

Power Solution and UPS Product Manual

CASE STUDY

MODULAR UPS

DIGITAL INTELLIGENT UPS

INTEGRATED MINI SERVER ROOM



SICON CHAT UNION Power Equipment Co., Ltd. specializes in the research and manufacturing of electrical and electronic equipment. SCU is the market leader in building the most reliable UPS. We take the lead in promoting and encouraging environment protection products.

SCU is ISO9001:2008 and ISO 14001:2004 certified, and SCU products are approved by CE, TLC and many other awards and certifications. We own proprietary intellectual property right of SCU modular UPS and power products.

SCU has established a powerful marketing and service network. With the HQ in China and a subsidiary in Europe we support customers and partners in more than 50 countries worldwide.

Upholding the customer-oriented principle, we provide customers with cost-efficient, green-quality, and high-reliability power distribution solutions through continuous technological innovation, and become the leader in power distribution and supply area.

SCU: Leader of Modular UPS Industry

Full range of UPS and power products

- Modular UPS
- Modular Inverter
- Intelligent Power Distribution System (IPDS)

Professional modular UPS supplier

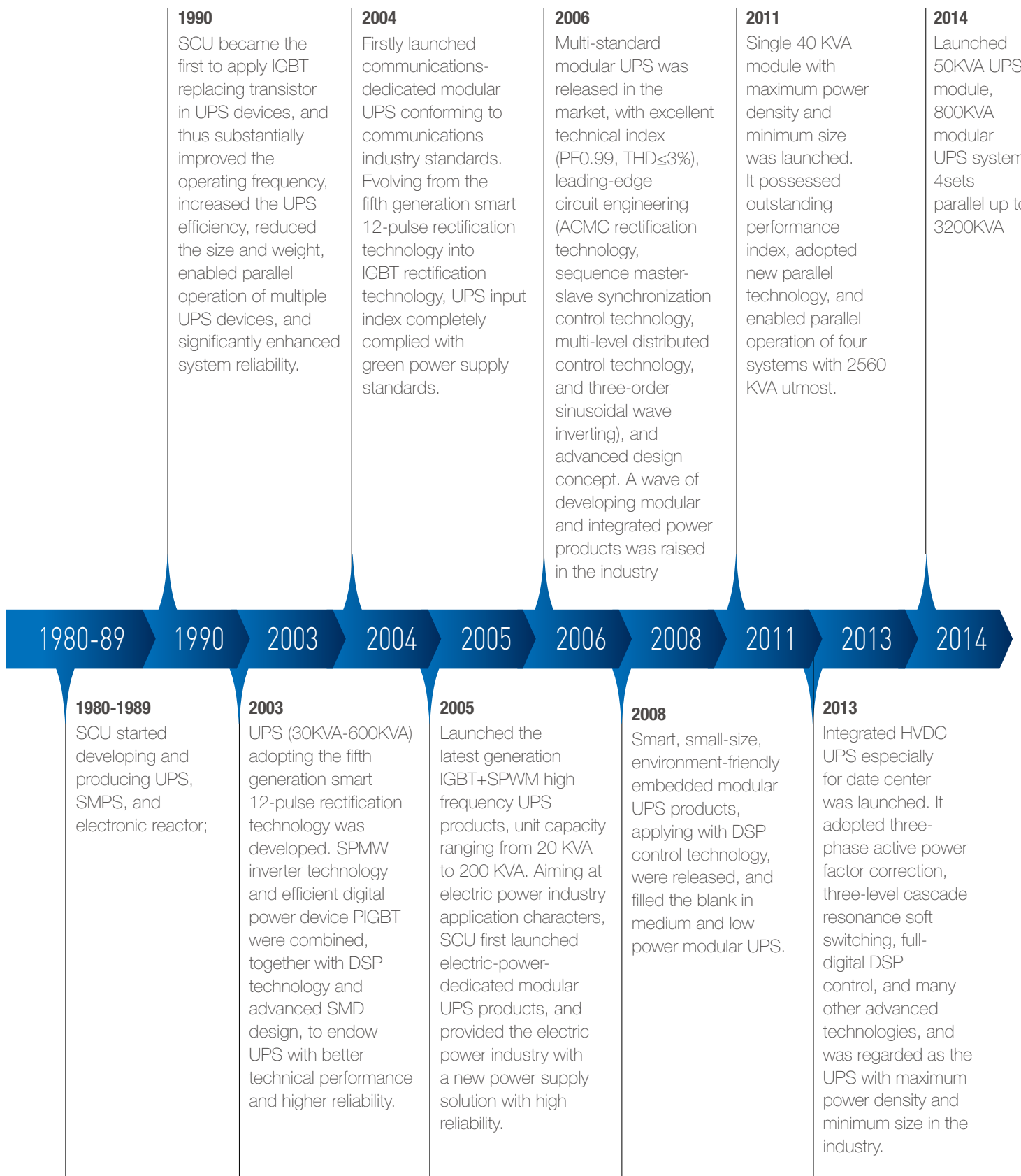
We have been developing modular UPS since 2002. Resulting in a full range modular UPS from 6KVA to 800KVA. Various types of UPS module: 6KVA, 10KVA, 25KVA, 50KVA.

Powerful marketing & service network

Company service center, throughout the world, provide a powerful marketing and service network.

Time to Join SCU

Join SCU and become a partner in the market of SCU modular UPS and power products. We will provide you the visibility to where the market is heading and where you can take your business. Under the terms of agreement you can market and distribute our product and solutions.



Modular UPS and Power Solutions

Advantage of SCU modular UPS

Modular UPS is taking the place of standalone UPS
Opening a new page of UPS development

Overview

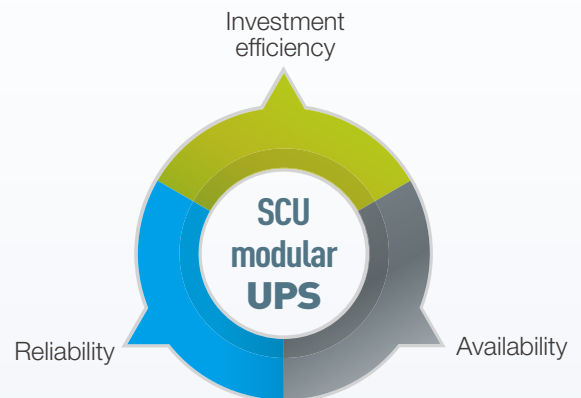
With the fast development of telecom and network technology, UPS is widely used in various industries and advanced UPS is greatly required. A new generation of integrated, flexible and reliable UPS is coming to the stage of UPS industry. SCU modular UPS is a true online double conversion modular UPS product. It could take the place of traditional 1+1/2+1 parallel system. It is a green power solution, with high input PF, Low THDI, high efficiency, stability and reliability. It has monitor software and communication interface for local and remote management. SCU has a full range of modular UPS product and many success customers in various industries.

