

Armor

160KVA ~ 500KVA

PF 0.9 (3 : 3)



Applications

IDC – Internet Data Center
ISP – Internet Service Provider
Military energy system
Power transmission / distribution system
Industrial automation / manufacturing system

Highlights

- ✓ Full DSP technology
- ✓ High MTBF (> 200,000 h)
- ✓ Low MTTR (< 0.5h)
- ✓ Strong mixed load capacity
- ✓ High overload capacity
- ✓ Superior protection
- ✓ High input power factor (0.99)
- ✓ N+X redundancy parallel
- ✓ Full isolation of input and output
- ✓ Built-in output isolation transformer
- ✓ Being placed up against the wall

Armor series UPS 160~500KVA acquires online double conversion with full DSP technology. Its rectifier adopts three-level PWM rectifier technology based on IGBT components, realizing excellent performance of high input power factor and low input harmonic current. Its inverter also adopts PWM technology based on IGBT components, and is equipped with output isolation transformer, realizing high performance of stable voltage, stable frequency, low waveform distortion, strong load capacity and impact resistance capacity. Armor series UPS remains a high efficiency of an output power factor to 0.9, offering high quality power for all kinds of loads, especially inductive or capacitive loads in industrial applications.

Features

High reliability

- Intelligent digital control
 - > Use high-speed MCU to achieve real-time control, parameter settings, running program management, self-test and self-detect functions; be able to detect all independent circuit on circuit boards and provides failsafe
 - > Use advanced DDC (Direct Digital Control), full DSP (Digital Signal Processor) technology and specific IC to make the product have excellent performance
 - > Use advanced IGBT modules featured with high-speed switch, high voltage and high current, its high efficiency and miniaturized drive circuit improve the overall efficiency and reliability of the product effectively
- Permissible 100% load unbalance
 - > Use three-phase independent modulation and full-bridge inverter technology, provide normal power supply at 100% unbalanced three-phase load
- Built-in output isolation transformer
 - > Standard configuration with output isolation transformer prevents the harm to equipment caused by DC component of UPS output voltage, effectively reduces neutral to earth voltage of output and effectively decreases the direct interference from the harmonic currents of loads to improve the UPS reliability
- Full isolation of input and output avoid risk of DC sneaking into loads
- Extra long MTBF (> 200,000 h) and short MTTR (< 0.5 h)
- Latest IGBT rectifier technology, high input power factor up to 0.99 and low harmonic current to provide high efficiency, energy saving and environmental protection
- High overload capability
 - > 105% < load ≤ 110% for 60 minutes, 110% < load ≤ 125% for 10 minutes
- High efficiency at light load, reducing operating cost
- ECO mode and EPO (Emergency Power Off) mode
- Batteries are directly connected to BUS line, and output has strong impact resistance capacity
- Intelligent self-diagnosing function and superior protections (short-circuit, overload, over-temperature, overvoltage, under-voltage, over-current, battery low voltage and fan failure protections)
- Advanced parallel redundant configuration (up to 6 units) for power system not only greatly improve system reliability, reduce MTTR, but also allows users to multiply capacity and uptime for future expansion by adding additional UPS systems

High usability and availability

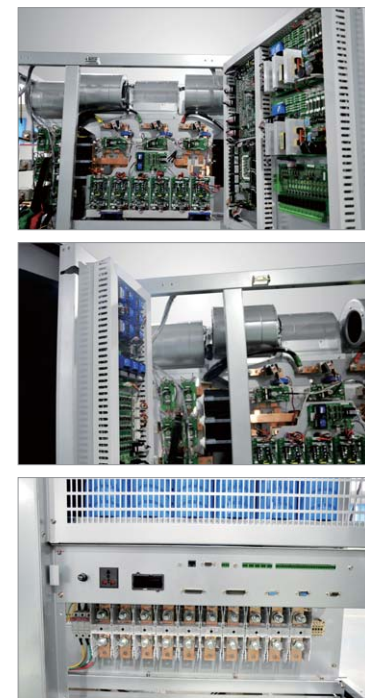
- Three / three-phase models for 380 / 400 / 415 V, 50 / 60 Hz grid system
- Excellent compatibility with generators
- Unique ventilation design, compact whole structure for small footprint
- Similar modular design makes field maintenance quick and easy
- Front access makes maintenance and replacement easy, being placed up against the wall save room space
- Two cable entry systems: bottom cable entry and side cable entry
- Abundant historical log (10000 records) available for future check
- Flexible and optimized battery number design (48 / 49 / 50 / 51 / 52pcs optional)
- Strong compatibility, suitable for all kinds of loads (mixed, resistive, inductive, capacitive and non-linear loads)
- 5.7 inches LCD touch screen with friendly human-machine interface, supports touch screen and multi-functional button operation
- Battery cold start (optional): in the absence of mains power, battery cold start function allows users to start the UPS with the batteries to meet the emergency

