cost by using common boards for different ratings.

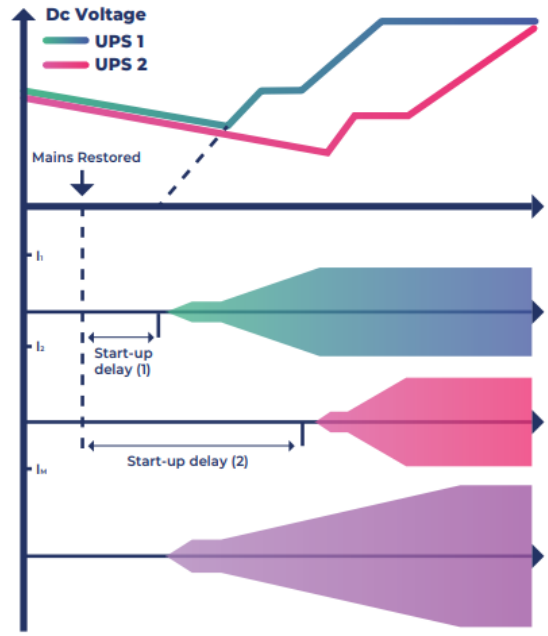
Intelligent Battery Management System

- Thanks to intelligent battery management system increase 35% battery life and maximizes battery performance, life time and reliability through intelligent charging.
- Temperature compensated battery charging monitors performing measurement of external and internal battery temperature and adjusting the charge current rate accordingly. **Intelligent battery management system can sustain battery lifespan and the capacity of battery backed up through the functions of**;
- Monitoring & compensation battery remaining capacity displayed in percentage.
- Overcharge/discharge protection.
- Auto/manual battery test.
- Three charging modes ensure maximum battery availability.
- Constant current charging provides maximum rated current to the battery until the voltage rises to a pre-determined limit.
- A boost voltage is provided for a short term to reduce the battery recharge interval.
- Float charging maintains the battery at the recommend voltage.
- Adjustable battery charging time due to the level of the load to save from energy cost.





Dc voltage and AC current behaviour using the same value for delay time



Dc voltage and AC current behaviour using different value for delay time

High Performance Rectifier Clean Input Performance

- Thanks to the technology used, UPS solves installation problems in systems where the power supply has limited installed power, where the UPS is also powered by a generator or where there are compatibility problems with loads that generate harmonic currents; UPS has zero impact on its power source, being either the mains power supply or a generator. IGBT based rectifier and innovative control algorithm ensures an input Total Harmonic Distortion (THDi) of less than 3% and draws a pure sinusoidal waveform from the mains. This also provides UPS input power factor of >0.99.

Advantages

- Saving in the sizing of upfront equipment e.g. emergency generators, cablings and circuit breakers.
- No disturbances to nearby equipment; eliminate perturbation and outage on upfront electrical equipment, avoiding also any investigation and analysis cost due to malfunction In addition, UPS plays a filter and power factor correction role in the power network upstream of the UPS, as it eliminates harmonic components and the reactive power generated by the powered utilities

Programmable Soft Start

Start up delay function, to restart the rectifiers when mains power is restored if there are several UPS in the system. The programmable soft start allows the rectifier to ramp up in a programmable time period (0-15 seconds) thus eliminating in-rush current.

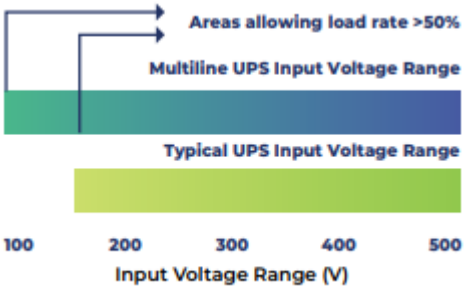
This feature reduces the need of oversizing the input power system (gensets, feeder cables, and over current devices).

Perfect Generator Compatibility

User programmable features such as slew rate, phase angle rate of change and voltage rate of change allow the UPS to quickly sync to a genset during emergency back. Thanks to its robust IGBT rectifier it is enough to choose generator with power only 20% higher rated than the UPS.

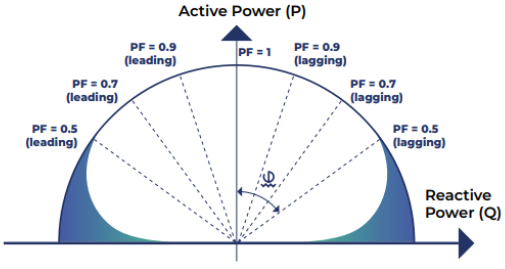
High Grid Adaptability

- 138-485 Vac wide input voltage range to minimize battery use: 485-305 Vac for 100% load; 305-138 Vac for 100%-40% load (derating linearly)
- 6 kV/5 kA lightning protection design, reducing lightning related failure rate.



Output Performance

High Output Power factor 1= Real Power (kW)
Real full power, according to IEC 62040: Output power factor of 1 (kW=kVA) rate provides 25% more active power compared to traditional UPS. Suitable for latest generation of servers (leading or unity power factor) without any reduction in active power from 1 leading to 1 lagging. Suitable also for leading power factor loads down to 0.9 without apparent power derating.



Total Harmonic Distortion (THD)

A distorted output voltage waveform affects the proper function of the load's equipment. The Xtreme T Series has very low output voltage THD, eve with connected 100% unbalanced or 100% non-linear loads.

Transient Response

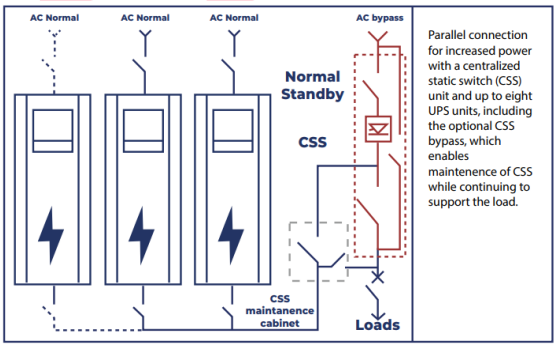
Transient response is very fast due to to control algorithms which reduces the need to oversize the UPS for pulse load applications.

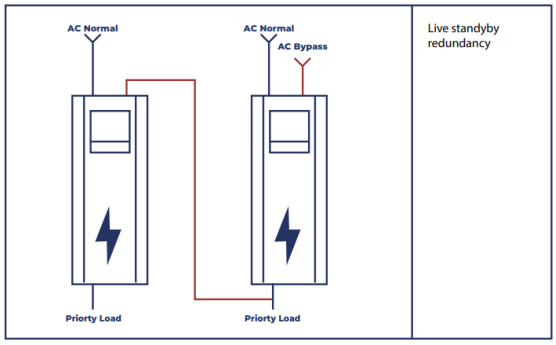
Redundant Parallel Features

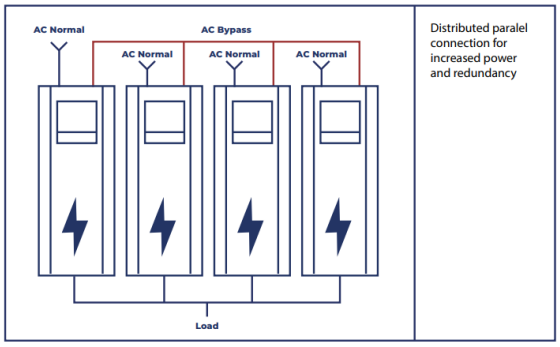
Thanks to unique control technology that can parallel UPS modules with true redundancy by eliminating any single point of failure, RPA provides a scalable paralleling technique that reduces operating footprint and increases system reliability by eliminating the need for external paralleling equipment and cabinets (centralized bypass and master control). One of the UPS modules in the system intelligently takes the leadership role, while the other UPS modules have access to all control parameters. If one UPS fails to operate, the load is automatically redistributed among the others. If the lead UPS fails to operate, then another UPS automatically takes on the leadership role.

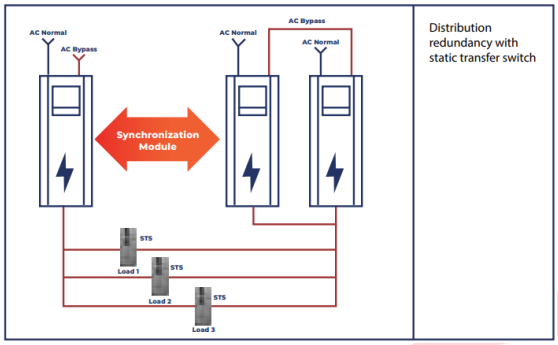
Parallel Operation Features;

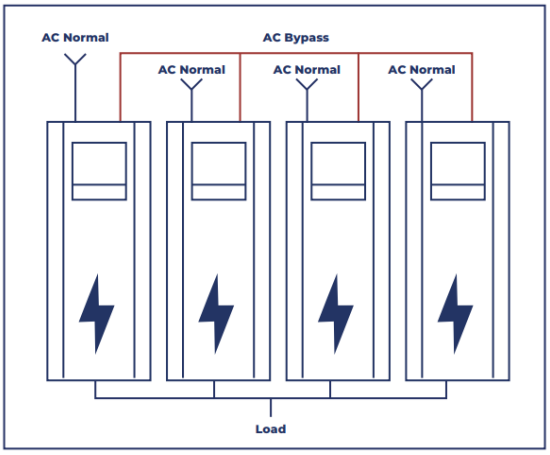
- Parallel connection with ring cable.
- Sequential Soft Start.
- Loop bus connection.
- Distributed Control Logic.
- Autosensing disconnected parallel cable.
- Redundant Communication.
- Easy power update without any interruption.
- Full synchronization of parallel units.
- Isolated parallel operation card.
- Static bypass for all units.
- No Single Points of Failure



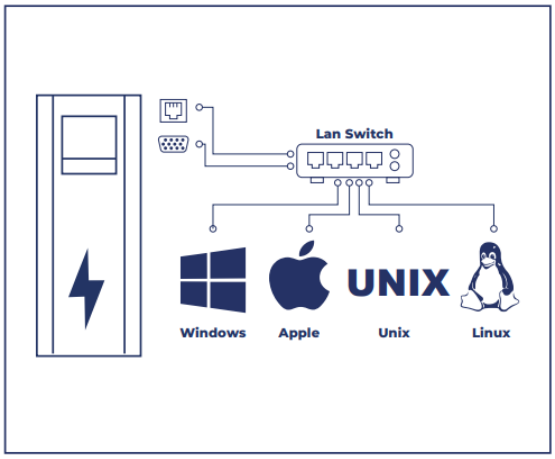


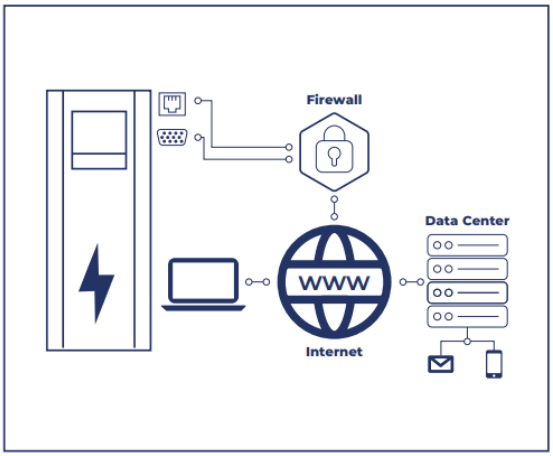






- Environment sensors for Data Centers (Humidity, Temperature, Smoke, etc.)
- GSM, Telnet, GPRS communication
- PC & Server shutdown
- Web page remote monitoring
- Building management system
- E-mail alarm reporting
- Remote monitoring 24/7 technical Service





Self Load Power Test

Only 4% incremental energy consumption. Full power test of Rectifier, Inverter, Bypass, Chokes, Capacitors, Cables and Fuses. Customer load safely supplied through maintenance bypass dummy load free.

Software & Connectivity Solutions

- Local communication with RS232 and RS485
- 2pcs configurable input contact
- Relay board with alarms
- GenSet contact
- EPO contact
- USB
- Remote Monitoring Panel
- Battery Temperature Sensor for Temperature compensated charging
- JBUS, PROFIBUS Local connection
- SNMP IT Manager monitoring

Features

- Three Level Technology
- Output Power Factor 1 (kVA=kW)
- On Line-Double Conversion Technology (Class VFI-SS-111)
- IGBT PWM Rectifier & Inverter Technology
- Multi Processor Digital Control
- High Efficiency
- Higher efficiency with eco-mode (up to 98%)
- Low Input Current THD (≤3%)
- High Input Power Factor (>0.99)
- Low output voltage THD (≤2%)
- Short response time (≤2ms)
- Automatic soft-start
- Cold start
- Dual Input
- Advanced Battery Management
- DC/DC Charger/Booster
- Flexible battery count
- Wide Input Voltage Range
- Variable input low voltage depending on loading percentage (up to -36%)
- Short Circuit, Overload, Lightning and Surge Protection
- Paralellable Modules up to 8 units
- Intelligent redundancy management (n, n+1 and n+x)
- 256 Real Time Event Log with Detailed Parameters
- Static & Manual Bypass Operation
- Small Footprint and Easy Maintenance
- Data analyzing over user interface
- Advanced Communication Capabilities
- Remote monitoring and management software
- Perfect Generator Compatibility
- Programmable dry contacts