In standard structure, SCU modular UPS takes small footprint. It is designed with UPS module as basic component and other excellent configurations, to provide perfect power solution to customers.

Features

High reliability

Reliability of UPS= MTBF+Redundancy. Hence redundancy design is the best way to increase reliability of UPS in current UPS industry.



SCU modular UPS marks a great breakthrough in UPS technology

Potential danger of Standalone UPSs parallel

- Standalone UPSs parallel cause circulation or current circulation, even system downtime.
- If STS of any paralleled UPS fails, the whole system will fail.
- If the load power is not well distributed, the system may fail.
- Great danger in online expansion, update and maintenance.
- In conclusion, the more standalone UPSs are parallel, the less reliable the system is.

SCU modular UPS design idea

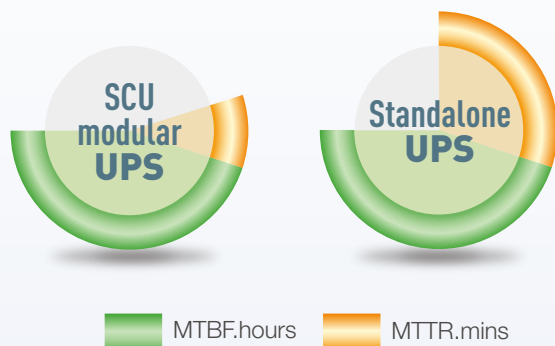
- Eliminate circulation affection caused by UPS module parallel
- Centralized bypass and STS. Control circuit and switch device are separated from main power circuit.
- Multi-level decentralized control. All of the UPS module, monitor module and STS module are online hot-swappable, which help to make online expansion, updated and maintenance very safe.
- Current sharing control technology is used in input, charger, and output of UPS module.
- In conclusion, SCU modular UPS decreases future value and provide complete protection to load and UPS.

So SCU modular is a revolution of UPS operation mode. It greatly improves reliability of UPS



High availability

Availability= $MTBF / (MTBF + MTTR)$
 MTBF= Mean Time between Failures
 MTTR= Mean Time to Repair



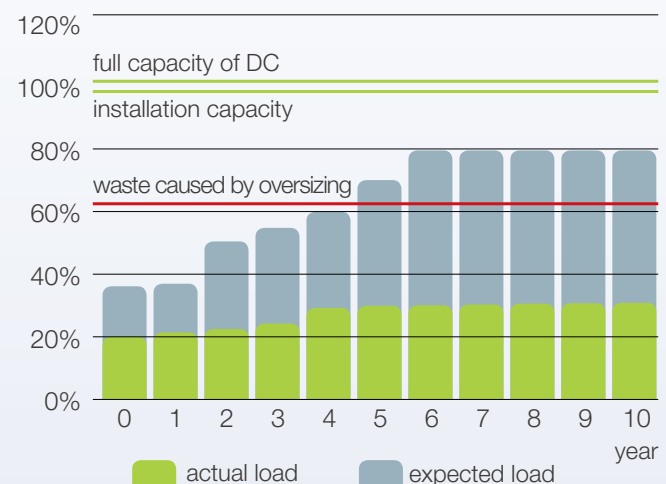
- If a UPS module fails, the UPS system will still work normally.
- No need of trouble shooting. Remove the failing module to solve the problem. So the user can conduct maintenance by themselves.
- MTTR is 5 minutes. Standalone UPS needs 8 hours
- Simple spare parts decrease maintenance costs.
- If the monitor module fails, UPS keeps normal operation
- Support by online maintenance at any time. Eliminate potential failure
- High reliability and stability ensure the best protection to the load.
- High availability provides full time protection to both load and UPS

High investment efficiency

Investment efficiency includes:

Reduce initial investment, expansion, maintenance costs

SCU UPS is a flexible modular structure. UPS module can be added or removed online, without forced shutdowns. It is pay as you grow.



Oversizing results in energy waste

Decrease operation cost

Final targets of power equipment: High efficiency, No pollution, Energy saving

Advantage of SCU modular UPS:

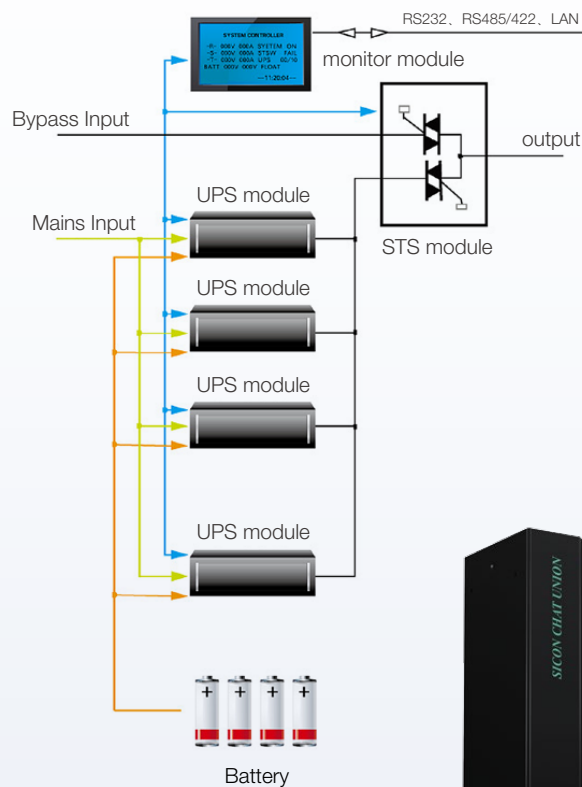
≥96% overall efficiency;

THDI≤3%;