High intelligence

- Powerful network monitoring management with multi-platform communications: standard RS232 / RS485 / dry contacts, optional SNMP communication interfaces are used for monitoring UPS running status
- Advanced intelligent battery management (ABM)
 - Use integrated design of rectifier / charger, set up parameters on interface according to the configured battery capacity and automatically adjust the charging current by software, meanwhile enable to set the time of battery self-test and charge / discharge interval according to the grid security situation to extend the lifetime of the battery

Available Options

Communication Ports
SNMP card and SMS
Software
UPSmart / iStars
Others
Parallel kits
SPD
Battery cold start
Battery temperature compensation
Low battery voltage release (for ABB T4-T6 breaker)
LBS (Load Bus Synchronization)
Top cable entry cabinet (optional for 200 ~ 300 KVA)
Maintenance bypass cabinet (optional for 400 ~ 500 KVA)
Short circuit soft copper bar for 400 ~ 500 KVA single input (for SOCOMEC switch)



Technical specifications

MODEL	ARM 160	ARM 200	ARM 250	ARM 300	ARM 400	ARM 500
Capacity	160 KVA 144 KW	200 KVA 180 KW	250 KVA 225 KW	300 KVA 270 KW	400 KVA 360 KW	500 KVA 450 KW
INPUT						
Rated voltage	380 V / 400 V / 415 Vac					
Voltage range	346 V ~ 456 V (full load) 304 V ~ 346 V (power derating 10%)					
Rated frequency	50 / 60 Hz					
Frequency range	50 / 60 Hz ± 5 Hz					
Power factor	≥ 0.99					
Total harmonic distortion (THDI)	≤ 3%					
Input current-limiting	1.1 times of rated current (0.1 ~ 1.1 settable)					
Rectifier delay start	10 s (1 ~ 300 settable)					
Bypass voltage range	± 20% (settable)					
OUTPUT						
Rated voltage	380 V / 400 V / 415 Vac					
Voltage regulation	± 1%					
Frequency	Mains mode: synchronized with utility; Battery mode: 50 / 60 Hz ± 0.1%					
Waveform	Sinusoidal					
Crest factor	3:1					
Total harmonic distortion (THDV)	≤ 2% (linear load); ≤ 5% (non-linear load)					
Transfer time	0 ms					
Inverter overload capability	105% ~ 110% for 60 minutes, 110% ~ 125% for 10 minutes					
Slight adjustment of inverter output voltage	± 5 V					
BATTERIES						
Number of battery	50 pcs (48 / 49 / 51 / 52 pcs selectable)					
DC voltage	600 Vdc (576 / 588 / 612 / 624 Vdc selectable)					
Charging current	Charging rate (settable) × battery capacity (settable) × number of battery group (settable)					
Battery state display	Battery remaining capacity and backup time					
Battery self-test	Settable periodic self-test; manually configurable testing time and voltage					
SYSTEM						
Efficiency	Line mode ≥ 93%, ECO mode ≥ 98%					
Max. parallel numbers	6					
Protections	Short-circuit, overload, over-temperature, overvoltage, undervoltage, battery low voltage and fan failure					
Display	5.7 inches LCD touch screen					
IP rating	IP 20					
COMMUNICAITONS						
RS232 / RS485 / dry contacts	Supports Windows® 98 / 2000 / 2003 / XP / Vista / 2008 / 7 / 8 / 10					
SNMP (optional)	Power management from SNMP manager and web browser					
OTHERS						
Operating temperature	0 ~ 40°C					
Storage temperature	- 25°C ~ 55°C (without battery)					
Humidity	5% ~ 95% (non-condensing)					
Noise level at 1 m	< 65 dB					
Dimensions (W×D×H) (mm)	800 × 860 × 1700	1210 × 860 × 1950	2380 × 860 × 1950			
Packaged dimensions (W×D×H) (mm)	900 × 950 × 1950	1300 × 950 × 2200	1300 × 950 × 2200 (× 2)			
Net / Gross weight (kg)	790 / 816	1135 / 1200	1275 / 1340	1355 / 1420	2090 / 2200	2300 / 2410

* All specifications subject to change without notice.