Model	EST 3310T	EST 3315T	EST 3320T	EST 3330T	EST 3340T	EST 3360T	EST 3380T
Nominal power (kVA)	10	15	20	30	40	60	80
General							
Technology	Three Level On-Line double conversation VFI-111						
Waveform	Sinusoidal						
Architecture	Stand Alone or Distributed Parallel up to 8 units						
Input							
Input voltage	380, 400, 415 V 3Ph+N+PE						
Input frequency	45-65 Hz						
Voltage Tolerance (%100 load)	(-20)% (+20)%						
Voltage Tolerance (%40 load)	(-36)% (+20)%						
Input Power Factor	>0,99						
Input Current Harmonic**	≤3%						
Output							
Output voltage	380, 400, 415 V 3Ph+N+PE						
Output Voltage Tolerance	+1%						
Overall Efficiency** (AC-AC)	Up to 94% (Half load)						
Crest Factor	3:1						
Ecomode Efficiency	Up to 98,5%						
Nominal Output Frequency	50/ 60Hz +0,01 free run (Adjustable from LCD Panel)						
Output Power Factor	1.0 (0.9 , 0,8 (optional)						
THD of Output Voltage	<2%						
Bypass							
Bypass	Built in Automatic and Maintenance Bypass						
Voltage Tolerance	±10%						
Transfer Time	0 ms						
Overload Capability	150% load 1 minute						
Battery							
Battery Type	VRLA-AGM / GEL / NiCd / Li-ion						
Battery Test	Automatic or Manual						
Battery Charge Time	<6h-8h						
Communication							
LCD Display	Graphical lcd screen, Led bar status						
Communication Ports (Optional)	RS485, Genset, SNMP, GSM Modem, Relay Contacts, Input Contacts, Modbus and USB						
Battery Temperature Sensor Contact	Available						
Emergency Power Off (Epo)	Yes						
Accessories (Optional)	Galvanic Isolation Transformer, Remote Monitoring Panel						
Charger Capacity							
1.0 Model (max)	13A						
0.9 ,0.8 Model (max)	1/4A	4A				13A	
0.9, 0.8 model (with charge card option – max)	4A/13A	13A					
Battery Quantity							
External Cabinet with 4A Charger Option	30-40 pcs (Default 30 pcs)						
External Cabinet with 13A Charger Option	30-46 pcs						
Physical							
Dimensions H x W x D (mm)	800 x 300 x 700		990 x 300 x 850		1200 x 430 x950		1900 x 600 x 800
Net Weight (kg)	148	164	218	241	310	380	452
Environment							
Operating temperature (°C)	0°C – 40°C						
Storage Temperature	-15°C/+ 55°C						
Proposed Temp. To Extend Battery Life	20 – 25°C						
Relative Humidity (%)	< 95% not condensing						
Noise (at 1 meter)	<55 dBA		<58 dBA				<60 dBA
Protection Class	IP 20						
Standard							
Reference Product Standards	EN 62040-1-1 (Safety), EN 62040-2 (EMC), EN 62040-3 (Performance)						

Model	EST33100T	EST33120T	EST33160T	EST33200T	EST33250T	EST33300T
Nominal power (kVA)	100	120	160	200	250	300
General Specs						
Technology	Three Level On-Line double conversation VFI-111					
Waveform	Sinusoidal					
Architecture	Stand Alone or Distributed Parallel up to 8 units					
Input Characteristic						
Input voltage	380, 400, 415 V 3Ph+N+PE					
Input frequency	45-65 Hz					
Voltage Tolerance (%100 load)	(-20)% (+20)%					
Voltage Tolerance (%40 load)	(-36)% (+20)%					
Input Power Factor	>0,99					
Input Current Harmonic*	≤3%					
Output Characteristic						
Output voltage	380, 400, 415 V 3Ph+N+PE					
Output Voltage Tolerance	+1%					
Overall Efficiency* (AC-AC)	Up to 94% (Half load)					
Ecomode Efficiency	Up to 98,5%					
Nominal Output Frequency	50/ 60Hz +0,01 free run (Adjustable from LCD Panel)					
Crest Factor	3:1					
Output Power Factor	1 (U1 model) / 0,9 (U2 model) / 0,8 (U3 model)					
THD of Output Voltage	< 2% (at full linear load)					
Batteries						
Battery Type	VRLA-AGM / GEL / NiCd / Li-ion					
Battery Test	Automatic or Manual					
Battery Recharge Time	<6h-8h					
Bypass Characteristic						
Bypass	Built in Automatic and Maintenance Bypass					
Voltage Tolerance	±10%					
Transfer Time	0 ms					
Overload Capability	150% for 1 minutes					
Communication						
LCD Display	Graphical lcd screen, Led bar status					
Communication Ports (Optionals)	RS485, Genset, SNMP, GSM Modem, Relay Contacts, Input Contacts, Modbus and USB					
Battery Temperature Sensor Contact	Available					
Emergency Power Off (Epo)	Yes					
Accessories (Optional)	Remote Monitoring Panel					
Physical						
Dimensions H x W x D (mm)	1900 x 600 x 970					1900 x 1250 x 1055
Net Weight (kg)	540	598	650	910	1150	1300
Ambient conditions						
Operating temperature (°C)	0°C – 40°C					
Storage Tempature	-15°C/+ 55°C					
Proposed Temp. To Extend Battery Life	20- 25°C					
Relative Humidity (%)	< 95% not condensing					
Noise (at 1 meter)	<62dBA		<65dBA			
Protection Class	IP 20					
Compliance						
Referance Product Standards	EN 62040-1-1 (Safety), EN 62040-2 (EMC), EN 62040-3 (Performance)					

TG Series 3/3, 3/1

Low Frequency Online UPS

10kVA~100kVA

3 Phase input/ 1 Phase output

10kVA~800kVA

3 Phase input / 3 Phase output

Product

The TG series are Low Frequency UPS, which is commonly use in Industrial Power Supply. This Industrial UPS series is a Transformer Based UPS , which adopts Online Double Conversion technology to provide more comprehensive and complete protection for the equipment. Remote monitoring and network management through human-machine dialogue. The system has high system efficiency and complete protection functions.

It adopts the world's most advanced DSP digital control technology. It breaks through the technical bottleneck of the UPS industry, replaces the traditional analog circuit with an advanced digital circuit system, and realizes the parallel redundancy function of multiple UPS. It is an extraordinary innovation of EPI. In the digital circuit mode, the high-speed microcontroller and programmable logic device have more perfect circuit control, parameter setting and operation management, and the self-test and self-detection functions are more powerful.

Application

Data Center, the network computer room, intelligent precision equipment, the financial, telecommunications, insurance, transport, taxation, military, security, enegy, education, government, manufacturing and other industries etc.

Features

- High reliable static switch
- Self diagnose and self protection
- Rechargeable battery intelligent management
- Strong English display interface
- Double transformation is on-line design
- Flexible weaver technology
- System with high efficiency
- Output transformer
- With optional 12 pulse rectifier
- Human-machine dialogue with the remote monitoring and network management
- Allowing 100% to balance working
- Intelligent battery management function to
- Protect the function is all ready
- Sound and light alarm
- A variety of voltage output
- Color optional
- Load protection ability
- Strong adaptability to the environment
- High battery optimize performance
- Network Management
- Energy saving and environmental protection design

160-800kVA

Model	TG3110	TG3115	TG3120	TG3130	TG3140	TG3150	TG3160	TG3180	TG31100
Capacity	10 kVA	15 kVA	20 kVA	30 kVA	40 kVA	50 kVA	60 kVA	80 kVA	100 kVA
Input									
Phase	3 Phase+Neutral+Ground, 380V/400V/415V(L-L voltage)								
Input voltage range	304-456 VAC								
Input frequency range	50/60 Hz ± 5%								
Input PF	> 0.97								
Output									
Rated voltage	220/230 VAC								
Voltage regulation	± 1%								
Rated frequency	50/60 Hz								
Frequency precision	± 5%								
Output PF	0.9								
Output THDu	≤ 2% (linear load); ≤ 3% (non-linear load)								
Crest factor	3 : 1								
Inverter overload	5 min @ 110 – 150% load; 300 ms @ > 150% load								
Battery									
Voltage	360V/372V/384V/396Vdc								
Battery type	Sealed maintenance-free lead- acid batteries								
Charging time	8 – 10 hours recharged to 90%								
Backup time	Depending on the external batteries								
System									
Efficiency	92%					93%			
Protection function	Output short-circuit protection; current-limiting protection								
Transfer time	Normal mode to battery mode, 0 ms								
Display	LCD+LED+Keyboard								
IP Class	IP 20								
Communication interface	RS232, SNMP card (optional)								
Temperature	Operation; 0 – 40 °C, Storage ; -25 – 55 °C								
Relative humidity	0 – 95%, no-condensing								
Altitude	<1500, Within 1500 to 4000m, pwer capacity decreases by 1% per 100m increasing in altitude								
Noise (1 m away)	<55 dB						<68 dB		
Physical									
Weight (kg)	155	240	297	336	352	355	415	468	550
Dimension (W*D*H)mm	720x450x1130			855x450x1230			1000x660x1460		

Model	TG33010	TG33015	TG33020	TG33030	TG33040	TG33060	TG33080	TG33100	TG33120
Capacity	10kVA	15kVA	20kVA	30kVA	40kVA	60kVA	80kVA	100kVA	120kVA
Input									
Phase	3-phase+N+G								
Rated Voltage	380/400/415Vac								
Input Voltage Range	285-475Vac								
Rated Frequency	50/60Hz								
Input Frequency Range	50H±10%, 60Hz±10%								
THDi	＜10%								
Soft Start	1-100%, 5 seconds								
Bypass									
Phase	3-phase+N+G								
Voltage Range	380/400/415Vac ±15%								
Frequency Range	50/60H±10%								
Output									
Rated Voltage	380/400/415Vac								
Voltage Regulation	±1% for balance load; ±3% for unbalance load								
Rated Frequency	50/60Hz								
Frequency Precision	50/60Hz±0.05%（Battery mode)								
Outout PF	0.9								
THDu	＜2% (linear load); ＜4% (non-linear load)								
Crest Factor	03:01								
Dynamic Voltage Transient	＜5% (from 0 to 100% load)								
Transient Recovery Time	＜10ms (±5%)								
Inverter Overload	125% load for 10 mins; 150% load for 1min								
Battery									
Voltage	360Vdc								
Battery Type	Sealed maintenance-free lead-Acid Battery								
Charging Voltage	Float charging: 405Vdc; boost charging: 435Vdc								
Charging Current	1-50A, settable according the battery capacity								
System									
Efficiency	91%								
Protection Function	Output short circuit protection; current-limiting protection								
Transfer Time	Normal mode to battery mode, 0ms								
Display	LCD+LED+Keyboard								
IP Class	IP20								
Communication Interface	RS232, RS485(optional), SNMP Card (optional)								
Temperature	Operation: 0-40 ℃; storage: -25-55 ℃								
Relative Humidity	0-95%, no-condensing								
Altitude	＜1500. Within 1500 to 4000m, power capacity decreases by 1% per 100m increasing in altitude								
Noise (1-meter away)	＜65dB								
Physical									
Weight (kg)	200	250	340	400	480	650	900	1200	1300
Dimension (W*D*H)mm	725*450*1135			855*450*1235		715*855*1500	1100*900*1700		

Model	TG33160	TG33200	TG33250	TG33300	TG33400	TG33500	TG33600	TG33800
Capacity	160 kVA	200 kVA	250 kVA	300 kVA	400 kVA	500 kVA	600 kVA	800 kVA

Input								
Phase	3-phase+N+G					3-phase+G		
Rated voltage	380Vac							
Input voltage range	285 – 475 Vac							
Rated frequency	50/60 Hz							
Input frequency range	50/60 Hz ± 10%							
THDi	< 10%							
Soft start	1 – 100%, 5 seconds					5-600 seconds, settable		
Bypas								
Phase	3-phase+N+G							
Voltage range	380/400/415 Vac ± 15%							
Frequency range	50/60 Hz ± 10%							
Output								
Rated voltage	380/400/415 Vac							
Voltage regulation	± 1% for balance load; ± 3% for unbalance load							
Rated frequency	50/60 Hz							
Frequency precision	50/60Hz±0.05% (battery mode)							
Output PF	0.9							
Output THDu	≤ 2% (linear load); ≤ 4% (non-linear load)					≤ 1% (linear load); ≤ 3% (non-linear load)		
Crest factor	3 : 1							
Dynamic voltage transient	< 5% (from 0 to 100% load)							
Transient recovery time	< 10 ms (± 5%)							
Inverter overload	125% load for 10 mins; 150% load for 1 min							
Battery								
Voltage	360V/372V/384V/396Vdc							480Vdc
Battery type	Sealed maintenance-free lead- acid batteries							
Charging voltage	Float charging: 13.5V/block; Boost charging: 14.5V/block							
Charging current	1- 50A, settable according the battery capacity							
System								
Efficiency	91%					94%		
Protection function	Output short-circuit protection; current-limiting protection							
Transfer time	Normal mode to battery mode, 0 ms							
Display	LCD+LED+Keyboard							
IP Class	IP20							
Communication interface	RS232, RS485(optional), SNMP card (optional)							
Temperature	Operation; 0 – 40 °C, Storage ; -25 – 55 °C							
Relative humidity	0 – 95%, no-condensing							
Altitude	<1500, Within 1500 to 4000m, power capacity decreases by 1% per 100m increasing in altitude							
Noise (1 m away)	<65 dB					71 dB	72 dB	74 dB
Physical								
Weight (kg)	1480	2000	2050	2100	2500	3000	3500	4100
Dimension (W*D*H)mm	1200*1500*1800		1300*1800*1800			2615*855*1900	2865*950*1900	3800*950*1900

HMR+ Series

3-phase in/3-phase out Industrial Modular UPS 20 – 200 kVA

Product

HMR+ series UPS is 3-phase On-line UPS, in which the advanced 3-level inverter & latest DSP-controlled technology are employed. Modular N+X parallel redundancy design ensures the normal operation all the time even though one of power module is in fault. And hot-swappable feature ensure UPS normal operations to the load without interruption during maintenance and replacement with low MTTR (Mean Time To Repair).

Application

Telecommunication control room, IDC center, Computer system, and high precision instruments, etc.