Input PF≥0.99

Modular UPS

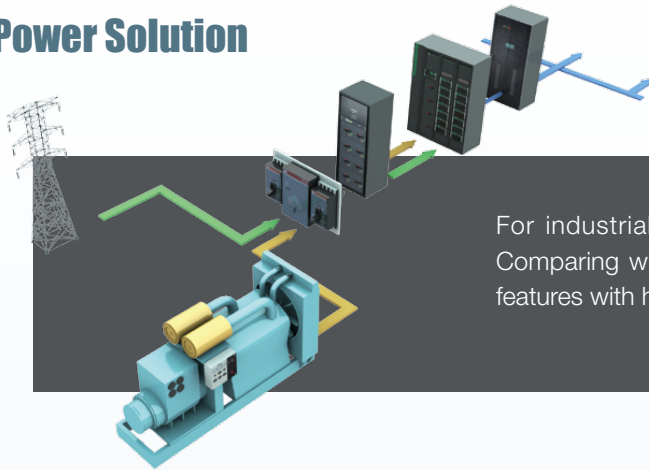
Topological diagram of SCU modular UPS



Modular UPS components
Pay as you grow



Power Solution

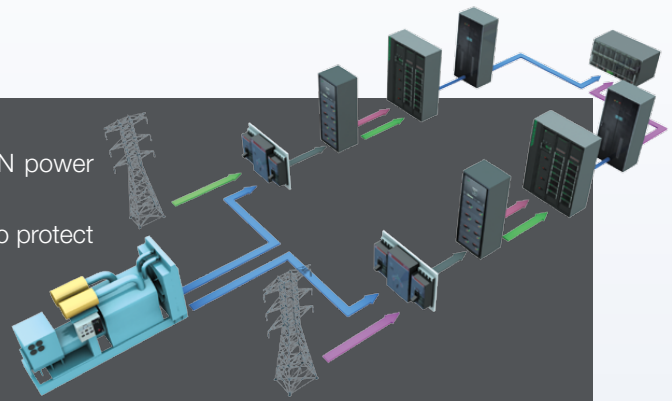


Solution1: INDUSTRIAL CASE STUDY

For industrial customers, we recommend modular UPS N+X solution. Comparing with standalone UPS 1+1 solution, modular UPS N+X solution features with high reliability and high cost-efficiency.

Solution2: TELECOM CASE STUDY

In the cases where UPS is used to power IT equipment, 2N power mode is the safest with the best security solution. 2N power solution, provide two independent power sources to protect the electrical systems against unexpected power failure. The loads are powered by both power sources, or the two sources feed power independently to their own loads.



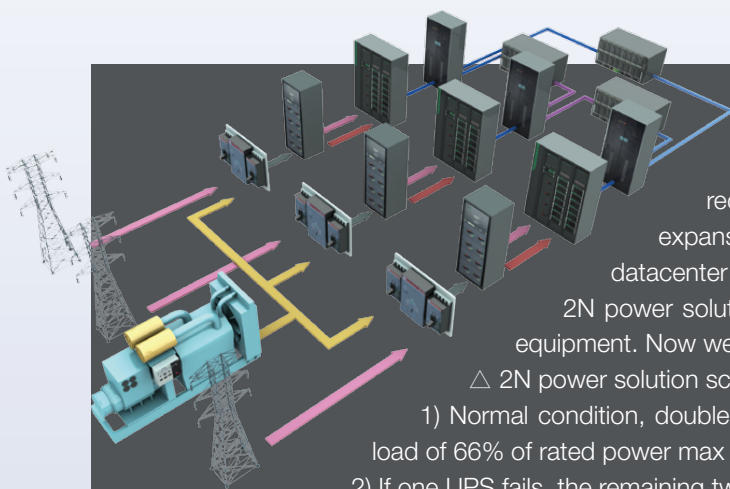
Solution3: DATACENTER CASE STUDY

There are many critical computers and other load equipment in modern datacenter, which has very strict requirement on power supply system. Easy maintenance, easy expansion, fault tolerance, cost-effective, and energy saving are all datacenter user's concern.

2N power solution and Δ 2N power solution both apply to the datacenter equipment. Now we introduce the Δ 2N power solution in details

Δ 2N power solution scheme

- 1) Normal condition, double bus solution for each group of load. Each UPS could bear load of 66% of rated power max
- 2) If one UPS fails, the remaining two UPSs share the three group of load.



CMS Series Modular UPS

Truly Modular UPS Full UPS functioned UPS Module



Choice of UPS Module (10kVA, 25kVA, 50kVA) result in Rational Redundancy
Modular, hot-swappable, field-replaceable STS, Monitor, UPS module
Scalable from 10kVA to 800kVA. Parallel-capable up to 3200kVA.

Product Overview

CMS UPS units are non-isolated, industrial level, green UPS, adopting advanced modular power protection concept. It delivers the best combination of rectifier, filter, charger, inverter and intelligent power protection. Applying innovative current sharing rectifier control, master-slave synchronization in sequence control, multi-level decentralized control and 3-level sine wave modulation technology, it features great efficiency, flexibility and reliability.

CMS Modular architecture can scale power as demand grows or as higher levels of availability are required. CMS UPS provide industry-leading efficiency, availability and performance for small, medium and large data centers and mission critical environments.

CMS FEATURES

- Rational redundant structure
UPS module: 10 kVA, 25 kVA, 50 kVA; System:
50kVA, 100kVA, 200 kVA, 300 kVA, 500 kVA, 800 kVA.
- Great performance index
overall efficiency $\geq 96\%$ (AC-AC), inverter efficiency $\geq 98\%$ (DC-AC), THDI $\leq 3\%$, and input PF ≥ 0.99
- N+X module-level redundancy UPS System
- Multi-level decentralized control technology and Master-slave synchronization in sequency control eliminating the system failure bottleneck
- Each module automatically equally shares the input and output current, all UPS modules share the batteries
- Battery management:
Battery discharge management, auto-transfer between floating and equal charging, temperature compensation
- Space-saving high density design, Rack-based for agility and aesthetics
- Monitor Function
C/S-Oriented Architecture Software which is available to monitor multiple UPS up to 600 sets;
B/S-Oriented Architecture which is available to check via internet browser
- Standard configuration
Manual bypass, SPD (Class C), RS232, RS485 Communication ports, Remote monitor software, dry contacts
- Optional configuration
Input/output Transformer, Battery Bank, IPDS (Intelligent Power Distribution System)

Wire in/out mode:
3/3, 3/1, 1/3, 1/1

SCU UPS

CMS Series Modular UPS



CMS-50/10

Adaptable 10 to 50 kVA power capacity

10 kVA UPS module (CM10)

Components: STS module, Monitor module, UPS module,
Power distribution

Top or bottom feed

Module dimension (mm): 482(W)*465(D)*89(H)

System dimension (mm): 600(W)*800(D)*1200(H)



CMS-100/10

Adaptable 10 to 100 kVA power capacity

10 kVA UPS module (CM10)

Components: STS module, Monitor module, UPS module,
Power distribution

Top or bottom feed

Module dimension (mm): 482(W)*465(D)*89(H)

System dimension (mm): 600(W)*800(D)*1600(H)



CMS-200/25

Adaptable 25 to 200 kVA power capacity

25 kVA UPS module (CM25)

Components: STS module, Monitor module, UPS module,
Power distribution

Top or bottom feed

Module dimension (mm): 482(W)*465(D)*133(H)

