

Modular 20

20KVA ~ 160KVA
PF 1.0 (3 : 3)



Applications

IDC – Internet Data Center
ISP – Internet Service Provider
SCADA monitoring system
Electricity & Railway signaling system
Bank or Bond Trading / Clearing center
Precision instruments, Automation system

Highlights

- ✓ Hot-swappable modularity
- ✓ Easy expandability and scalability
- ✓ High power density
- ✓ High output power factor (PF1.0)
- ✓ Integrated power distribution
- ✓ Dual-mains input
- ✓ Small footprint

Modular 20 series UPS is redundant, scalable, 3 - Phase UPS power protection system with on-line double-conversion and full DSP control technology and a highly enhanced output power factor to 1.0. Its hot-swappable and flexible power module configuration makes the capacity scalable from 20KVA / 20KW up to 160KVA / 160KW, and system capacity can be expanded to 320KVA / 320KW by advanced "N+X" wireless parallel and redundancy technology. All internal modules (monitoring module, power module and charging module) are modularly designed and hot-swappable, assuring system compactness, reliability and easy maintenance. Modular 20 series UPS was specifically designed to ensure maximum protection of mission critical data center or critical applications loads.

Features

Excellent performance and high reliability

- Full DSP control technology has been used on rectifier, inverter and charger
- High input power factor > 0.99, THDi < 3%
- "N+X" parallel and redundancy technology: easily set up numbers of redundancy module on LCD panel, support 2 complete UPS in parallel, avoid single point failure and further strengthen the reliability
- Unique air isolation technology: isolation between key components and air duct effectively avoid the dust influence on key components
- Intelligent fan speed regulation: fan speed varies intelligently with the inner temperature, reducing noise and increasing the service life of the fan
- Standard configuration with SPD module: SPD (class C) effectively prevent the damage of lightning shock to the equipment
- Consistently reliable protection for hardware and software, sophisticated detection inside the UPS, abundant event log for future check

High usability

- 5.7 inches LCD touch screen provides easy-to-use feature with complete graphic user interface
- Easy maintenance with hot swappable operation for all modules
 - Hot-swappable modular design enables users to replace standard modules on-line, no need to turn off the UPS or switch to bypass for maintenance. This feature greatly decrease maintenance time, maintenance cost and difficulty
- Load sharing technology
 - If any of the UPS modules fail, the load will be taken over by the rest of the modules without interruption. This increases the real time operation and power availability
- Easy expandability and scalability
 - System capacity is scalable up to 160KVA/160KW constructed by each power module of 20KVA / 20KW, single charger module provides maximum 30A charging current. Users can periodically increase power modules and charger modules according to load expansion plan to effectively control initial cost and reduce energy consumption per unit
- Integrated power distribution
 - Mains input, bypass, maintenance and output breakers are integrated inside the UPS. It is easy for installation and save the cost of users
- Flexible charging settings
 - Number of battery groups, battery capacity, charging rate and temperature compensation coefficient can be set up on the LCD screen of monitoring module. The charging module automatically adjusts the output current and output voltage according to the configured settings
- Configurable output voltage
 - Output voltage 380V / 400V / 415V is settable for different target applications, and fine-tuning of the output voltage can be done on the front panel
- High power density and small footprint
 - Modular 20 is featured with high power density of 20 KVA / 3U power module, and 160 KVA system has only 0.6 m² footprint, improving the room space utilization
- Front accessible maintenance
 - Top / bottom cable entry compatible for 160KVA cabinet

High availability

- Ultra wide input voltage range and frequency
 - Modular 20 has a wide input voltage range (-45% ~ 36%) and frequency range (40 ~ 70 Hz). It allows 100% unbalanced load in the range of 277 V ~ 520 V and support two modes of frequency conversion: 50Hz input / 60Hz output and 60Hz input / 50Hz output
- Dual input distribution
 - Dual-mains input design makes system availability higher. When both mains input and battery fail to provide power supply, the system can be uninterruptedly switched to bypass
- High output power factor 1.0
 - Output power factor 1.0 enables UPS to deliver more power and increase the load capacity

- Flexible battery quantity settings
 - The battery quantity (32 ~ 40pcs) can be configured flexibly. If there is battery failure, only removing the failed battery and resetting the battery quantity are required, no need to replace the whole group of battery
- Cold start
 - Battery cold start is available. In the absence of mains power, battery cold start function allows users to start the UPS with the batteries to meet the emergency
- Share battery pack in parallel operation, saving user's battery cost
 - Standard Emergency Power Off (EPO)

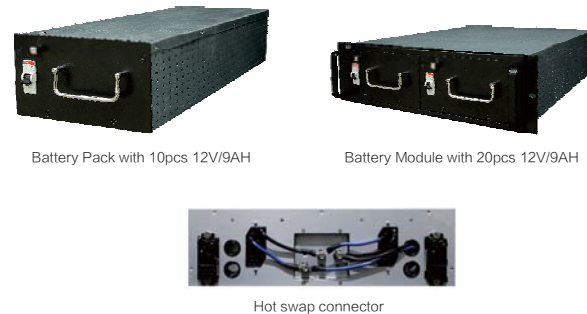
High intelligence

- Advanced multi-platform communications: standard RS232 / USB / RS485 / dry contacts, optional SNMP communication interfaces are used for monitoring UPS running status
- Advanced intelligent battery management function: flexible battery configuration (32 / 34 / 36 / 38 / 40 pcs selectable), settable charging current (0 ~ 30 A), automatic floating / equalizing charge control, periodic self-test, automatic temperature compensation, prediction of battery remaining capacity and discharge time