Features

- **High Safety**
  - ➢ By employing TI's DSP control, the processing speed and fault protection become much better.
  - ➢ By using advanced 3-level inverter technology, it has good output wave form and high over-all efficiency.
  - ➢ With cold-start function, the UPS can be started up without AC input.
  - ➢ Because the input power factor is up to 0.999, the energy efficiency can be improved a lots, the grid load becomes lower, and the cost of electricity distribution can be reduced.
  - ➢ Intelligent battery management: it is automatically converting boost or float charge, temperate compensate to avoid over or less charge; adjusted the cut off voltage of discharge according to load capacity, greatly extend life of the battery pack.
  - ➢ With intelligent fan speed control, the fan speed is depended on the load capacity to extend the life of fan.
  - ➢ Under ECO energy-saving mode, the efficiency of UPS system can be more than 99%, suitable for the area of good AC quality.
  - ➢ And it can quickly switch back to inverter mode within 5ms.
  - ➢ Manual bypass design ensures uninterrupted operations during maintenance and the system becomes more reliable.
- **Easy operation**
  - ➢ Each of power modular is independent and no the problem of compatibility. It meets the demand of hot-swappable feature.
  - ➢ 7" touch-screen LCD provides UPS operating data and records of historical events.
- **Multiple Communication Interface**
  - ➢ Inbuilt RS232, RS485, SNMP and multiple input and output dry contact ports.
- Online double conversion technology
- Hot-swappable modules
- Flexible scalability
- Low Mean Time to Repair (MTTR)
- 7" LCD Touchscreen for easy management
- High efficiency, reduce energy losses
- Intelligent speed control and intelligent charger
- Manual bypass design and ECO mode
- Advance UPS design with IGBT and DSP Processor
- Cold start function
- Reliable Communication

Model	HMR+ 124K	HMR+ 204K
Capacity	120KVA/108KW	200KVA/180KW
Input		
Phase	3Φ4W +G	
Voltage Range	380 Vac +25% (or +20% or +15% selectable)	
Frequency Range	50/60 Hz +10% (or 5% selectable)	
Bypass Synchronization	50/60 Hz +5% (or t10% selectable)	
Bypass Voltage Range	+15% (or +10% or +20% selectable) /-20% (or -15% or 30% selectable)	
Input Power Factor	≥ 0.99	
Total Harmonic Distortion (THDi)	Linear Load(full load) ≤ 3% : Non-linear Load(full load) ≤ 5%	
Battery Voltage	± 360Vdc	
Output		
Phase	3Φ4W+G	
Voltage	380 Vac ± 1%	
Frequency (Hz)	Synchronized (AC mode) : 50/60Hz ± 0.2% (Battery mode)	
Total Harmonic Distortion (THDv)	Linear load ≤ 3% + Non-linear load ≤ 6%	
Bypass Inverter Transfer Time	Synchronized <1ms : Asynchronous <20ms	
Efficiency	AC mode ≥94% : Battery mode ≥97%	
Overload Capacity	10 minutes for 125%	
Current Sharing	≤ 5%	
DC Component	<100mV	
Unbalance load Capacity	100% unbalance load	
Environment		
Audible Noise (dB)	<63dB (at 1M)	
Operating Temperature(°C)	0~40°C	
Humidity	<95% (no-condensing)	
Altitude	< 2000M above sea level	
Other		
Display	7 inch touch-screen LCD, LED	
Communication Interface	Dry contact , RS232/RS485 and SNMP	
Dimension(W*D*H)	600*900*1400	600*900*2000
Weight (kgs)	N.W: 345, G.W: 380	N.W: 530, G.W: 570

HM Plus Series

10kVA ~ 800kVA
110/220/348 VDC
Online Double Conversion (VFI)

Product

HM Plus series is a fully intelligent and digital UPS with its output isolation, double online conversion design and it's high speed. It is also designed with excellent compatibility between the IGBT rectifier and phase controlled rectifier, allowing the use to choose between the two to meet the different requirements necessary.
HM Plus series possesses a power factor more than 0.975 after adopting IGBT component's PFC function technology. With the reduction of input harmonic and reactive power loss, it becomes an energy saving UPS with high efficiency. It also incorporates a user-friendly one-touch 7" colour LCD screen control with configurable electrical characteristics to meet the different power supply standards of various countries. Key PCB boards with conforming coating treatment to ensure damp-proof, salt fog proof, mildew proof – thus suitable for any high pollution industrial environment. With excellent overload capacity, adopting five-stage overload protection technology, it is suitable for the most demanding industrial load. It has adopted advanced detection and protection measures and technology prevents the current to flow backwards while common conduction of IGBT components to improve the reliability of the system. Having a high efficiency of up to 0.93 also helps to reduce energy consumption in the UPS.

Features

- Ouput isolated low frequency transformer
- IGBT rectifier module with PFC
- Full bridge IGBT inverter module
- Static bypass components
- Double independent large scale DSP control
- Hardware and software mutual redundancy
- LCD touch screen control
- Three-stage intelligent battery management system
- Strong steel structure for industrial environment
- Intelligent fan rotation rate control redundant device
- Expandable parallel components
- Dry contacts and RS232/RS485 (MODBUS) port

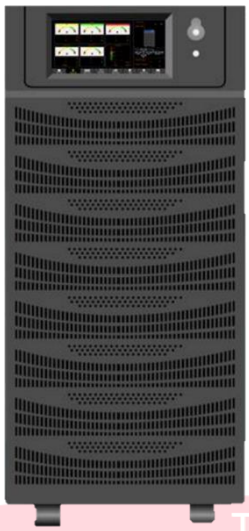
Capacity (kVA)		10	20	30	40	50	60
Recitifier		IGBT rectifier with power factor correction (6-pulse or 12-pulse, phase controlled rectifier)					
Inverter		3-Phase independent full bridge IGBT inverter					
Input							
Voltage		380/400/415/480 VAC 3P3W or 3P4W Other specification required are available					
Voltage Range		± 25%					
Frequency		50/60 Hz, ± 10%					
Power Factor		>0.95					
Output							
Voltage		AC 110/220/230/240/277V, 1P2W AC 380/400/415/480V, 3P3W or 3P4W Other specification required are available					
Voltage Regulation		± 1%					
THD		2% @ Linear load, 5% @ Non-linear load					
Frequency		50/60 Hz, ± 0.1%					
Phase Shift		<0.5°					
Power Factor		0.8					
Overload Capacity		<110%for 60 min,125%for 10 min 150%for 1 min, 200%for 10 sec					
Crest Ratio		3 : 01					
Efficiency (100%)		≥93%					
Battery							
Input Voltage		DC 110/125/220/384V Other specification required are available					
Battery Cold Start		Yes					
Environment							
Ambient Temperature		40°C continuous, 50°C less than 8 hours					
Relative Humidity		< 90% non-condensing Altitude					
Altitude		<1000m above sea level					
Shell Protection Level		IP 20, other IP protection levels required are available					
Audible Noise		<60dB@1 meter					
Physical							
Dimension, W*D*H (mm)		500*800*1800					
Net Weight (kg)		250	280	380	450	520	650
Colour		RAL7035 light grey ultra-violet resistance, or RAL7032					
Partial Standard							
Safety Standard (CE Standard)		EN50091-1					
Electromagnetic Compatibility		EN50091-2					
Emanation & Safety Standard		FCC Class A CE					
EMC/EMI	Conduction	EN50091-2					
	Eradiation	EN50091-2, Class A					
	Harmonics	IEC1000-3-4					
	Interference	EN61000-4-2.3.4.6.8.9.11 Level III, EN61000-4-5 Level IV					
Protection		Short circuit, lightning, EMC filter, isolation					
Communication Interface		Dry contact, RS232, RS485 (MODBUS)					

Capacity (kVA)		80	100	120	160	200	240
Recitifier		IGBT rectifier with power factor correction (6-pulse or 12-pulse, phase controlled rectifier)					
Inverter		3-Phase independent full bridge IGBT inverter					
Input							
Voltage		380/400/415/480 VAC 3P3W or 3P4W Other specification required are available					
Voltage Range		± 25%					
Frequency		50/60 Hz, ± 10%					
Power Factor		>0.95	>0.985			>0.80	
Output							
Voltage		AC 110/220/230/240/277V, 1P2W AC 380/400/415/480V, 3P3W or 3P4W Other specification required are available					
Voltage Regulation		± 1%					
THD		2% @ Linear load, 5% @ Non-linear load					
Frequency		50/60 Hz, ± 0.1%					
Phase Shift		<0.5°					
Power Factor		0.8					
Overload Capacity		<110%for 60 min,125%for 10 min 150%for 1 min, 200%for 10 sec					
Crest Ratio		3 : 01					
Efficiency (100%)		≥93%					
Battery							
Input Voltage		DC 110/125/220/384V Other specification required are available					
Battery Cold Start		Yes					
Environment							
Ambient Temperature		40°C continuous, 50°C less than 8 hours					
Relative Humidity		< 90% non-condensing Altitude					
Altitude		<1000m above sea level					
Shell Protection Level		IP 20, other IP protection levels required are available					
Audible Noise		<60dB@1 meter			<65dB@1 meter		
Physical							
Dimension, W*D*H (mm)		1100*800*1800				1600*800*1800	
Net Weight (kg)		780	910	1180	1340	2200	2550
Colour		RAL7035 light grey ultra-violet resistance, or RAL7032					
Partial Standard							
Safety Standard (CE Standard)		EN50091-1					
Electromagnetic Compatibility		EN50091-2					
Emanation & Safety Standard		FCC Class A CE					
EMC/EMI	Conduction	EN50091-2					
	Eradiation	EN50091-2, Class A					
	Harmonics	IEC1000-3-4					
	Interference	EN61000-4-2.3.4.6.8.9.11 Level III, EN61000-4-5 Level IV					
Protection		Short circuit, lightning, EMC filter, isolation					
Communication Interface		Dry contact, RS232, RS485 (MODBUS)					

Capacity (kVA)		300	320	400	500	600	800
Recitifier		IGBT rectifier with power factor correction (6-pulse or 12-pulse, phase controlled rectifier)					
Inverter		3-Phase independent full bridge IGBT inverter					
Input							
Voltage		380/400/415/480 VAC 3P3W or 3P4W Other specification required are available					
Voltage Range		± 25%					
Frequency		50/60 Hz, ± 10%					
Power Factor		>0.80					
Output							
Voltage		AC 110/220/230/240/277V, 1P2W AC 380/400/415/480V, 3P3W or 3P4W Other specification required are available					
Voltage Regulation		± 1%					
THD		2% @ Linear load, 5% @ Non-linear load					
Frequency		50/60 Hz, ± 0.1%					
Phase Shift		<0.5°					
Power Factor		0.8					
Overload Capacity		<110%for 60 min,125%for 10 min 150%for 1 min, 200%for 10 sec					
Crest Ratio		3 : 01					
Efficiency (100%)		≥93%					
Battery							
Input Voltage		DC 110/125/220/384V Other specification required are available					
Battery Cold Start		Yes					
Environment							
Ambient Temperature		40°C continuous, 50°C less than 8 hours					
Relative Humidity		< 90% non-condensing Altitude					
Altitude		<1000m above sea level					
Shell Protection Level		IP 20, other IP protection levels required are available					
Audible Noise		<65dB@1 meter					
Physical							
Dimension, W*D*H (mm)		1600*800*1800	2200*800*1800		3300*800*1800		4400*800*1800
Net Weight (kg)		2860	2950	3300	4200	4750	5950
Colour		RAL7035 light grey ultra-violet resistance, or RAL7032					
Partial Standard							
Safety Standard (CE Standard)		EN50091-1					
Electromagnetic Compatibility		EN50091-2					
Emanation & Safety Standard		FCC Class A CE					
EMC/EMI	Conduction	EN50091-2					
	Eradiation	EN50091-2, Class A					
	Harmonics	IEC1000-3-4					
	Interference	EN61000-4-2.3.4.6.8.9.11 Level III, EN61000-4-5 Level IV					
Protection		Short circuit, lightning, EMC filter, isolation					
Communication Interface		Dry contact, RS232, RS485 (MODBUS)					

MTR-SM

Online Modular UPS
5 – 20kVA (220V/230V/240V)
In-built Hot Swappable Battery



1:1 PHASE

3:1 PHASE

Product

RM20/5E series are modular online UPS with hot-swappable battery. The single cabinet power rating from 5kVA to 20kVA, with its flexible configuration of 3/1 and 1/1, compact structure, is the ideal choice for small data center, as well as for sensitive electronics, convenient to be integrated with server. With its high power factor and excellent overload capability, RM3120/05D improving the efficiency of power utilization and ensure system operating steady.

The function of the product is the same as that of the general UPS, that is, the mains power is converted twice and then output pure sine wave power supply to the load , When the utility power is abnormal, the UPS ensures the uninterrupted power supply of the load by transferring the power supply to the battery. The whole product is a complete tower-type modular UPS system, which supports parallel connection of multiple units and improves the reliability of power supply. This modular UPS product is mainly aimed at small and medium-sized server rooms.

Power Modules

Hot swappable power module 5kVA in 2U height make it easier to maintenance, installation, and power expansion. The single cabinet contains 1 to 6 power modules, it has 2 redundant module when plug in 6 modules. The system has high scalability. 3 units in parallel which can be configured from 20kVA to 60kVA.

Power Module

Battery Modules

The cabinet of RM20/05D contains 10 battery modules which can provide longer backup time. With new technology, common battery pack is available for single phase in and single phase out modular UPS, improving the reliability of power supply.

5. Parallel up to 2 extra battery cabinet, each has 9 groups battery modules.
6. Real-time data display, the voltage, current, temperature, etc. of each module will be displayed on LCD screen, giving customers a view of inner status.
7. Comprehensive monitoring for thermal abnormal detection, each module is equipped with temperature, operation status and fuse status detection function.
8. Each battery module has 6 cells in series with a battery voltage of 72V, two battery modules in series with a voltage of 144V, the battery module has no N wire, only BAT+ and BAT-.

6pcs 12V 9Ah batteries

Charger Modules

This series can be compatible with the smart charging module which is designed for large current charging application where long backup time is required. It can

provide additional current for batteries to form a systematic solution of power supply.

9. Parallel Appearance consistency, charging module is consistent with the appearance and size of power module.
10. Each charging module can provide a maximum of 10A charging current, while each power module can offer up to 1.8A, both of them are adjustable flexibility, to meet various requirements of customer.
11. Compatible with the RM20/05E series, easy for the UPS to expand charging capacity.

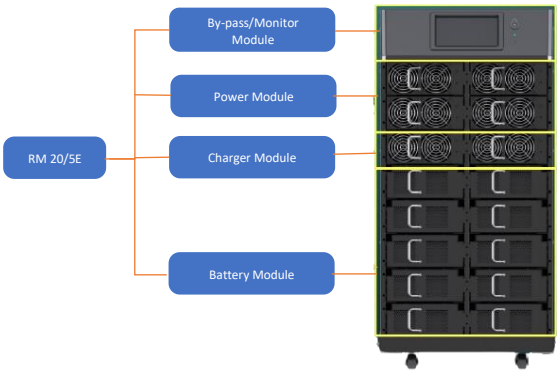
Charger Module

Fake three-phase PFC rectifier—3/1

The “Fake Three-Phase PFC Rectifier” differs from the “True Three-Phase PFC Rectifier” , it has only one IGBT three phase input AC voltage pass through DIODE/SCR rectifier. It is then boosted by PFC to a DC bus voltage The power factor of each phase is only up to 0.95. In comparison, the “fake three-phase PFC rectifier” uses fewer components and is less expensive, but it also results in THDI and input PF values not being very high.