System dimension (mm): 600(W)*800(D)*2000(H)

CMS-300/25

Adaptable 25 to 300 kVA power capacity

25 kVA UPS module (CM25)

Components: STS module, Monitor module, UPS module,
Power distribution

Top or bottom feed

Module dimension (mm): 482(W)*465(D)*133(H)

System dimension (mm): 1400(W)*800(D)*2000(H)



CMS-500/50

Adaptable 50 to 500 kVA power capacity

50 kVA UPS module (CM50)

Components: STS module, Monitor module, UPS module,
Power distribution

Top or bottom feed

Module dimension (mm): 482(W)*700(D)*176(H)

System dimension (mm): 1400(W)*1000(D)*2000(H)



CMS-800/50

Adaptable 50 to 800 kVA power capacity

50 kVA UPS module (CM50)

Components: STS module, Monitor module, UPS module,
Power distribution

Top or bottom feed

Module dimension (mm): 482(W)*700(D)*176(H)

System dimension (mm): 2200(W)*1000(D)*2000(H)



SCU UPS

CMS Series Modular UPS

UPS Module

CM10, CM25, CM50

CM10, CM25, CM50 UPS module

- Rated power: 10KVA, 25KVA, 50KVA
- Online double conversion technology ensures reliable power supply
- High efficiency reduces power and cooling costs.
- Each UPS module is a fully functioned UPS, delivering a combination of converter, inverter, charger, and controller.
- It has various protections and intelligent communication ports. Dust proof design: IP30; online cleanable airfilter; functions well, even in poor environment.



CM10(2U)



CM25(3U)



CM50(4U)

Monitor Module

CMS-CSU

CMS-CSU monitor module

- Dual-core 16-bit processor
- Easy-to-read 240x64 LCD Touch Screen
- CMS decentralizes its controller in each UPS module. The monitor module is for display and communication only. Online replacement without forced shutdowns, STS module and UPS module.

Display of important operational information:

- General information
- System information
- Battery information
- Module information
- System output
- Event record
- Index setup



- Communication (local and remote)

RS232, RS485 communication interface

Output dry contacts

TCP/IP, SNMP (optional) for remote monitor

STS Module

CMS-STS

CMS-STS STS module

- Parallel of SCR and AC contactor
- High reliability and overload ability (1000% -1 min)
- Transfer time < 1 ms
- Functions such as self-diagnose, interlock and protection.
- RS485 communication
- Can be replaced easily without forced shutdowns.



UPS MODULE TECHNICAL SPECIFICATION

Model	CM10	CM25	CM50
Rated power	10 kVA	25 kVA	50 kVA
Input/Output mode	3/3, 3-phase + N + E		
Input PF	≥ 0.99		
THDI (%)	≤ 3%		
Overload ability	125%, 10mins		
max charging power	2.5KW	6KW	12KW
max heat dissipation	475W	1187W	2375W
Dimension (mm)	482(W)×465(D)×89(H)	482(W)×465(D)×133(H)	482(W)×700(D)×176(H)
Weight (kg)	16	20	40

UPS SYSTEM TECHNICAL SPECIFICATION

System model		CMS-50/10	CMS-100/10	CMS-200/25	CMS-300/25	CMS-500/50	CMS-800/50
Maximum power		50kVA	100kVA	200kVA	300kVA	500kVA	800kVA
UPS module model		CM10		CM25		CM50	
Mains Input	Input mode	3-phase +N +E, 1-phase +N +E					
	Input voltage	380V/220V±20%, 400V/230V±20%, 415V/240V±20%					
	Input frequency	50Hz±10%, 60Hz±10%					
	Power woke-in (Sec.)	60sec					
	THDI (%)	< 3%					
	Input PF	≥ 0.99					
Bypass Input	Input voltage	380V/220V±20%, 400V/230V±20%, 415V/240V±20%					
	Input frequency	50 Hz, 60 Hz					
	Range of Frequency Synchro	50 Hz±4%, 60 Hz±4%					
DC Input	Rated Input voltage	±384VDC					
	Input voltage tolerance	±345V~±440V DC					
Battery charging	Charging current limited	yes					
	Charging ability	10 hours (2 hours back up)					
	Stability of charging voltage	±1%					
AC output	UPS power factor	0.9					
	Output voltage	380V/220V AC, 400V/230V AC, 415V/240V AC					
	Output frequency	±4%; ±0.2%(battery supply)					
	Output voltage stability	±1%					
	Output voltage recovering time	< 20ms (load 0~100% change)					
	Overload ability	Operate 10mins with 125% load					
	Transfer from mains to battery supply	0ms					
	Transfer from bypass to inverter supply	<1ms					
	Peak factor	3:1					
	Waveform distortion	≤ 1% (linear load), ≤ 3%(non-linear load)					
	Overall efficiency	≥ 96% (AC~AC), ≥ 98% (DC~AC)					
	Load share precision	≤ 5%					
Operation environment	Ambient temperature	-25℃ ~ 60℃					
	Operating temperature	-5℃ ~ 40℃					
	Maximum operation altitude	≤ 1500m					
	Relative humidity	≤ 95% non-cadency					
	Protection degree	IP30					
	Cooling	Air cooling					
	Applicable safety standards	EN62040-1-1:2003 IEC60950-1:2001					
	Electromagnetic compatibility	EN62040-2:2006					
	Acoustic noise	≤ 55DB					
Others	Cabinet	Standard 19 inch cabinet					
	Monitor management system	UPSupervisor					
	Interface	RS232, RS485 and 8 dry contact, TCP/IP adapter, SNMP(optional)					
	Display	Touch LCD/LED Screen					
	Weight (kg)	150	200	240	470	500	700

ERMS Series Modular UPS

Truly modular UPS

Full UPS functioned UPS Module

Modular, hot-swappable, field-replaceable Monitor, UPS module
Embedded modular power protection with ultra high availability and efficiency for Small Data Center.

Scalable from 6 kVA to 36 kVA. Wire in/out mode: 3/3, 3/1, 1/3, 1/1

SYSTEM OVERVIEW

ERMS series UPS is an embedded modular UPS of low and medium power developed by SCU. With flexible structure, it could be embedded in standard 19 inch cabinet or work independently for de-centralized power supply. It features superb input and output performance indexes. As a product with the smallest size, the highest efficiency and the greatest power density in the industry, it boasts an extremely high cost-efficiency.