Available Options

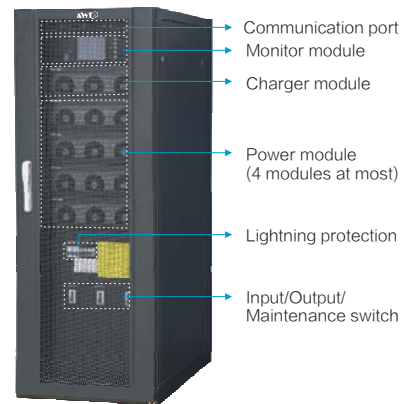
Communication Ports
SNMP and SMS alarm
Software
UPSmart / iStars
Others
Parallel kits
15-output PDU module
Built-in battery module
Battery temperature compensation

Battery module (Optional)



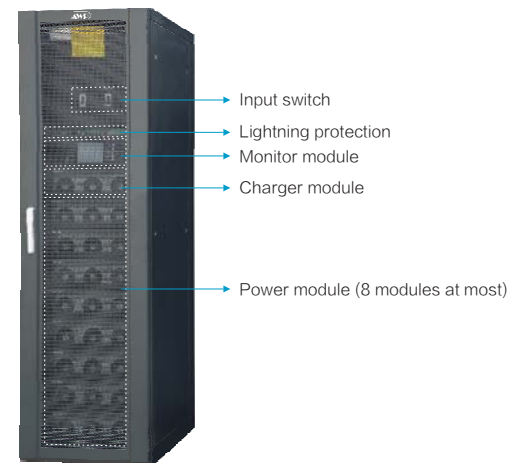
Modular 80KVA

80KVA cabinet is 1.6 meters high, and can configure 4 x20KVA power modules at most.



Modular 160KVA

160KVA cabinet is 2 meters high, and can configure 8 x20KVA power modules at most.



Technical specifications

MODEL	MOD 80	MOD 160
Capacity	20KVA ~ 80KVA 20KW ~ 80KW	20KVA ~ 160KVA 20KW ~ 160KW
Numbers of parallel module	1 ~ 4	1 ~ 8
Numbers of redundancy module	0 ~ 3	0 ~ 7
Rated capacity of each power module	20 KVA / 20KW	
INPUT		
Rated voltage	380 V / 400 V / 415 Vac	
Voltage range	204 ~ 242 Vac (load ≤ 50%); 242 ~ 277 Vac (50% < load ≤ 70%); 277 V ~ 520 Vac (70% < load ≤ 100%)	
Rated frequency	50 / 60Hz (auto-sense)	
Frequency range	40 ~ 70Hz	
Power factor	≥ 0.99	
Total harmonic distortion (THDI)	≤ 3%	
Bypass voltage range	Rated output voltage: - 40% ~ + 20% (settable via LCD)	
OUTPUT		
Voltage	380 V / 400 V / 415 Vac	
Voltage regulation	± 1%	
Frequency	Mains mode: Synchronized with utility Battery mode: 50 / 60Hz ±0.1%	
Power factor	1.0	
Waveform	Pure sine wave	
Crest factor	3:1	
Total harmonic distortion(THDV)	≤ 1% (linear load); ≤ 5% (non-linear load)	
Transfer time	0 ms	
Inverter overload capability	110% ~130%: transfer to bypass in 10 mins; 130% ~ 150%: transfer to bypass in 1 min; > 150%: transfer to bypass in 0.5 s	
Bypass overload capability	≤ 150%: long time running; > 150%: power off in 10 s	
BATTERIES		
DC voltage	±240Vdc (±192V / ±204V / ±216V / ±228Vdc selectable)	
Inbuilt battery of standard model	12 V / 9 Ah × 40 for each module	
Charging current	1 ~ 30 A / 60 A (settable via LCD)	
SYSTEM		
Efficiency	≥94%	
Display panel	5.7 Inches LCD touch screen	
Protections	Short-circuit, overload, over-temperature, overvoltage, undervoltage, IGBT pulse -by pulse current limiting, early warning of battery low voltage and battery overcharge protections	
Alarm	Battery mode, low battery, fans fault etc.	
EMI	EN62040-2	
EMS	IEC61000-4-2 (ESD); IEC61000-4-3 (RS); IEC61000-4-4 (EFT); IEC61000-4-5 (Surge)	
COMMUNICAITONS		
RS232 / RS485 / USB / dry contacts (standard)	Supports Windows® 98/2000/2003/XP/Vista/2008/7/8/10	
SNMP (option)	Power management from SNMP manager and web browser	
OTHERS		
Humidity	0~95% RH @ 0~40°C (non-condensing)	
Noise level	≤ 60dB	
Module dimensions (mm) W × D × H	482 × 590 × 131	
Module weight	28 kg / power module, 27 kg / charger module, 7 kg / monitoring module	
UPS dimensions (mm) W × D × H	600 × 1000 × 1600	600 × 1000 × 2000
UPS packaged dimensions (mm) W × D × H	700 × 1070 × 1760	700 × 1070 × 2160
UPS Net/Gross weight (kg)	225 / 245	290 / 310
Without inbuilt battery and power module		
Input / output / bypass breaker	Yes	Yes

* All specifications subject to change without notice.