Battery module temperature detection

- The battery module detection function of temperature, fuse and current which can monitor the status of battery more comprehensively.
- Temperature detection: The ADC will sample the temperature information and sent to the monitoring processor, and the monitor processes the information and displays the temperature information on the LCD screen
- Battery fuse detection:
- The information detected by the battery fuse is also sent to the monitoring processor, if the fuse is damaged, UPS will alarm. If it is normal, it will display “Battery is normal”
- The monitor will determine the battery status based on temperature, fuse and voltage data.



Features

- High efficiency, more than 94.5%
- Modular design with swappable power module and battery
- Rack modular design, compatible with 19” standard rack cabinet, convenient to be integrated with server
- Flexible configuration, support 3 parallel unit, based on 5kVA can be configured to 3/1 and 1/1 without derating
- Easy for power expansion and backup time expansion
- Friendly interface with 7” touch color LCD with graphic display, more information displayed and easier to operate
- Intelligent protection and monitoring technology for safe and reliable battery package of the system
- Complete solution for the small data room center
- Scalability allows for the cost-effectively addition of power capacity or battery modules as needed

Model	RM20/05E			
Sytem Capacity	20kVA/20kW			
Power Module	PM5 (5kVA/5kW)			
Input				
Phase	3Phase+Neutral+Ground, 380V/400V/415V (line to line) 220V/230V /240V (line to neutral)			
Input Voltage Range	277~478Vac (line-line),full load; 147~277Vac (line-line), load decreases linearly from 100%~50%			
Rate Frequency	50/60Hz			
Input Frequency Range	40~70Hz			
Input PF	> 0.99			
Input THDi	< 5% (100%Linear load)			
Bypass				
Rate Voltage	380V/400V/415V, line to line			
Rate Frequency	50/60Hz			
Input Voltage Range	settable, default -20%〜+15% upper limit: +25%; lower limit: -40%			
Bypass Frequency Range	settable,±1Hz, ±3Hz, ±5Hz			
Bypass Overload Capabiltiy	125%, long time operation, 125%< load <130%, last for 5 minutes 130%<load<150%, last for 1 minute, >150%, last for 200ms			
Output				
Rate Voltage	220V/230V/240V, line to neutral			
Voltage Precision	±2%			
Rate Frequency	50/60Hz±0.01%			
Output PF	1			
Output THDu	<1% linear load, <5% non-linear load (IEC/EN62040-3)			
Inverter Overload	Normal	<110% for 1 hour; 110%~130% for 10 minutes; 130%~150% for 1 minutes; >150% for 200ms		
	Battery	<110% for 10 minutes; 110%~125% for 1 minute; 125%~130% for 10s; >130% for 200ms		
Synchronization Range	settable,±0.5Hz/s~±5Hz/s, default ±3Hz/s			
Synchronization Rate	settable,0.5Hz/s~3Hz/s, default 0.5Hz/s			
Output Dynamic Response	<5% (20%-80%-20% step load)			
Dynamic Recovery Time	<20ms (0%-100%-0% step load)			
Battery				
Voltage	144VDC(12pcs)			
Charge Power	0~1.8A settable(each module)			
Charger Voltage Precision	1%			
System				
Efficiency	AC Mode: >94.5%; ECO Mode: >98%; Battery Mode: >90%			
Display	LCD+LED, 7" touch color screen and keyboard			
IP Class	IP 20			
Interface	Standard: RS232,RS485,USB, Dry contacts			
Option	SNMP card, AS400 card, parallel kits, SPD, dust filter,LBS			
Temperature	Operation: 0-40℃ Storge: -40~70℃			
Relative Humidity	0-95% Non-comdensing			
Altitude	<1000m, Load derated 1% per 100m From 1000~2000m			
Noise(dB)	55dB @100% load			
Applicable Standard	Safety: IEC/EN 62040-1 EMC: IEC/EN 62040-2 PERFORMANCE: IEC/EN 62040-3			
Physical				
			RM3120	Battery
Weight (Kg)	Cabinet :		66.5	67.3
	Module :		7.5	17.8
Dimension(W*D*H)(mm)	Cabinet :		443*695*928	
	Module :		200*431*84.5	200*516*84.5

MTR-RB

Modular Online UPS

In-built Hot Swappable Battery

20-60kVa (380V/400V/415V)

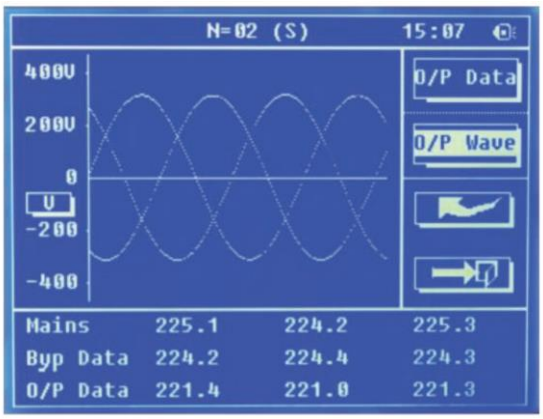
Product

MTR-RM series is modular online UPS for sensitive equipments. The single cabinet power rating covers from 10KVA to 200KVA which delivers the best of combination of reliability, hot-swappable and flexibility. With the latest IGBT three-level technology and DSP control, MTR-RM achieves a high input power factor, low THD and high system efficiency, which make it a great choice for data centers, computer systems and critical equipments.

RM 060/20B series is modular online UPS with hot-swappable battery. The single cabinet power rating covers from 20kVA to 60kVA which delivers the best of combination of reliability, hot-swappable and flexibility. With intelligent battery protection and management technology, RM060/20B realized a compact total power solution which is easy for installation and maintenance.

Features

- Modular design with swappable battery package
- Monitor system for battery
- Integrated IGBT module with improved performance and reduced size
- Easy for installation and maintenance
- Easy for power expansion and backup time expansion.
- Intelligent protection technology for safe and reliable hot swappable battery package of the system
- Smart charging management system, Intelligently control the whole process of the charging and discharging
- Effectively improve the life time of the battery
- Battery cold start, UPS can be powered on from the battery without utility.
- Friendly human machine interface with touch screen



Model		RM060/20B
Capacity		60kVA / 54kW
Power module type		PM20 (20kVA / 18kW)
Input		
Phase		3 Ph + Neutral + Ground, 380V/ 400V / 415V (line to line)
Voltage range		+20% - 25%
Frequency range		40Hz - 70Hz
Power factor		>0.99
THDi		THDi<3%@100%linear load
Output		
Voltage regulation		±1% (Balance load); ±1.5% (Unbalance load)
THDu		THD<1.5%(linear load),THD<5%(None linear load)
Power Factor		0.9
Crest ratio		3 : 1
Overload capacity		110% for 1 hour; 125% for 10 minutes ;150% for 1 minute; >150% for 200m
Battery		
Voltage		±240VDC
Charge power		20% * System Power
Charge power precision		±1%
System		
System efficiency		Normal mode : 95%; ECO mode : 98%;
		Battery mode : 95%
Display		LCD+LED, Touch Screen + Keyboard
IP class		IP20
Interface (Communication port)		Standard : RS232, RS485, Dry contacts; Optional : SNMP
Installation/Connection		Top or bottom cable connection
Operation/Storage temperature		0 - 40°C / -40 - 70°C
Relative humidity		0 - 95% (non-condensing)
Noise (1 meter away)		≤ 55dB
Physical		
Weight	Cabinet	205Kg;
	Power module	PM20 : 22Kg
	Battery package	10kg (without battery)
Dimension (W*D*H) (mm)	Cabinet	600*1020*2000
	Power module	PM20 : 440*590*134
	Battery package	120*824*177

MTR-RM

Modular Online UPS

10~90kVA (380V/400V/415)
10~90kVA (220V/230V/240V)

Product

The rack modular, scalable, hot-swappable, online double conversion UPS ranging from 10 to 90kVA, with its flexible configuration of 3/3, 3/1 and 1/1, compact structure, is the ideal choice for small and medium data center.

Features

- **Rack design**
  Modular design, compatible with 19" standard rack cabinet, convenient to integrated with servers
- **Flexible configuration**
  The system can be configured to 1/1 and 3/1 without de-rating or hardware changing
- **High power density**
  10/15KVA power module in 2U height Saving great amount of space, easy for capacity expansion
- **Friendly interface**
  7" touch color LCD with graphic display, more information displayed for customer easier for customer to operate
- **Integrated solution for data center**
  UPS can integrate with battery cabinet and PDU, offering excellent choice for data center
- **Smart sleep function**
  System can intelligently shut down some power modules to increase total load rate, achieving higher efficiency
- **Intelligent charging management**
  The system intelligently control the whole process of the charging and discharging, effectively improve shelf life time of the battery
- **Self-aging mode**
  Energy internal circle technology, system can run with full load, assuming less than 10% energy

Model		RM060/10X	RM040/10X	RM030/10X	RM020/10X	RM090/15X	RM045/15X	RM030/15X
Capacity		60kVA/60kW	40kVA/40kW	30kVA/30kW	20kVA/20kW	90kVA/90kW	45kVA/45kW	30kVA/30kW
Power module		PM10X (10kVA/10kW)				PM15X (15kVA/15kW)		
Input								
Phase		3P+ N + G (380/400/415V)						
Voltage range		304-478Vac (line-line),100% load; 228-304Vac, load de-rated linearly						
Frequency range		40Hz-70Hz						
Power factor		>0.99						
THDi		THDi<4%@100%linear load						
Output								
Voltage		3 phase : 380/400/415V 1 phase : 220/230/240V						
Voltage regulation		1.5%						
Power Factor		1						
THDu		THD<1%(linear load),THD<5.5%(non-linear load)						
Crest factor		3 : 1						
Overload capability		110% for 1 hour; 125% for 10 min; 150% for 1 min; >150% for 200 ms						
Battery								
Voltage		±240VDC						
Charge Power		20% * System Power						
Charge voltage precision		±1%						
Physical								
Weight	Cabinet	85kg	51kg	55kg	42kg	85kg	55kg	42kg
	Power Module	15.3kg				15.5kg		
Dimension (W*D*H) (mm)	Cabinet	485*751*1033 (21U)	485*697*575 (11U)	485*751*575 (11U)	485*697*398 (7U)	485*751*1033 (21U)	485*751*575 (11U)	485*697*398 (7U)
	Power Module	436*590*85 (2U)						

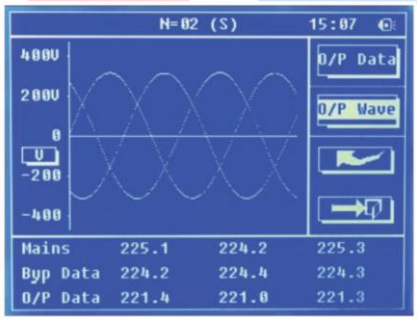
MTR-RM

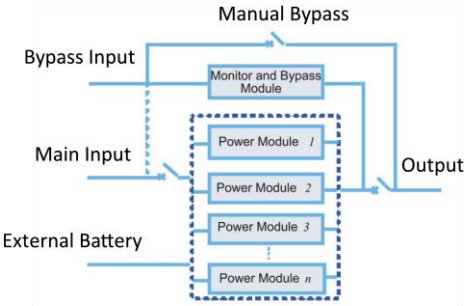
Modular Online UPS

20-200kVa
(380V/400V/415V)

Product

MTR-RM series is modular online UPS for sensitive equipments. The single cabinet power rating covers from 20KVA to 200KVA which delivers the best of combination of reliability, hot-swappable and flexibility. With the latest IGBT three-level technology and DSP control, MTR-RM achieves a high input power factor, low THD and high system efficiency, which make it a great choice for data centers, computer systems and critical equipments.





Features

- **Modular design**
  Up to 20 power module in parallel Online hot-swappable N+X redundancy
- **High power density**
  200kVA with footprints of about 0.5m^2 saving valuable data center space
- **Independent charger**
  Independent charger for each module Intelligently control the whole charging process with prolong the life time of the battery Integrated IGBT design in one module, less failure points with higher performance and reliability
- **Battery cold start**
  UPS can be powered on from the battery without utility
- **Friendly interface**
  Touch LCD display with abundant information
- **Totally front access**
  Top and bottom cable entry connection are supported, more convenient for site installation
- **Maintenance reminder**
  System can record the running time for critical components and set reminding time for replacement
- **Modular design with transformer**
  Modular UPS up to 60kVA with built-in isolation transformer, meeting different requirement for customers

Model		RM200/20	RM120/20	RM060/20	RM060/20-TX (In-built transformer)
Power module type		PM 20(20kVA)			
Input					
Phase		3 Phase+ Neutral + Ground,380V/400V/415V (line to line)			
Voltage range		304-478Vac (Line-Line),full load; 228V-304Vac (Line-Line), load decrease linearly according to the min phase voltage			
Frequency range		40Hz-70Hz			
Power factor		>0.99			
THDi		THDi<3%@100%linear load			
Output					
Voltage		380V/400V/415V			
Voltage regulation		1.50%			
Power Factor		0.9			0.8
THDu		THD <1.5% (linear load), THD <5% (None linear load)			
Crest ratio		3 : 1			
Overload capability		110% for 1 hour; 125% for 10 minutes ;150% for1 minute; >150% for 200ms			
Battery					
Voltage		±240VDC			
Charge power		20%*System Power			
Charge voltage precision		±1%			
System					
System efficiency		Normal mode: 95% ; ECO mode: 99% ; Battery mode: 95%			
Display		LCD+LED, Touch Screen +Keyboard			
IP Class		IP20			
Interface		Standard : RS232, RS485, Dry contacts; Optional : SNMP0			
Operation/Storage temperature		0 - 40°C / -40 - 70°C			
Relative humidity		0 - 95% (non-condensing)			
Noise		55dB @ (1 meter away)			
Physical					
Weight	Cabinet	179kg	145kg	105kg	400kg
	Power module	22kg			
Dimension (WxDxH)	Cabinet	600*900*2000(mm)	600*900*1600(mm)	600*900*1100(mm)	600*900*1600(mm)
	Power module	440*590*134			

MTR-RM

Modular Online UPS

25-600kVA (25 & 30 kVA module)
(380V/400V/415V)

Product

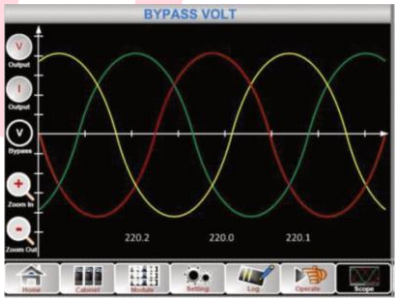
The RM series modular UPS provides the most compact footprint of less than 2m² with maximum capacity of 900kVA. With best reliability and high performance, it has been leading the domestic market for years. RM series is considered to be the best power protection solution for large data centers, as well as for sensitive electronics.