ERMS FEATURES

- Rational redundant structure
UPS module: 6KVA; System: 12 KVA, 24 KVA, 36 KVA
- Great performance index
overall efficiency $\geq 95\%$ (AC-AC), inverter efficiency $\geq 98\%$ (DC-AC), THDI $\leq 3\%$, and input PF ≥ 0.99
- N+X module-level redundancy UPS System
- Multi-level decentralized control technology and Master-slave synchronization in sequency control eliminating system failure bottleneck
- Each module automatically equally shares the input and output current, All UPS modules share the batteries
- Battery management:
Battery discharge management, auto-transfer between floating and equal charging, temperature compensation
- Monitor Function
C/S-Oriented Architecture Software which is available to monitor multiple UPS up to 600 sets;
B/S-Oriented Architecture which is available to check via internet browser
- Standard configuration
Manual bypass, RS232, RS485, dry contacts, TCP/IP Adapter for local and remote communication.
- Optional configuration
Input/output Transformer, Battery IPDS (Intelligent Power Distribution System)

ERMS Series Modular UPS



ERMS-12

12KVA, 2module rack
3U(H)*600(D)*19"(W)



ERMS-24

24KVA, 4module rack
5U(H)*600(D)*19"(W)



ERMS-36

36KVA, 6module rack
7U(H)*600(D)*19"(W)



ERM-06

Rated power: 6KVA
Complete UPS functions: AC/DC, DC/AC, charger
and control circuit.



ERMS-CSU

User friendly LCD display.
Functions include displaying, communication,
alarming and managements.

UPS MODULE TECHNICAL SPECIFICATION

Model	ERM-06
Capacity	6KVA
Input/Output mode	3/1
Input PF	≥ 0.99
THDI (%)	≤ 3%
Overload ability	Comply to system overload requirement
Charging power	1600W
Weight (kg)	7

UPS SYSTEM TECHNICAL SPECIFICATION

System model		ERMS12/6	ERMS24/6	ECMS36/6
Maximum power		12KVA	24KVA	36KVA
UPS module model		ECM-06		
Mains Input	Input mode	3-phase +N +E, 1-phase +N +E		
	Input voltage	380V/220V±25%, 400V/230V±25%, 415V/240V±25%		
	Input frequency	50Hz±10%, 60Hz±10%		
	Power woke-in (Sec.)	60secs		
	THDI (%)	< 3%		
	Input PF	≥ 0.99		
Bypass Input	Input voltage	380V/220V±20%, 400V/230V±20%, 415V/240V±20%		
	Input frequency	50 Hz, 60 Hz		
	Range of Frequency Synchro	50Hz±4%, 60Hz±4%		
DC Input	Rated Input voltage	±240VDC		
	Input voltage tolerance	±216V~±246VDC		
Battery charging	Charging current limited	yes		
	Charging ability	10 hours (2 hours back up)		
	Stability of charging voltage	±1%		
AC output	UPS power factor	0.9		
	Output voltage	220,230,240VAC	380/220,400/230,415/240VAC	
	Output frequency	±4%; ±0.2%(battery supply)		
	Output voltage stability	±1%		
	Output voltage recovering time	20ms (load 0~100% change)		
	Overload ability	Operate 10mins with 125% load		
	Transfer from mains to battery supply	0ms		
	Transfer from bypass to inverter supply	<1ms		
	Peak factor	3:1		
	Waveform distortion	≤ 1% (linear load), ≤ 3%(non-linear load)		
	Overall efficiency	≥ 95% (AC~AC), ≥ 98% (DC~AC)		
	Load share precision	≤5%		
Operation environment	Ambient temperature	-25 C ~ 60 C		
	Operating temperature	-5 C ~ 40 C		
	Maximum operation altitude	≤ 1500m		
	Relative humidity	≤ 95% non-cadency		
	Protection degree	IP30		
	Cooling	Air cooling		
	Applicable safety standards	EN62040-1-1:2003 IEC60950-1:2001		
	Electromagnetic compatibility	EN62040-2:2006		
	Acoustic noise	≤ 55DB		
Others	Cabinet	Embedded in standard 19 inch cabinet		
	Monitor management system	UPSupervisor		
	Interface	RS232, RS485, 2 dry contact, TCP/IP adapter		
	Display	LCD/LED		
	Dimension (mm)	480(W)*600(D)*133(H)	480(W)*600(D)*222(H)	480(W)*600(D)*311(H)
	Weight (kg)	12	16	20

DSP Series Rackmount UPS

1KVA-20KVA

Wire in/out mode: 1/1, 1/3, 3/1, 3/3



DSP Series Rackmount UPS: High frequency On-line double conversion technology; Universal Rackmount and Tower model.

Parallel function: AC output can be connected in parallel. 1+1 redundancy in power module protects the users' data center.

Application field: High power density data center, bank, security, vending machines system, Telecom/VoIP, etc..

Function: clean and persistent power supply, safeguards key equipment and Apps against shutdown, data loss and process interruption caused by power failure.



- Universal Rackmount and Tower model; Rackmount DSP could be embedded in 19 inch standard cabinet.
- N+1 parallel connection is possible, redundant system ensures a more reliable power supply to the users' load.
- Intelligent fan speed regulation. System adjusts cooling and sends out alarm according to the temperature in the cabinet.
- Intelligent battery management. System controls equalisation and float charging, temperature compensation, discharge timing.
- Variety of intelligent communication. Remote monitoring and control , easy management, suitable for unattended operation.
- Variety of alarms. Real time visual alarm status available.
- Accurate performance via DSP control technology. Variety of protection functions. For example, AC over/under voltage, battery input over/under voltage, inrush current, over temperature, output overcurrent, short circuit protection, output over/under voltage, monitor alarm, audible and visual indication, remote notification, etc.

DSP Series Rackmount UPS

DSP11-1KVA/2KVA/3KVA

- Rated power: 1KVA/2KVA/3KVA
- Wire in/out mode: 1/1
- Rack mount and Tower
- S: internal battery
- L: external battery pack



DSP11-6KVA/10KVA

- Rated power: 6KVA/10KVA
- Wire in/out mode: 1/1
- Rack mount and Tower
- Optional battery pack:
Lead acid battery or Lithium battery

DSP-10KVA/15KVA/20KVA

- Rated power: 10KVA/15KVA/20KVA
- Wire in/out mode: 1/1, 1/3, 3/1, 3/3
- Rack mount and Tower
- Optional battery pack:
Lead acid battery or Lithium battery