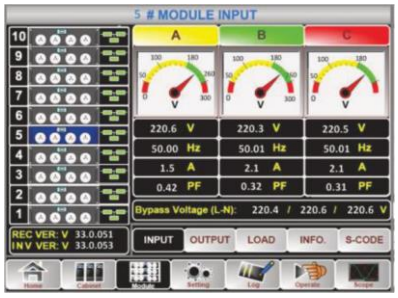
Independent LCD for each Power Module

Each Power Module has independent LCD, give users' direct overview of status data and alarm in real time.

Friendly Interface

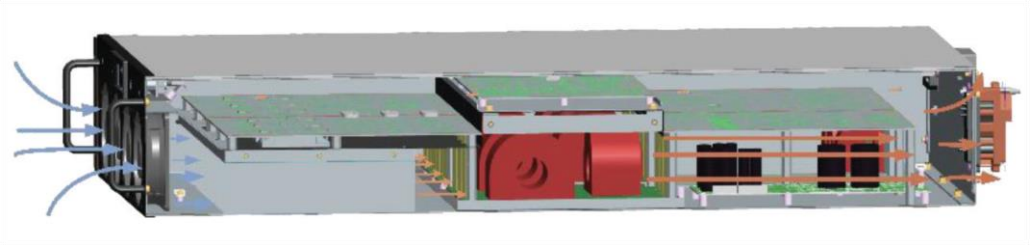
10.4" LCD Touch Screen Display Provides graphical and text based information of alarms, status data, instructions that users can have more friendly and safer operation.





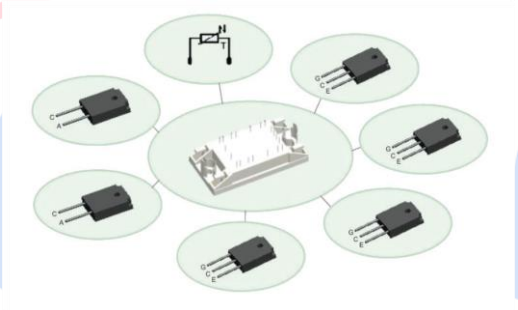
Isolated Air Flow

The hot-swappable power modules take unique structure design. In the design, PCB boards and heat-sinks are in two completely different layers, cooling air flows in the lower layer, while keeping the upper PCBs free of dust, which allows the UPS run in dusty environments, significantly improving its stability and environmental adaptability.



Unique Design for High Reliability

Modular IGBT and SCR design, one modular IGBT or SCR equals many discrete IGBT and SCR components, bringing in extremely high reliability. All components in one module, less fault points, higher reliability. All components integrated as one modular design, smaller disparity. Less space needed, UPS with compact design and higher power design. Integrated inner thermal sensor, can display the inner temperature directly.

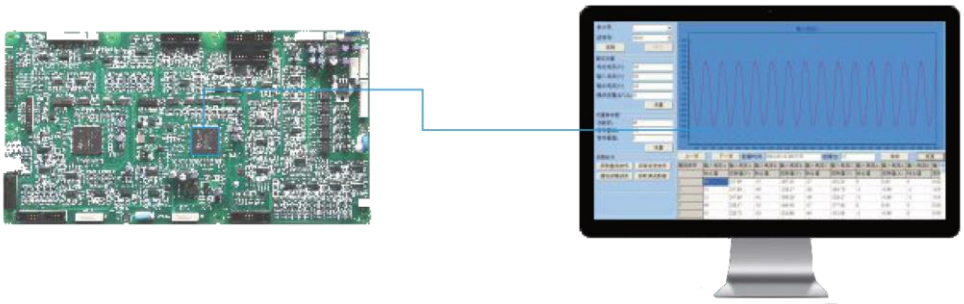


High Density, Modular Scalable

High power density footprint for 300kVA is 0.66m², power density 400KW/m2, saving valuable data center space. Scalable from 30kVA to 900kVA (27kW to 810kW) , max 30 power modules in parallel. Inherently N+X redundant Hot swappable power module and bypass & monitoring module. Additional charging module, extra charging current 50A*N for long time back up application.

Critical Waveform Recording

UPS can record and save the data of the main parameters automatically when faults happen and can be used for further analysis. Can record data information and present as waveform for further analysis. Can easily spot the causes of the failures, avoid future similar faults.

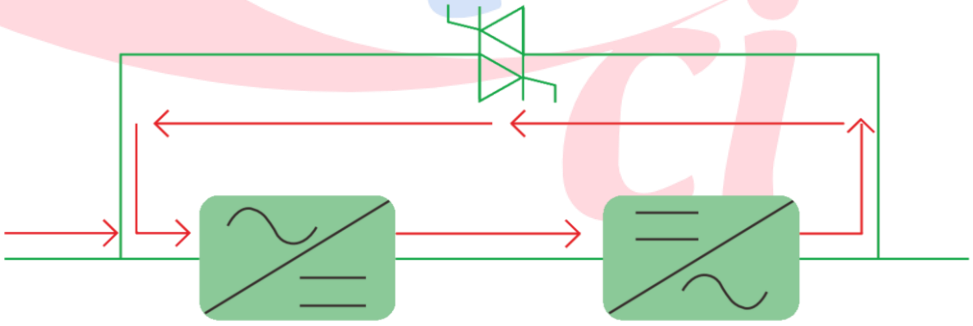


Smart Sleep

Smart Sleep function can intelligently make some power modules go to sleep, when load is relatively low, improving the total system efficiency and saving customers on power and cooling costs. Improving efficiency, reducing power and cooling costs. Easy setting with just two steps. Customer can sleep mode and rotation period. Power modules working in rotation, prolong the life time.

Self-aging

Self-aging is an advanced function applied in all three phase UPS, Self-aging function can test UPS under different load situation without real load, saving more than 90% of energy. Simulate different load conditions without connecting to any real load, saving 90% of energy. Available in both single and dual inputs connection. On site setting supported, easy for factory testing.



Programmable Dry Control

Programmable dry contacts are available in all RM and MST-Pro series UPS. Customers can easily expand or modify the definition of each pin. Abundant options with three inputs and four output, all programmable. Easy setting, just pull the -down menu and set. Compatible with all the RM and MST-Pro.

Model		RM600/30X	RM300/30X	RM180/30X	RM500/25X	RM250/25X	RM150/25X
Capacity		600kVA	300kVA	180kVA	500kVA	250kVA	150kVA
		540kW	270kW	162kW	500kW	250kW	150kW
Power Module		PM30X(30kVA/27kW)			PM25X(25kVA/25kW)		
Input							
Phase		3 Phase+ Neutral + Ground,380V/400V/415V (line to line)					
Voltage range		304-478Vac (Line-Line) full load; 228V-304Vac (Line-Line), load decrease linearly according to the min phase voltage					
Frequency range		40Hz-70Hz					
Power factor		>0.99					
THDi		THDi<3%@100%linear load					
Output							
Voltage		380V/400V/415V					
Voltage regulation		1.50%					
Power Factor		0.9			1		
THDu		THD <1.5% (linear load), THD <5% (None linear load)					
Crest ratio		3 : 1					
Overload capability		110% for 1 hour; 125% for 10 minutes ;150% for1 minute; >150% for 200ms					
Battery							
Voltage		±240VDC					
Charge Power Precision		±1%					
Charge Power		20%*System Power					
System							
System Efficiency		Normal mode : 95%; ECO mode: 99%; Battery mode : 95%					
Display		10.4” color touch screen LCD + LED + Keyboard					
IP Class		IP20					
Interface		Standard : RS232, RS485, Dry contacts, USB; Optional : SNMP, Expansion dry contact card					
Operation/Storage Temperature		0-40°C / -40-70°C					
Relative Humidity		0-95% (non-condensing)					
Noise		72dB @ 100% load, 68dB @ 45% load (1 meter away)	65dB @ 100% load, 62dB @ 45% load (1 meter away)		72dB @ 100% load, 68dB @ 45% load (1 meter away)	65dB @ 100% load, 62dB @ 45% load (1 meter away)	
Physical							
Dimension (WxDxH)	Cabinet	2000*1050*2000 (mm)	600*1100*2000 (mm)	600*1100*1600 (mm)	2000*1050*2000 (mm)	600*1100*2000 (mm)	600*1100*1600 (mm)
	Power module	PM30X / PM25X : 460*790*134 (mm)					
Weight	Cabinet	660kg	220kg	165kg	660kg	220kg	165kg
	Power module	PM30X : 34kg			PM25X : 32kg		

MTR-RM

Modular Online UPS

40-500kVA
(380V/400V/415V)

Product

The RM series modular, online UPS ranging from 40kVA to 500kVA is designed to protect any critical load for medium and large data center achieving maximum availability. The RM series feature the latest technology of 3-level technology and PFC input control, which guarantees high efficiency of 96% and ultra-reliability. Its compact design ensures power density of 500kVA in one cabinet, 3 units can be paralleled for capacity or redundancy up to 1500kVA, making it an excellent choice for medium and large facilities.

Features

- **Compact design**
  500kVA in one cabinet, footprint less than 1.45m² saving valuable room space
- **High power density**
  50kVA power module in 4U height, easy for capacity expansion
- **High efficiency**
  Advanced 3-level technology guarantees high efficiency operating in double conversion mode up to 96%
- **Intelligent charging management**
  The system intelligently control the whole process of the charging and discharging, effectively improve the life time of the battery
- **High scalability**
  The system can be configured from 40kVA to 500kVA in one single cabinet, 3 units in parallel for a capacity up to 1500kVA
- **Friendly HMI**
  10.4" touch color LCD with graphic display, independent LCD for each power module
- **Smart sleep function**
  System can intelligently shut down some power modules to increase total load rate, achieving higher efficiency
- **Multi communication interface**
  Provide RS232, RS485, USB, SNMP, AS400 and programmable dry contacts

Model		RM100/ 50X	RM200/ 50X	RM300/ 50X	RM500/ 50X	RM80 /40X	RM1600/ 40X	RM240/ 40X	RM400/ 40X
Capacity		100kVA/ 100kW	200kVA/ 200kW	300kVA/ 300kW	500kVA/ 500kW	80kVA/ 80kW	160kVA/ 160kW	240kVA/ 240kW	400kVA/ 400kW
Power Module		PM50X (50kVA/45kW)				PM40X (40kVA/40kW)			
Input									
Grid System		3 Phases + Neutral + Ground (frame)							
Rated Input Voltage		380/400/415VAC (Line-Line)							
Rated Frequency		50/60Hz							
Input Voltage Range		304~478Vac (Line-Line),full load 228V~304Vac (Line-Line),load decrease linearly according to the min phase voltage							
Input Frequency Range		40Hz ~ 70Hz							
Input Power Factor		>0.99							
Input Current THDi		<3%(full Linear Load)							
Bypass Input									
Rated Bypass Voltage		380/400/415VAC (Line-Line)							
Rated Frequency		50/60Hz							
Bypass Voltage Range		Selectable, default -20% ~ +15% Up limited : +10%, +15%, +20%, +25% Down limited : -10%, -15%, -20%, -30%, -40%							
Bypass Frequency Range		Selectable, ±1Hz, ±3Hz, ±5Hz							
Output									
Rated Inverter Voltage		380/400/415VAC (Line-Line)							
Rated Frequency		50/60Hz							
Output Power Factor		1				1			
Voltage precision		±2%							
Transient Respons		<5%for step load (20%- 80%-20%)							
Transient recovery		<30msfor step load (0%- 100%-0%)							
Output Voltage THDu		<1.5%from 0%to 100%linear load <5.5%full non-linear load according to IEC/EN62040-3							
Inverter Overload		<110%, 60min; 110%~125%,10min; 125%~150%,1min; >150%, 200ms							
Frequency Regulation		50 / 60Hz ±0.1%							
Synchronized Range		Settable, ±0.5Hz ~ ±5Hz, default ±3Hz							
Synchronized Slew Rate		Settable, 0.5Hz/S ~ 3Hz/S, default 0.5Hz/S							
Battery and Charger									
Battery Rate Voltage		±240VDC							
Charger Voltage precision		1%							
Charger Power		max=20%							
Efficiency									
Normal Operation		>96%							
Battery Operation		>96%							
System									
Display		LCD + LED + Touch screen							
Environment									
Operation Temperature		0°C ~ 40°C							
Storage Temperature		-40°C ~ 70°C							
Relative Humidity		0 ~ 95%							
Non-condencing Noise (1 meter)		65dB @ 100% load, 62dB @ 45% load Non-condencing							
Altitude		<1000m, Load derated 1%per 100m From 1000 ~ 2000m							
Physical									
Dimension (WxDxH) cm	Cabinet	60*98*115	65*96*160	65*96*200	130*110*200	60*98*115	65*96*160	65*96*200	130*110*200
	Power module	51*70*17.8							
Weight	Cabinet	120	170	220	450	120	170	220	450
	Power module	45							

Automatic Transfer Switch (ATS) 16A & 30A

Product

This ATS product is designed with two independent power inlets to supply power to load from a primary power source. Should primary power source fail, the secondary will automatically back up the connected equipment without any interruption. The transfer time from one line to another is seamless to the connected equipment. After switching to a secondary power source, the ATS can also switch power back to the primary input when power to the primary input is restored.

ASSURANCE AGAINST LOAD FAULTS

If one of the loads fails (for example a short-circuit), ATS disengages the group of sockets where the load is associated, thus preventing other loads from being turned off.

ASSURANCE AGAINST POWER SUPPLY FAULTS

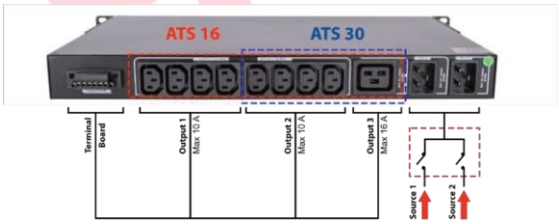
In the event that one of the two input sources falls outside tolerance levels, ATS will move the load to the subsequent input source (switching is instantaneous if the two sources are in phase). EPI ATS change power with no effect on IT hardware. Regular power supply will work within 20ms after AC voltage drops to zero. The exchanging time incorporates the ideal opportunity for the inherent knowledge to decide if the voltage and frequency are in range. Any point of failure in the electronics does not cause a drop out of the output voltage because the unit incorporates redundancy of its electronic circuitry to avoid fault tolerance.

WORKING PRINCIPLE

ATS gives direct distribution of eight 10A IEC yields or one 16A IEC output in the 16 A model, four 10A IEC outputs one 16A IEC output or a terminal board in the 30 A model in a framework with two input power lines (two main sources, or two UPS). ATS can interface with both of the two input power lines, while at the same time checking the power uptake.

Features

- 16A, 30A max. input current
- Powered by two separately independent power sources
- Dual power supply for redundancy
- Provides seamless power switch for IT equipment
- Preferred source selection on front panel
- Highly reliability 19" rack design (1U) to fit into a diverse working environment
- Built-in USB and RS-232 communications



Model	ATS-16A	ATS-30A
TOPOLOGY	Relay	Relay + SCR
Input		
Input Voltage	220/230/240 VAC	
Acceptable Input Voltage	120 – 258 VAC	
Input Frequency	50 Hz / 60 Hz	
Maximum Input Current	16 A	30 A
Output		
Output Voltage	220/230/240 VAC	
Maximum Output Current	10 A for IEC-C13 outlets 16 A for IEC-C19 outlet	10 A for IEC-C13 outlets 16 A for IEC-C19 outlet 30 A for Grand connector
Connection		
Communication	USB/RS-232	
Input	2 x IEC-C20 inlets	2 x Grand connector
Output	8 x IEC-C13 1 x IEC-C19	8 x IEC-C13 1 x IEC-C19 1 Grand
Transfer time	9-12ms (Typical) , 16 ms max.	6-8ms (Typical) , 10 ms max.
Physical		
Dimension, D x W x H (mm)	330 x 430 x 44	
Net Weight (kgs)	5	4.5
Net Weight (including accessories) (kgs)	8	7.5
Environment		
Operating Humidity	0-95 % RH @ -5°C- 45°C (non-condensing)	

n-STS

Static Transfer Switch

Single-phase in/Single-phase out
32A, 63A, 115A, 120A

Product

n-STS single-phase is part of the EPI STS range and offers solutions suitable for protecting single-phase loads with different power ratings. n-STS is available in three size, 32A, 63A and 120A, and is therefore able to satisfy various requirements for the protection of single-phase loads.

FLEXIBILITY OF USE

All n-STS versions are designed with criteria that facilitate on-site installation as well as diagnostics, control and maintenance operations. All models are equipped with a manual bypass and the hot swap function allows for rapid corrective interventions by non-specialized personnel in the event of faults.

COMPLETE DIAGNOSTICS

All n-STS versions are equipped with 32-character LCD displays and control panels with multi-function keys. This allows for rapid and intuitive monitoring of supply readings, switch status and environmental conditions. n-STS is equipped with three standard programmable dry contacts, an input for emergency shutdown, a 232 serial connection and a slot for housing the expansion board, thus ensuring complete availability of interface solutions for remote control and monitoring.

LOAD PROTECTION

With n-STS transfer switch loads, are protected against critical environmental situations and mains power interference. Microprocessor control and the use of thyristor static switched ensure continuous monitoring of the power supply sources and reduced switching times between the two sources in the event of a fault. The constant monitoring of the output current allows for the rapid identification of any short-circuit currents in the consumers, preventing short-circuits from propagating to the other loads. n-STS is equipped with thermal-magnetic protection for the two sources, ensuring rapid intervention in the event of faults and integrated back feed protection. n-STS ensures switching times between the two power sources of less that a quarter of a cycle, both in the event of manual switching and in the event automatic switching triggered by a fault in the power source.

Features

- Increased power quality
- Increased noise reduction
- Double output terminal
- Power black-out protection
- Power redundancy
- Automatic static switching
- Remote Monitoring input power source
- Easy static and mechanical transfer to input source
- Remote management of the power events
- Power event logging
- Output current capability (1000% for short time)
- 2 years warranty
- 10 years spare parts support
- 19” rack cabinet
- Manufacture according to EC Directive; EN62310

Model	n-STS 232 / n-STS 132	n-STS 263 / n-STS 163	n-STS 2115 / n-STS 1115	n-STS 2120 / n-STS 1120
Nominal Current	32A	63A	115A	120A
Input				
Nominal Voltages (Sources S1/S2)	220/230/240VAC, single phase + N			
Input Voltage Tolerance	180VAC-264VAC (selectable)			
Switched Type (2pole model)	Ph + N (two poles)			
Switched Type (1pole model)	Ph (one pole)			
Nominal Frequency	50/60Hz			
Input Frequency Tolerance Range	±10% (selectable)			
Distribution Compatibility	IT, TT, TNS, TNC			
Operating Specifications				
Transfer Type	“Break Before Make” (no overlapping of sources)			
Synchronization phase shift	10 degrees			
Relays default settings	RL1 - S1 NOT OK, RLS - S2 NOT OK, RL3 - COMMON ALARM			
Intervention Method	Hot swap function			
Available Transfer Method	Automatic/Manual/Remote			
Transfer Time (following source failure) ≤	4msec for synchronous sources ≤10msec for non-synchronous sources			
Output current crest factor	3 : 1			
Environment Specifications				
Noise at 1 meter from front	<50dBA			
Storage Temperature	-10°C up to +50°C			
Operating Temperature	0°C - 40°C			
Relative Humidity	90% (non-condensing)			
Max Installation Height	1000m @ nominal power (-1% power per 100m above 1000m); - Max 4000m			
Reference Standard	EN62310-1 (safety), EN62310-2 (electro-magnetic compatibility)			
Options				
Options	Monitoring software, SNMP, Modbus			
Info for Installation				
Weight (kg)	12	13	20	20
Dimension (W*D*H)	19”*720*2U		19”*720*3U	
IP rating	IP 20			

STS Series

Static Transfer Switch

50A - 1250A

Product

EPI STS, allows instantaneous transfer of power sources to the load. If one power source fails, the STS switches to the back-up power source so fast that the load never recognises the transfer made.

OPERATING PRINCIPLE

EPI STS guarantees a source of redundant power, allowing the load to be switched between to alternative and independent power sources. Switching can be automatic (when a supply source falls outside of acceptable tolerances) or manually done by an operator from the front panel or remotely.

PROTECTION AGAINST ENVIRONMENTAL DISTURBANCES

Overloads and load faults. In the event of an overload, the user can decide the level of intervention of the internal protection devices in order to block the power supply. In the extreme case of a downstream short circuit, EPI STS disconnects the load in order to avoid jeopardizing the operation of the other loads (i.e. in the event of poor selectivity of the protection devices).

TOTAL MICROPROCESSOR CONTROL

Microprocessor control logic ensures :

- Fast and safe switching between power sources
- Monitoring of all parameters via LCD display
- Constant monitoring of SCR operation
- Advanced remote diagnostics (RS232 and TCP/IP)

PROTECTION AGAINST POWER SUPPLY FAULTS

If one of the two power sources falls outside tolerance levels, EPI STS will transfer the consumers to the second power source (switching is instantaneous if the two sources are in phase).

SUPERIOR PROTECTION

In the event of an output short circuit, EPI STS blocks the transfer between the two power sources, eliminating the risk of propagating the short circuit and its effects to the other loads. A back feed control circuit will trigger automatic protection devices to avoid energy feeding back to one of the inputs.

ACCESSIBILITY

The layout of the moving components and parts is designed to ensure easy frontal access :

- Power cable connections that are easily accessed with entry from below
- Boards housed in a dedicated area for rapid diagnosis / replacement
- All parts subject to monitoring, maintenance and/or replacement.

Features

- Increased power quality and noise reduction
- Power blackout protection and power redundancy
- Automatic static switching
- Remote monitoring input power sources
- Easy static and mechanical transfer to input sources
- Remote management the power events
- Power event logging
- Output current capability up to 1000% for short time
- Manufactured according to EC Directive; EN62310

Model		3-P50A	3-P100A	3-P150A	3-P200A	3-P250A	3-P300A	3-P400A	3-P600A	3-P800A	3-P1000A	3-P1250A
		4-P50A	4-P100 A	4-P150A	4-P200A	4-P250A	4-P300A	4-P400A	4-P600A	4-P800A	4-P1000A	4-P1250A
Nominal Current (A)		50	100	150	200	250	300	400	600	800	1000	1250
Electrical data												
Input Voltage (Ph-Ph)		380/400/415VAC 3PH+N+Earth										
Input Voltage Tolerance		180-264VAC (PH+N)										
Input Frequency		50/60Hz										
Input Frequency Range		48-65Hz (upper and lower limits adjustable)										
Efficiency (full load)		>99%										
Input Voltage THD		<10%										
Transfer Type		“Break Before Make”										
Transfer Methods Available		Automatic/Manual/Remote										
Transfer Control		Synchronous; With adjustable delay (non-synchronous); zero current (non-synchronous)										
Transfer Time		<4msn for synchronoussources <10msn for non-synchronoussources										
Switching Type		3-Poles : 3 phase switching; 4-Poles : 3 phases + neutral switching										
Crest Factor		3 : 1										
Admissible Overload		0-100% continuous; 101-150%, 1min 151-200%, 10sec; >300%, 250ms										
Protections		Output overload, short circuit, over temperature, backfeed and SCR fault protection										
LCD Panel and Mimic		Standard										
Communication		RS232 standard, RS485 optional										
TCP/IP Connection		Optional										
Dry Contacts		5 programmable relay outputs										
Serial Ports		2; optional										
Temperature Sensor		Standard for internal cabinet temperature										
Environment												
Operating Temperature		0°C - 40°C										
Storage Temperature -		10°C - 50°C										
Humidity		<90%(non condesing)										
Cooling		Forced cooling (redundant fans)										
Noise		<52dBA			<55dBA				<60dBA			TBA
Safety Standard		EN62310-1										
EMC		EN62310-2										
Mechanical												
Dimension (W*D*H)(mm)		685*530*1500			685*580*1770				915*735 *1905	1400*850*1905		TBA
Weight (kg)	3-Pole	139	145	165	195	205	230	240	340	-	-	TBA
	4-Pole	160	175	190	205	235	240	255	375	525	605	TBA

NS Series

Telecom and Electric Power Inverter
Pure Sine Wave Output
DC Voltage: 12/24/48/110/220
VAC Output: 120/220/230/240 V, 50/60 Hz

Product

The NS series is new inverter with up-to-date technology and improved modularity. This inverter has been designed to offer low cost per VA and offers our standard features: High local level of intelligence, Reliability and smart characteristics.

Modules are mounted in racks from 500VA up to 6kVA, with inverter modules of 1000VA capacity. A static switch can be ordered as an option providing second AC source back- up with very fast switching time. Modular distribution is available providing a complete range of products to match most of your application up to 6kVA. Easy to install and to use, this new system is the ideal solution for system integration or dedicated solutions. Existing in 120/220/ AC output, The DC input range is 12 to 220VDC.

Features

- With micro-CPU control, NS Series inverter is an intelligence model product, good designing and reliability are the advantages.
- NS series inverter is adopting SPWM technology, with the output of stabilized voltage and frequency, pure sine-wave.
- NS series inverter has good compatibility, built-in by-pass switch, high overload feature for reliable and continuous power supply
- NS series inverter can be AC power type and DC power type : AC power type means the city power supply is main when the city power is normal, when city power is off, inverter comes into work state. DC power type means the inverter power supply is main when the city power is normal, the inverter power is off, city power comes into work state automatically.
- With the excellent designing, NS series inverter can be auto switched to bypass on the running state, it's easy to maintain and replace the battery without effecting load power supply.
- In case there is battery voltage high/low or overload, the overload warning shutdown output, when battery voltage recovers normal, battery voltage recovers; power supply output will auto recovers in 50 seconds after overload off. This function is very suitable for the communication station which there is no person on duty.
- NS series inverter can support network communication system, power working state can be monitored by the supervision software.
- NS series inverter provides with two dry connectors which can be used for DC input fault checking and AC output problem

Model		NS500	NS1000	NS2000	NS3000	NS4000	NS5000	NS6000
Power		500VA	1000VA	2000VA	3000VA	4000VA	5000VA	6000VA
DC Input	Input Voltage	12V/24V/48V/110V/220V						
	Reverse Noise Current	≤10%						
AC Bypass	Bypass Volt (Vac)	185V-265V (±10V)						
	Input Current (A)	2.3	4.5	9.1	13.6	18.2	22.7	27.3
	Transfer Time (ms)	≤5m s						
AC Output	Rated Capacity (VA)	500VA	1000VA	2000VA	3000VA	4000VA	5000VA	6000VA
	Output Power (W)	400W	800W	1600W	2400W	3200W	3500W	4200W
	Voltage and Frequency	220Vac, 50Hz						
	Output Current (A)	1.8	3.6	7.2	10.8	14.5	16	19.1
	Voltage Precision (V)	220± 1.5%						
	Frequency Precision (Hz)	50±0.1%						
	Output	Pure Sine Wave						
	Wave Distortion (THD) (Resistive Load)	≤3%						
	Dynamic Reaction Time (Load 0 - 100%)	5%						
	Power Factor (PF)	0.8						
	Overload	120% : 30 sec						
	Inversion Efficiency (80% Resistant Load)	≥85%						
	Transfer Time (ms)	≤5ms						
Environment	Isolation (IN/OUT)	1500Vac : 1 minute						
	Noise (1 meter)	≤40dB						
	Temperature	-25°C to 50°C						
	Humidity	0-90% (non-condensing)						
	Sea Level (m)	≤2,000						
Display	LCD	Input/output voltage, frequency, output current, temperature						
	LED	Line, Inverter, Battery, Output load						
Mechanical	19 inch Rack Type (DxWxH) (mm)	360*448*88 (NS 24-1kVA; NS 48-1kVA/2kVA; NS 110/1kVA/2kVA; NS 220-1kVA/2kVA)						
		390*448*88 (NS 24-2kVA; 3kVA; 4kVA; 5kVA; 6kVA)						
	Weight (kg)	7 (1kVA); 8 (2kVA); 11 (3kVA); 12 (4kVA); 13 (5kVA); 14 (6kVA)						

Pro-Smart Series

Micro Integrated Data Center

Product

Pro-Smart Series Micro-Integrated Data Center, ranging from 1kVA to 10kVA, integrated with 5 systems that include rack system, power distribution system, cooling system, monitoring system and gas fire extinguishing system, for single cabinet foot print space is only 0.72 square meter, it is a good choice for server room within10-20 square meters.