Lithium battery pack

Model	Capacity (AH)	Dimension (mm)	Weight (kg)	Model DSP	Full load backup time	Half load backup time	Remarks
DUPL2440	24V40AH	430(W)*395(D)*86(H)	10	DSP11-1KVA-24L	55 mins	120 mins	
DUPL4820	48V20AH	430(W)*395(D)*86(H)	11	DSP11-2KVA-48L	24 mins	55 mins	
DUPL7215	72V15AH	430(W)*395(D)*86(H)	12	DSP11-3KVA-72L	17 mins	39 mins	
DUPL24015	240V15AH	430(W)*622(D)*131(H)	30	DSP11-6KVA	34 mins	75 mins	Two battery packs for one UPS (±240V)
				DSP11-10KVA	18 mins	40 mins	
DUPL24015	240V15AH	430(W)*622(D)*131(H)	30	DSP-10KVA	40 mins	95 mins	
				DSP-15KVA	25 mins	55 mins	
				DSP-20KVA	18 mins	40 mins	

Model	DSP11-1KVA-24S DSP11-1KVA-24L	DSP11-2KVA-48S DSP11-2KVA-48L	DSP11-3KVA-72S DSP11-3KVA-72L	DSP11-6KVA	DSP11-10KVA	DSP-10KVA	DSP-15KVA	DSP-20KVA
Power	1KVA	2KVA	3KVA	6KVA	10KVA	10KVA	15KVA	20KVA
DC input								
Voltage	24VDC	48VDC	72VDC	240VDC		±240VDC		
Max charging current	5A			3A	5A	2A	3A	4A
Battery	S:14 mins half load 4 mins full load	S:14 mins half load 4 mins full load	S:14 mins half load 4 mins full load	External battery pack				
	L:external battery	L:external battery	L:external battery					
AC input								
Input rated voltage	1 phase, 3 Wire, 220V					3 phases, 4 Wire, 380V		
Input voltage range	120 Vac~276 Vac			176 Vac~264Vac		304 Vac~456 Vac		
Input current	4A	8A	12A	34A	57A	3*19A	3*28A	3*38A
Input current harmonic	≤ 5% Rated input and linear load			≤ 3% Rated input and linear load				
Input power factor	0.99 (100% linear load)							
Input frequency	40~70Hz			45~56Hz(output rated linear load)				
Frequency Synchro range	±10%							
Frequency synchro rate	0.5~2Hz/s							
AC output								
AC output voltage	220Vac			220Vac/230Vac/240Vac				
Output power factor	0.9			0.9				
Output active power	900W	1800W	2700W	5.4KW	9KW	9KW	13.5KW	18KW
Output frequency	50HZ			50/60Hz				
Output frequency stability	±0.2			±0.1(battery power)				
Output THDU	3% (linear load)							
Output voltage accuracy	±2%							
Transient range	±5% (load changing 0% - 100% - 0%)							
Transient duration	20ms							
Peak factor	3:1 (rated input)							
Output delay at power-on	5~60s							
Overload	10min 125% rated load							
Overall efficiency	≥ 90%			≥ 93%				
Transfer time Bypass-Inverter	≤ 2ms							
parallel current unbalancedness	5% (> 50% load)							
Communication	RS232/RS485(optional) / LAN (optional)							
Others								
Mounting	Rackmount / tower							
Acoustic noise	≤40dB	≤45dB		≤50dB	≤55dB	≤58dB	≤58dB	≤58dB
MTBF	350000	350000	350000	100000h				
heat-dissipating method	Forced air cooling							
Protection level	IP20							
Enclosure material	Cladding aluminum galvanized , cold-rolled steel sheet, panel: plastic spraying processing							
Dimension (mm)	430(W)*402(D)*88(H)			430(W)*622(D)*88(H)		430(W)*622(D)*132(H)		
Weight (kg)	S: 20kg L: 10kg	S: 22kg L: 10kg	S: 27kg L: 10kg	17kg		25kg		

Lead acid battery pack

Model	Capacity (AH)	Dimension (mm)	Weight (kg)	Model DSP	Full load backup time	Half load backup time	Remarks
DUP1204L3	24V24AH	430(W)*395(D)*86(H)	24	DSP11-1KVA-24L	20 mins	50 mins	
DUP1204L2	48V12AH	430(W)*395(D)*86(H)	24	DSP11-2KVA-48L	9 mins	20 mins	
DUP1204L6	72V8AH	430(W)*395(D)*86(H)	24	DSP11-3KVA-72L	4 mins	12 mins	
DUP1208M1	240V8AH	430(W)*622(D)*131(H)	60	DSP11-6KVA	10 mins	23 mins	Two battery packs for one UPS (±240V)
				DSP11-10KVA	4 mins	12 mins	
DUP1208M1	240V8AH	430(W)*622(D)*131(H)	60	DSP-10KVA	12 mins	32 mins	
				DSP-15KVA	6 mins	17 mins	
				DSP-20KVA	4 mins	12 mins	

SCU UPS

DSM Series UPS

20KVA-400KVA
Wire in/out mode: 3/3

DSM is a high frequency, on-line double-conversion uninterruptible power supply. 0.9 output PF to suit any load. In the same time, 6 system parallel is available, which meets the requirements of users' demand. DSM design and high control technology provides better protection and higher reliability on load.

The UPS has been designed to protect critical information and telecommunications systems, networks, services and processes which operation could be disrupted by poor power quality and/or breaks in their mains power supply.

Application: Finance, Transportation, Broadcast & TV network, Data processing center, HealthCare, Communication, E-Business, etc.

Transportation

Finance

Data
processing
center

Broadcast
& TV network

HealthCare

- ZERO IMPACT SOURCE

- low input current distortion - less than 3%, high input power factor 0.99;
- Delayed start-up protects its power supply sources (mains or generator) from any harmonics and reactive power generated by the loads it is powering.

- BATTERY CARE SYSTEM

- Two voltage level recharge meeting the IU characteristic;
- Temperature compensation: to avoid excessive voltage being applied to the batteries in a high ambient
- Extendable back-up time options using battery extension cabinets
- Battery test: to detect performance degradation and predict battery failure.
- Cycle recharge function. Battery could be maintenance according battery manufacturer's requirements, in order to extend the life of battery.
- "Trial charging" recharging function, in order to avoid voltage unbalance after changing battery.
- Extension inverter design capacity, which supplies 115% load (PF0.8) for a long time.
- Full active power from 0.9 capacitive to 0.9 inductive load.
- High efficiency design, more than 95% (online mode)
- DSP microprocessor technology ensures excellent static and dynamic characteristics in any operation situation.
- Simple and convenient separation bypass
- Variety of intelligent communication. Remote monitoring and control, easy management, suitable for unattended operation.
- optional isolation transformer.