RELIABLE AND SAFETY

- All parts follow international standard reliable quality of production.
- Pre-manufactured, pre-assembled, Pre-debugged, ensure the safety and reliability of product operation.
- Self-contained system of single cabinet, suit to all kind of complex condition (Dusty, Limited space, No air condition).
- Overall design, overall delivery, avoid design issue of system.
- Intelligent bullet door system retard channel over-temperature, allow time for data backup.
- Integrated intelligent monitoring ensure the safe and reliable operation of system.

INTELLIGENT MANAGEMENT

- The monitor system is open and expandable, friendly interface.
- Local, remote WEB access interface and SMS are supported. Circuitry to avoid fault tolerance.

ENERGY-EFFICIENT

- Closer refrigeration, efficient power supply, Single cabinet average PUE≈ 1.50.
- Power distribution, UPS, monitoring, refrigeration, multi-cabinet integration which save more space.
- No design and no wiring required, remote and unattended operation which will save TCO

APPLICATION

- Series governmental server room
- Financial and IT industry
- Commercial and tourist
- Gas station, tollgate, intelligent building Government office
- Educational and medical institution, energy and electric power industry
- Tobacco industry and military

SIMPLE AND CONVENIENT

- Distribution modular design, handy installation and maintenance
- Rack model internal air conditioner, easy maintenance
- No special decoration required, installation and debugging cycle only 3 hours
- Single cabinet system, expand to 2-3 cabinets is available.

Subsystem	Specification requirements		Specific parameters of each model		
			PS1103A	PS1106A	PS1110A
Rack System	Specifiaction W*D*H) mm		600*1200*2000		
	Material		Front door is single open sealed glass door, rear door is double open seal stamping parts		
	Power source		220/230/240VAC,50Hz		
	Working temperature		0-40℃		
	Humidity range		5-95%		
	Net weight (Kg)		255		
	Noise (dB)		45		
Power Distribution System	INPUT Power Distribution Module (PDM)	Specification	Rack mounted, with status indicator		
		Main switch	40A-2P	80A-2P	100A-2P
		Surge protection	Grade C lightning protection		
		Height	3U		
	OUTPUT Power distribution Unit (PDU)	Specification	8por, IEC C13*7(10A) + IEC C19*1(16A),2PCS		
		Installation	Back Vertical mounted, 1U high		
	UPS	Capacity	3KVA/2.7KW	6kVA/6kW	10KVA/10KW
		Connect mode	single phase in, single phase out		
		PF	0.9	1	1
		Input voltage range	110~288VAC,176~288VACwith full load		
		Output voltage	208/220/230/240VAC		
		Height	2U		
	Battery pack	Battery type	12V 7AHX8 12V	7AH X16 12V	9AH X16
		Height	2U		
Cooling System	Specification		DC converter frequency compressor		
	Cooling capacity		3.7kW		
	Air outlet		Forward air supply, backward air return		
	Height		5U		
Monitoring System	Specification		7 inch touch screen + monitoring host		
	Monitoring contents		Air conditioning, UPS, power distribution, temperature and humidity, door status, smoke, leakage, access control		
	Extension function		Web access, report management, third-party platform access		
	Alarm method		Sound and light alarm, email alarm (standard) SMS alarm (optional)		
Options	Gas fire-extinguishing system		Fire extinguishing system inside cabinet (occupies 1U space)		
	Network video monitoring		2 megapixel webcam		
	Duct and accessories		Strong and weak electricity cable duct		
	Cabinet fittings		Cabinet load-bearing board, cabinet blind board (1U and 2U), cabinet load-bearing support frame (height can be customized).		

AVR 11 Series

Full Automatic single-phase Servo Voltage Stabilizers

3.5 - 50kVA

Product

Voltage regulators are servo drive structure, microcontroller controlled heavy duty devices which regulates mains voltage for critical loads.

Features

- Digital Display
- Servo Motor Controlled Technology
- Fast Response for Fluctuations
- Reliable Stabilization for Secure Energy
- High efficiency in each model
- Short circuit protection
- Manual Bypass Switch
- Wide input voltage range version (optional)
- Electro-mechanic (breaker module)
- High-low voltage protection (optional)
- Higher IP applications are available

Model AVR	1103	1105	1107	1110	1115	1120	1125	1130	1140	1150
Power (kVA)	3,5	5	7,5	10	15	20	25	30	40	50
Input										
Input Voltage Correct Interval	165 - 255 VAC / 130 - 240 VAC (Optional)									
Input Voltage Operating Interval	90 - 285 VAC									
Operation Frequency	47 / 65 Hz									
Line Input Protection	Overcurrent, Low and High voltage protection (Optional)									
Output										
Output Voltage	220 / 230 / 240 VAC RMS ± 1 %									
Overloading	10 Sec. 200% Load									
Correction Speed	~ 90 Volt / Sec.									
Upturn Period	~ 90 Volt / Sec. (160 VAC - 260 VAC)									
Output Protection	Protects load by opening the circuit when overburden, short circuit occurs (Optional)									
General										
Working Principle	Servo Motor, Microprocessor Controlled, Full Automatic									
Cooling	Smart Fan System									
Monitoring	TRUE RMS Panel Voltmeter output voltage and line voltage monitoring									
Total Efficiency	>96%									
Mechanical By-Pass	Manually Controlled Line - PAKO SWITCH Selects Voltage Regulator" Switch Turn On / Off									
Protection Level	IP 20 / IP 54 (Optional)									
Environmental										
Working Temperature	-10 °C / 50 °C									
Storage Temperature	-25 °C / +60 °C									
Relative Humidity	<90%, DIN (40040)									
Working Altitude	<3000 m									
Noise Level (1 meter)	<50 dBA									
Standards	CE / ISO 9001									
Dimensions										
H x W x D (cm)	30 x 55 x 37				32x60x40	75 x 50 x 50			75 x 50 x 60	
Weight (kg)	29	30	34	47	55	95	110	130	155	180

AVR 33 Series

Full Automatic 3-phase Servo Voltage Stabilizers

10.5 - 150kVA

Product

Voltage regulators are servo drive structure, microcontroller controlled heavy duty devices which regulates mains voltage for critical loads.

AVR 33 series are three phase voltage stabilizers regulate mains voltage and bring many advantages.

Features

- Digital Display
- Servo Motor Controlled Technology
- Fast Response for Fluctuations
- Reliable Stabilization for Secure Energy
- High efficiency in each model
- Short circuit protection Load transfer to Bypass via pole charge switch
- Wide input voltage range version (optional)
- Electro-mechanic (breaker module)
- High-low voltage protection (optional)
- Higher IP applications are available

Model	SRV 01033	SRV 01533	SRV 02033	SRV 03033	SRV 04533	SRV 06033	SRV 07533	SRV 010033	SRV 012033	SRV 015033
Power (kVA)	10,5	15	22,5	30	45	45	75	100	120	150
Input										
Input Voltage Correct Internal	285 - 440 VAC (Optional: 190-415 VAC)									
Operation Frequency	47 / 65 Hz									
Line Input Protection	Overcurrent, Low and High voltage protection									
Output										
Output Voltage	380 / 400 / 415 VAC RMS ± 1 %									
Overloading	10 Sec. 200 % Load									
Correction Speed	~ 90 Volt / Sec.									
Upturn Period	~ 90 Volt / Sec. (160 VAC - 250 VAC)									
Output Protection	Protects load by opening the circuit when overburden, short circuit occurs.									
General										
Working Principle	Servo Motor, Microprocessor Controlled, Full Automatic									
Cooling	Smart Fan System									
Measured Value Monitor	TRUE RMS Panel Voltmeter (74x74mm) output voltage and line voltage monitorization									
Total Efficiency	> 97% (Full Load)									
Mechanical By-Pass	"Manually Controlled Line - PAKO Switch Selects Voltage Regulator" Switch Turn On / Of									
Protection Level	IP20									
Environmental										
Working Temperature	-10 °C / 50 °C									
Storage Temperature	-25 °C / +60 °C									
Relative Humidity	<90%, DIN (40040)									
Working Altitude	<2000 m									
Noise Level (1 meter)	<55 dB									
Standards	CE / ISO 9001									
Dimensions										
H x W x D (cm)	117 x 40 x 64			127 x 40 x 64		140 x 88 x 60			165 x 94 x 66	
Weight (kg)	95	105	125	145	165	260	280	310	400	425

AVR 33 Hi Series

Full Automatic 3-phase Servo Voltage Stabilizers

200 - 3000kVA

Product

Voltage regulators are servo drive structure, microcontroller controlled heavy duty devices which regulates mains voltage for critical loads. SERVOREX 33 HI series are three phase voltage stabilizers regulate mains voltage and bring many advantages.

Features

- Digital Display
- Servo Motor Controlled Technology
- Fast Response for Fluctuations
- Reliable Stabilization for Secure Energy
- High efficiency in each model
- Short circuit protection
- Load transfer to Bypass via pole charge switch
- Wide input voltage range version (optional)
- Electro-mechanic (breaker module)
- High-low voltage protection (optional)
- Higher IP applications are available

Model	33200	33250	33300	33400	33500	33600	33800	331000	331250	331500	332000	332500	333000
Power (kVA)	200	250	300	400	500	600	800	1000	1250	1500	2000	2500	3000
Input													
Input Voltage Correct Interval	285-440 VAC / 190-415 VAC (Optional)												
Input Voltage Operating Interval	155 - 490 VAC												
Operation Frequency	47 / 65 Hz												
Line Input Protection	Overcurrent, Low and High voltage protection												
Output													
Output Voltage	380 / 400 / 415 VAC RMS ± 1 %												
Overloading	10 Sec. 200 % Load												
Line Input Protection	~ 90 Volt / Sec.												
Upturn Period	~ 90 Volt / Sec. (160 VAC - 250 VAC)												
Output Protection	Protects load by opening the circuit when overburden, short circuit occurs												
General													
Working Principle	Servo Motor, Microprocessor Controlled, Full Automatic												
Cooling	Smart Fan System												
Measured Value Monitor	TRUE RMS Panel Voltmeter (74x74 mm) output voltage and line voltage monitorization												
Total Efficiency	> 97% (Full Load)												
Mechanical By-Pass	“Manually Controlled Line - PAKO SWITCH Selects Voltage Regulator” Switch Turn On / Off												
Protection Level	IP20												
Environmental													
Working Temperature	-10 °C / 50 °C												
Storage Temperature	-25 °C / +60 °C												
Relative Humidity	<90%, DIN (40040)												
Working Altitude	<2000 m												
Acoustic Level (1 meter)	<55 dB												
Standards	CE / ISO 9001												
Dimensions													
H x W x D (cm)	190 x 120 x 80 (mono block) 125 x 180 x 120 3 pcs			140 x 180 x 120	175 x 180 x 122		200 x 210 x 120	185 x 210 x 200		PLEASE ASK *			
Weight (kg)	1050	1100	1200	1650	2000	2100	2900	3450	3900	PLEASE ASK *			

3RC Rectifier SERIES

3-phase Rectifier System

15~200A (24, 48, 110, 220, 240 Vdc)

General Specifications

- Non-linear charges drive Internal isolation transformer at input
- Full controlled conventional rectifier
- Smart control and high reliability with DSP (Digital Signal Processor)
- Float charge, equalizing charge and boost charge modes
- Automatic and manual charge modes
- Low output voltage ripple and high reliability
- 2x16 character LCD display, showing measurements, status and alarm messages
- Soft start
- Led displays for easy observation of rectifier status.
- Audible alarm
- Programmable current limitation
- Operation as voltage source or current source
- Calibration of measurements from front panel
- Language selection from front panel. (English / German / Turkish / Dutch / Portuguese)
- DC Low / High, Line failure, Over temperature, Short circuit protections
- Ability to program all operation parameters (Password protected)
- Programable alarm relay contact outputs (4 standard, up to 16 relays as option)
- Possibility of monitor and control over RS232-RS485
- Modbus communication
- Earth leakage monitoring (DC leakage)
- Log records with date and time stamp up the 200 events
- 12V / 24V / 48V / 110V / 220 / 240V output options

Features

- Non-linear charges drive
- Active parallel (current sharing) operation up to 4 devices
- Ability to monitor batteries and battery low alarm, even when the AC input fails.
- Battery temperature compensation
- Easy observation via analog gauges
- Battery test with adjustable voltage and duration
- Transducers for input / output voltage(s) / current(s) (4-20mA and 0-10V)
- 12 pulse option to limit input current distortion
- Input Power / kVA / kW measurement
- Internal cabinet light / cabinet anticondensation heater
- Touch screen

Model	3-Phase
Input	
Nominal voltage	190VAC / 200VAC / 380VAC / 400VAC / 415VAC (Ph-Ph)
Input voltage tolerance	± 15%
Nominal frequency	50Hz / 60Hz
Transformer	Galvanically isolated
ITHD	< 30-35% standard, < 10% on 12 pulse (Optional)
Input Protection	Thermic-Magnetic Overcurrent protection MCB, Overvoltage protection
Output	
Output voltage	12VDC / 24VDC / 48VDC / 110VDC / 220 / 240VDC
Output voltage adjustment	120% of Nominal Output Voltage
Output current adjustment	10% - 100% of Nominal Output Current
Battery charging current adjustment	10% - 100% of Nominal Output Current
Boost charger voltage	100% - 120% of Floating Output Current
Boost voltage (VAC)	2,4 Lead Acid Battery 1,50 NiCd Battery
Float Voltage (VAC)	2,23 Lead Acid Battery 1,40 NiCd Battery
Nominal output current	0 - 10000A (According to request)
Maximum output current	%100 of Nominal Output Current
Filtering	L-C Filter
General	
Boost Timer	0 – 600 hours adjustable
Cooling	Fan forced cooling (Standard), Natural cooling (Optional)
Isolation voltage	1500 or 3000VAC input/chassis and output/chassis
Efficiency at full load	85% to 93%
Protection level	IP20 (Standard); IP21 - IP54 (Optional), (Consult for IP54 to IP64)
Cable entry	Front bottom (Top entry, optional)
Access to battery	Batteries and rectifier in the same cabinet with front access (optional)
Circuit breakers	Thermic-magnetic circuit breakers for input, output and battery Reset button Auto start
Measurements	Load output voltage and current / Batt.. output voltage and current / Utility voltage / Line voltage / Frequency / Power factor (Optional) / Batt. ambient temperature (Optional)
Environment	
Acoustic noise	55 - 65 dB (According to power rating)
Storage temperature	(- 20°C) - (+70°C)
Operation temperature	(-5°C) - (+50°C)
Humidity	0-%95 (Non-condensing)
Altitude	1000m (-1% Power for every 100m after 1000m) Max. 4000m
Color	RAL7035, RAL7032 (Standard), others (Optional)
Communication	RS232 (Standard), Dry Contacts (Standard), RS485 (Optional), Modbus TCP (Optional), SNMP (Optional), GSM (Optional)
Paralleling	Parallel redundant (No need for extra kit for paralleling)
Standards	
Standards	IEC60146, IEC62040 1-2, ISO9001, ISO 14001

EPI Smart PDU

Upgradeable, Local and Remote Power Monitoring

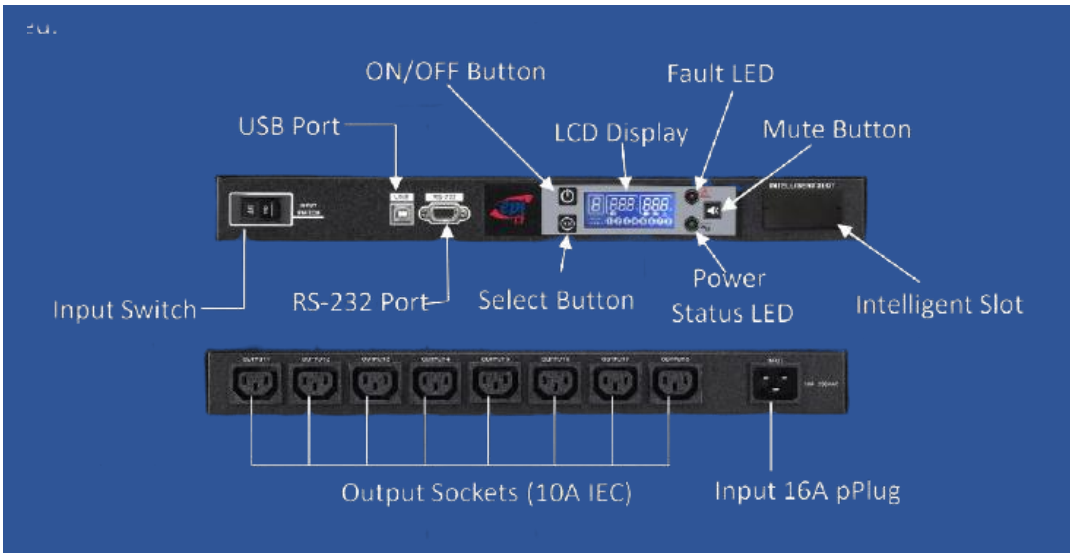
Product

The product is used as an external power distribution unit in conjunction with UPS systems or large-scale voltage regulators. It supplies connected equipment with continuous power from any protected UPS, generator or mains input power source. It's perfect to use in conjunction with 6-10K Rack online UPS and isolation box.

The LCD display allows you to view the status of each output (ON / OFF), input voltage, input current, the current on each output and any alarm codes present. At the bottom of the display, there are eight icons representing the status of the eight outputs: if the numerical icon is on, the relative output is powered; if numerical icon is off, the relative output is not powered; if the numerical icon is blinking, the relative output is overloaded.

Features

- Provides reliable power distribution to multiple devices
- 1U form factor for horizontal or vertical rack installation
- Total active power measurements
- Scheduled On/Off control capability for all outlets
- Sequential turn-on outlets delay setting to prevent high peak current
- RS-232/USB and SNMP multiple communications



Input	
Input Plug	IEC C20 16A 250V
Cord Entry	Rear feed
Maximum Input Current	16A Rated Input Current 16A
Nominal Input Voltage	220V/230V/240V
Rated Input Voltage	184 – 300V
Input Frequency	50Hz/60Hz
Power Capacity	8kVA at 230V
Overload Protection	16A Breaker
Output	
Nominal Output Voltage	220V/230V/240V
Rated Output Voltage	184 – 300V
Output Connections	(8) IEC C13
Output Current Accuracy	+/- 0.1A
Physical	
Dimensions (D x W x H) (mm)	250 x 430 x 44
Color	Black
Weight (Kg)	3.5
Indicators	
LED Indicators	PDU power LED and fault LED
LED Displays	Indicates outlet On/Off status, input voltage & current, outlet current and fault/alarm code
Environmental	
Operation Environment	0 – 50 ℃
Operation Relative Humidity	0 – 90% No condensing
Altitude	<1000m
Conformance	
EMC	EN 55022 Class B EN 61000-3-2 EN 61000-3-3 EN 55024
Safety	EN60950-1

MU5000 Series

High Frequency On Grid Solar Inverter 2.5KW-6KW

Product

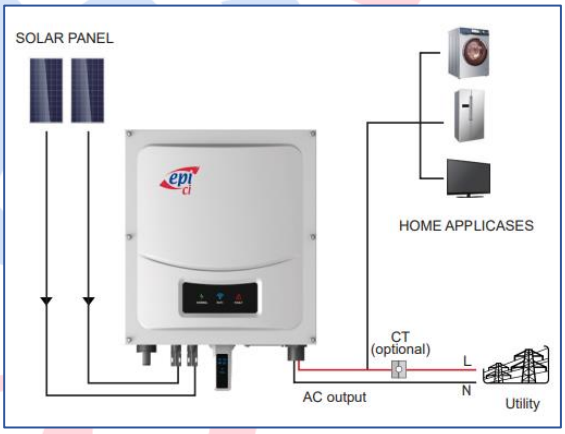
MU5000 series PV inverters take full account of the needs of end customers, with excellent performance at the same time, use LED as inverter status display, effectively improve product life. Using DSP digital control, could afford wide grid voltage range, have a full range of protection features; to maximize the benefits at the same time, greatly enhance the reliability of the product.

Back panel printing description

Green LED	Continuous light	Normal status
	Flicker	Waiting status
Blue LED	Flicker	Wifi normal communication
Red LED	Continuous light	Fault status
	Flicker	Program of procedure or give an alarm

1. Operation normal (Green)
2. WIFI communication (Blue)
3. Error display (Red)
4. DC switch
5. PV input
6. WIFI connector
7. PC USB connector / RS-485

Solar system connection



Features

- High Frequency On Grid Solar Inverter
- Rate power: 2.5-6KW
- MPPT efficiency up to 99.50%
- Multiple communications: USB,WIFI etc
- Monitoring inverters freely via mobile phonese APP
- Fanless low-noise design
- IP65 water-proof and dust-proof Cabinet

Model	MU50-2500	MU50-3000	MU50-3600M	MU50-4200M	MU50-4600M	MU50-5000M	MU50-6000M
Rated Power(W)	2500	3000	3600	4200	4600	5000	6000
PV Input (DC)							
Maximum recommended DC power(W)	2875	3450	4100	4800	5300	5750	7000
Nominal DC operating voltage(V)	360						
Maximum DC voltage(V)	550						
Start voltage(V)	100						
MPPT voltage range(V)	80~550						
Maximum input current(A)	11	11	11/11	11/11	11/11	11/11	11/11
No of MPP tracker	1		2				
Strings per MPP tracker	1						
Grid Output (AC)							
Nominal AC output power(W)	2500	3000	3600	4200	4600	5000	6000
Maximum AC output power (VA)	2500	3000	3600	4200	4600	5000	6000
Nominal output voltage(V); range (V)	220 / 230 / 240;180-280						
AC grid frequency (Hz); range (Hz)	50/60;45~55/55-65						
Nominal output current(A)	10.9	13	15.7	18.3	20.0	21.8	26.1
Maximum output current(A)	11.4	13.7	16.4	19.1	21.0	22.8	27.3
Total harmonic distortion I (THDi)	3.THDi@Full load &THDv <1%						
Power factor at rated power	1						
Displacement power factor	0.8leading ~ 0.8lagging						
AC connection	Single phase						
Efficiency							
Maximum efficiency	97.2%	97.2%	97.4%	97.4%	97.4%	97.4%	97.4%
Euro-efficiency	96.8%	96.8%	97.0%	97.0%	97.0%	97.0%	97.0%
MPPT efficiency	99.5%						
Self-Consumption night(W)	<1						
Protection							
DC reverse polarity protection	Yes						
DC switch rating for each MPPT	Yes						
Output over current protection	Yes						
Output overvoltage protection-varistor	Yes						
Ground fault monitoring	Yes						
Grid monitoring	Yes						
Integrated all-pole sensitive leakage current	Yes						
Physical							
Dimension(W/H/D)(mm)	262*368*155	262*368*155	355*412*153	355*412*153	355*412*173	355*412*173	355*412*201
Net weight (kg)	10	10	13.5	13.5	14.5	14.5	16.5
Interface							
DC connection	H4/MC4						
AC connection	Connector						
Display	LED						
Communication interfaces	Wi-Fi / USB / GPRS						
Environment							
Ingress protection rating	IP65						
Humidity	0-100%						
Operating temperature range	-25℃ ~+60℃ With derating above 45℃						
Cooling concept	Natural						
Noise emission(typical)[dB]	≤25						
Altitude	<4000m						
Others							
Topology	transformerless						
Warranty	Standard 5years/10 years(opt.)						
Certificates and approvals	CE / IEC62109 / EN50549-1		CE / IEC62109 / CQC / EN50549-1				

MU1000 PRO Series

ON/OFF Grid High frequency Hybrid Solar

Product

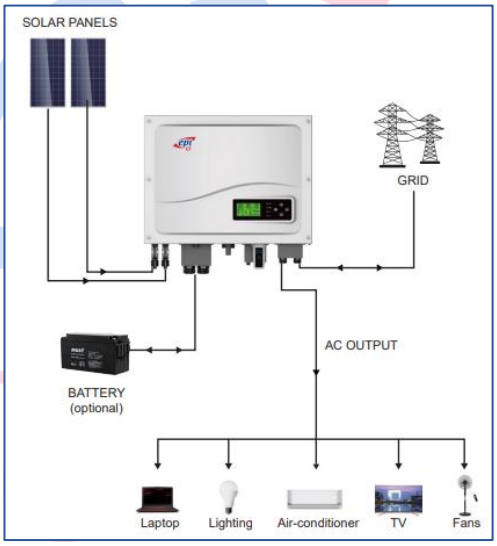
This is a flexible and intelligent energy storage solar inverter with a wide range of MPPT Voltage. Combining functions of off grid and on grid. This hybrid solar inverter can power all kinds of appliances in home or office, and can also be used in power stations.

Back panel printing description

1. The inverter operation status indicator
2. Battery indicator
3. WiFi status indicator
4. Fault indicator

12. PV input terminals
13. Battery input terminals and cover
14. PV input switch
15. BTS terminals, BMS terminals, load monitor terminals, dry contact terminals, CAN communication terminals, USB terminal and cover
16. Wi-Fi commodule
17. AC output terminals and cover

Solar system connection



Features

- Wide range of MPPT voltage:120-550V
- Multiple operation modes: Grid-tie, off grid and grid-tie with back up
- Support LCD display & Smart LCD setting
- Available Export control CT sensor function
- Multiple communications:USB,RS485,GPRS and wifi etc
- Monitoring inverters freely via computers or mobile phones
- Full protection function: Over-voltage, over-frequency, over-current, over-temperature, and AC short-circuit automatic protection
- Intelligent BMS battery management function
- Fanless low-noise design
- IP65 Dust-proof and water-proof

Model	MU10-5048PRO
RATED POWER(W)	5000
Nominal Battery System Voltage	48
PV Input (DC)	
Maximum recommended DC power(W)	7000
Nominal DC operating voltage(V)	360
Maximum DC voltage(V)	550
MPPT voltage range(V)	120~550
Maximum input current(A)	13 / 13
Maximum short circuit current(A)	15 / 15
No. of MPP tracker	2
Strings per MPP tracker	1
Inverter Output (AC)	
Nominal AC output power(W)	5000
Nominal output voltage(V); range(V)	220/230/240;180-280
AC grid frequency (Hz); range (Hz)	50/60;45~55/55-65
Nominal output current(A)	21.8
Maximum output current(A)	22.8
Total harmonic distortion i(THDi)	<3%
Power factor at rated power	1
Displacement power factor	0.8leading ~ 0.8lagging
Battery Mode Output (AC)	
Output Rated Power	3680
Nominal output voltage(V); accuracy range	230±1%
Output ferequency(Hz);accuracy range	50/60(optional)±0.2%
Output rated current(A)	15
Output waveform	Pure sine wave
Total harmonic distortion v (linear load)	<3%
Battery and Charger	
Battery type	Lead-acid battery / Lithium battery
Battery voltage(V)	48
Battery voltage range(V)	40~60
Charging curve	3-stage adaptive with maintenance
Over-current protection / Over-temperature protection	Yes / Yes
Maximum charging/discharging power(W)	4000
Maximum charging/discharging currernt(A)	80 / 80
Efficiency	
Maximum efficiency	97.3%
Euro-efficiency	96.8%
MPPT efficiency	99.9%
Protection	
DC switch rating for each MPPT	Yes
Grid monitoring	Yes
Output over current protection	Yes
Output overvoltage protection-varistor	Yes
Ground fault monitoring	Yes
Integrated all-pole sensitive leakage current	Yes
General	
Dimension(W/H/D)(mm)	480*420*215
Net weight (kg)	27
DC connection	H4 / MC4
AC connection	Terminal Block
Display	LED+LCD
Communication interfaces	Wi-Fi / USB / GPRS / RS485
Ingress protection rating	IP65
Humidity	0~95% RH(No codensing)
Operating temperature range	-20℃ +60℃ With derating above 45℃
Cooling concept	Natural
Altitude	<3000m

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“Technology is our lifeblood in an industry where innovation drives competition and customer care”

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