DSM-20

Rated power: 20KVA

Dimension (mm): 350(W)*660(D)*670(H)

Weight: 120Kg



DSM-30 DSM-40

Rated power: 30KVA/40KVA

Dimension (mm): 400(W)*750(D)*1000(H)

Weight: 135Kg/145Kg

SCU UPS

DSM Series UPS



DSM-60 DSM-80 DSM-100 DSM-120

Rated power: 60KVA/80KVA/100KVA/120KVA

Dimension (mm): 600(W)*950(D)*1600(H)

Weight: 190Kg/200Kg/220Kg/380Kg



DSM-160 DSM-200

Rated power: 160KVA/200KVA

Dimension (mm): 800(W)*950(D)*2000(H)

Weight: 450Kg/500Kg



DSM-300 DSM-400

Rated power: 300KVA/400KVA

Dimension (mm): 1200(W)*950(D)*2000(H)

Weight: 700Kg/900Kg

Model	DSM-20	DSM-30	DSM-40	DSM-60	DSM-80	DSM-100	DSM-120	DSM-160	DSM-200	DSM-300	DSM-400
Power	20KVA	30KVA	40KVA	60KVA	80KVA	100KVA	120KVA	160KVA	200KVA	300KVA	400KVA
INPUT											
Nominal voltage	380Vac										
Voltage tolerance	-45% - 25%;±25% full load,-25% - -45% derating,-45% with 72% load										
Frequency tolerance	45 - 65Hz										
Input mode	three-phase + N										
Power Factor	> 0.99										
THDI	≤ 3%										
OUTPUT											
Power factor	0.9										
Voltage	380Vac±1%										
THDU	< 1% with linear load / < 2% with non-linear load										
Synchronous frequency accuracy	< 0.001%										
Battery tolerance	50Hz±0.5 ~ ±2										
Overload	110%,5h; 125%,10min; 150%,1min; > 250%,200ms										
Phase discrete	120°±1°(100% unbalance load)										
Admissible three-phase voltage unbalance factor	±1%(balance load);±1.5%(100% unbalance load)										
Peak factor	5:1										
Bypass voltage	±5% - ±25%										
Overall efficiency	≥ 98%										
Transfer time	0ms										
Transient dynamic response range	±2%(load changing 0 - 100%)										
Transient dynamic response recovery time	10ms										
STS overload ability	20 times current(100ms)										
Panel display	LCD+LED										
Redundant parallel technology	directly via Parallel board										
Environment											
Operation temperature	-5℃ - +45℃										
Storage temperature	-25℃ - 70℃										
Continuous operation temp.	Max 40℃ , 8hours										
Relative humidity	0- 95%,non-cadency										
Max operation altitude	3000m (no derate)										
Acoustic noise (1m distance)	52dB										
OTHERS											
Anti-interference	EN61000-4-2,3,4,6,8,11 Level III ,EN61000-4-5 Level IV,EN50091-1-1-1.A										
MTBF (system)	> 250,000 hours										
MTTR (Board level maintenance)	10mins										
Surge protector	voltage pulse 10/700us, current pulse 8/20us,20KA										
Protection Level	IP21(IP31 Option)										

SCU UPS

Genius 6000

Integrated, mini, server room



Overview

Genius 6000 integrates rack, power, cooling, and environment monitoring for a complete server room solution. It is a fully integrated, industry-leading plug-and-play solution with a ready to use IT rack space. The standard and modular server room architecture dramatically reduces time and complexity from concept and design up to installation. Complete physical infrastructure delivers high availability, efficiency and low Total Cost of Ownership.

Features and benefits

Fully integrated - complete physical infrastructure, factory assembled and testing

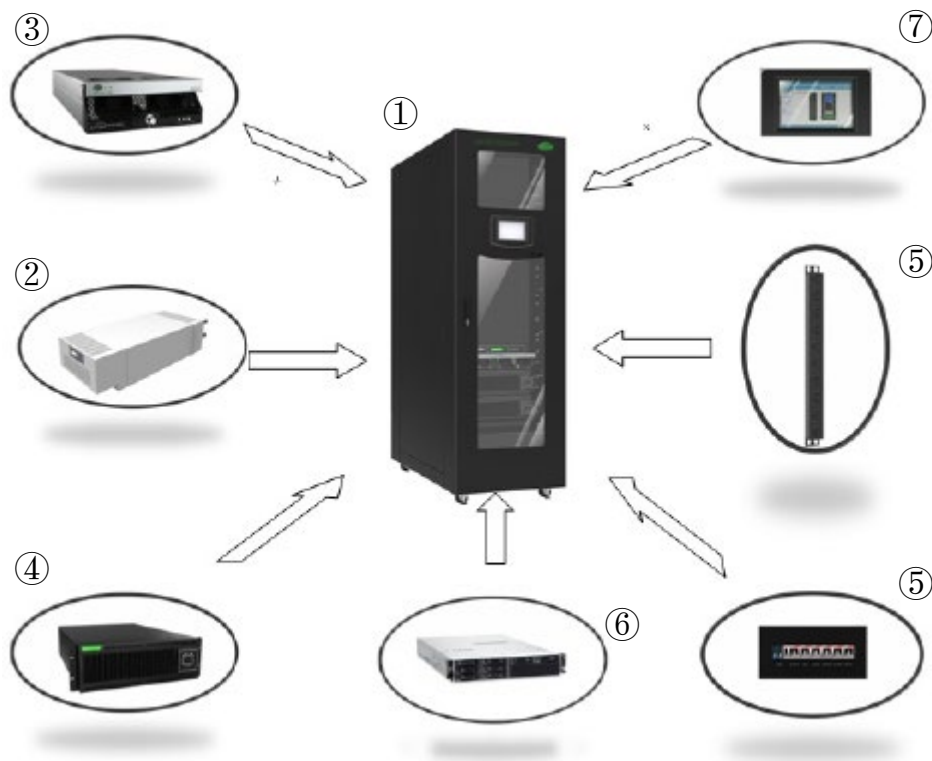
Fast deployment - ready to use from one day, simple installation and configuration reduces time to deploy

Small foot print - 0.72sqm foot print, suitable for office environment, no need of separate server room

Dust protection, noise insulation - fully closed operation, cold/hot air is circulated within the rack, low noise level.

Integrated monitor - energy usage monitoring, remote monitoring and automation of your server room

Energy saving - inbuilt air-conditioning accurately controls temperature inside the cabinet, small energy consumption



1. Standard rack cabinet

- Standard structure, available space for rack-mounted IT equipment
- Totally enclosed design. Noise reduction, sound insulation, dust-proof
- Circular air course for cold air from air conditioner, achieving closed heat dissipation
- Emergency fans automatically run during power outages ensuring continuous cooling

2. Precision Air Conditioning

- 4.5KW cooling capacity, Split type: 5U, Integral type: 10U
- frequency conversion technology, microcomputer temperature control
- refrigeration, dehumidification, air supply and dust elimination.
- R134 compressor, high performance, industrial fan
- Dual safety condensed water collecting device

4. UPS

- Two available options: ERMS-12 modular UPS, or DSP-6KVA rack mount UPS
- provide pure uninterruptable power supply to critical IT equipment
- When AC power off, battery provide backup time to load
- Shutdown servers according to load priority

3. lithium battery pack

- High-rate, power type, lithium batteries
- Discharge capacity of 3.7C, adapt to various load
- Battery Management System (BMS) with functions of battery status monitoring and estimate battery remaining, charging and discharging control, balancing and so on

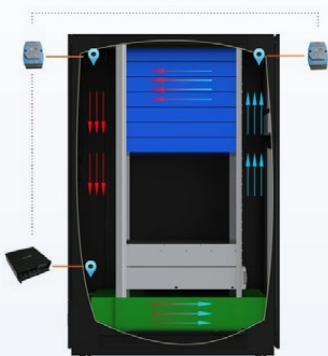
SCU UPS

Genius 6000



5. Power management & PDU

- Power management breakers for power, cooling, lighting; inbuilt SPD
- PDU: PDU distribute power to IT equipment



6. Environment monitoring

- Detect temperature, humidity, access control, water cut and smoke inside the cabinet
- Carry out alarm and fault treatment timely

7. Integrated monitoring

- User friendly colorful touch screen
- Real time monitoring and display of environmental and operation parameters
- Alarm management, local alarm, network alarm and self-protection
- SNMP V1/V2 protocol; RJ45 interface

Traditional Server Room vs. Genius 6000

	Traditional Server Room	Genius 6000
Room preparation	Required and complex	Not required
Design and construction	Multi-vendor, Time-consuming	Factory designed and pre-configured
Power distribution	Require wall mounted DB box	Build in system
Cost of preparation	High	Low
Install period	2-3 weeks	1 day
Area required	10 - 20sqm	0.72sqm
Dust prevention	Usually not available, high cost	Fully enclosed system
Noise level	High noise	Low noise, suitable for office
Monitoring system	Individual systems Low capability Low integration	Fully Integrated system Factory Installed / Connected / Tested
Relocation cost	High, Difficult	Low, Easy

TECHNICAL SPECIFICATION

model		Genius 6000	
cabinet	Dimension (mm)	600(W)*1200(D)*1800(H)	
	Available space	38U	
	Server space	24U-30U	
	Area	0.72m2	
	Color	RAL7047	
	IP degree	IP30	
UPS	Model	ERMS-12	DSP11-6KVA
	Type	Embedded modular UPS	Rack mount UPS
	Rated power	6KVA+6KVA	6KVA
	AC Input	220V/3Ph/50Hz	220V/1Ph/50Hz
	Input PF	0.99	0.99
	DC input	±240VDC	240VDC
	Output	220V/1Ph/50Hz	220V/1Ph/50Hz
	Output PF	0.9	0.9
	Efficiency	95%	93%
	Acoustic noise (dB)	<55	<55
Battery	Backup time	10min	10min
	Rate voltage	±240VDC	240VDC
	Discharge temperature	-20~+60°C	
	Max discharge current	25A	
	Storage temperature	-20~+60°C	
	Discharge time	≥300 times(60%)	
Cooling	Air conditioning type	Split type	Integral type
	Cooling capacity (W)	4500	4500
	Rated power (W)	1250	2000
	internal circulation air (m³/h)	830	1200
	external circulation air (m³/h)	1200	2000
	Refrigerant	R407C	R407C
	outdoor unit noise (dB)	70	--
	indoor unit noise (dB)	<65	<65
Environment monitoring	Temperature sensor	-40° to +125°C, ±2°C	
	Humidity sensor	0~100%	
	Water leak detection	Water Leakage electrode detection	
	Door access sensor	limit switch	
	Smoke detection	combustible gas, smoke	
Integrated monitoring	LCD	colourful touch screen	
	Communication	SNMP V1/V2 protocol; RJ45 interface	

SCU UPS

Success Story

Range International Information Group Data Center

Background:

Range International Information Group data center occupies 32,866.24m² building area. According to Range's actual situation and high requirements of cloud computing, the integrated data center works as the pivot of communications and IT information system. It covers all aspects including infrastructure, technology and system architecture, application and data, service and IT process, organization and operation, enterprise and information strategy. Therefore, the infrastructure, network, computing resources, management system planning, and design and construction of the data center, must comply with the data center's feature, developing trend, and performance.

Solution:

SCU applies modular UPS devices operating in dual-bus redundancy mode, with every in N+2 mode and the system in 2N mode, to meet power supply redundancy requirements and provide reliable power protection for equipment operation.

21 sets of CMS-480 modular UPS devices

Benefits:

High performance and extensibility;

Safe, stable, and saving;

Energy-saving, environment-friendly, and emission-reducing;



China Telecom

Background:

China Telecom data center is a large IDC data center in China, and provides 7x24 all-weather services with high reliability, stability, and safety. To meet increasing traffic and service range, and build green communications network, They select UPS products at a strict standard of high quality, high reliability, and environment-friendly.



Solution:

SCU applies CMS-400 KVA system configured with CM40 UPS module (single module capacity of 40 KVA), to form dual-bus integrated solution.

Benefits:

High stability, reliability, extensibility, and efficiency;

Having the lowest harmonic in industry and more powerful load capacity;

CMS quality of low-carbon and green exactly agrees with the idea of "Green Communications" and purpose of energy-saving in the computer room proposed by China Telecom.

Datacenter in Korea

Background

It is a newly-built government datacenter in Korea, requiring reliable and safe power supply to critical load equipment. Meanwhile, high efficient and energy saving is very important.

Solution

CMS-640 modular UPS, 95% overall efficiency

3 sets CMS-640 parallel up to 1920KVA

input/output power distribution panel and maintenance bypass panel

Benefits

hot swap module, online maintenance

N+X redundancy, high reliability

high efficiency, energy saving



APEC 2014

Background :

APEC summit is the largest and top level major international multilateral activity held in China After 2008 Olympic Games and 2010 Shanghai Expo, APEC 2014 is another big chance for SCU UPS to serve world level event. Since APEC summit is special, significant and real-time in nature, the Central Preparatory Committee states that all services must be strictly ensured during the summit.

Solution :

CMS modular UPS, 10 sets; DSP11 standalone UPS, 20 sets

Overall power supply solution, first-class on site team

Benefits :

Ensure foolproof power supply

High reliability, easy expansion, high efficiency and low THDI

Low-carbon and environmentally friendly





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