MC2000

MC2000 series is a new generation of small and medium modular data center solution which integrates the basic data center equipment of the power supply and distribution system, UPS system, refrigeration system, emergency ventilation module, cabinet and airflow management, wiring and monitoring management system into one or multiple closed cabinets. One set of cabinet is a complete data center. MC2000 single–row modular data center divides a row of cabinet data center into sub–modules of power distribution, refrigeration, UPS, battery, cabinet and airflow management and monitoring management. Each sub–module is factory prefabricated so that they can be assembled to form a row of modular data center.

MC2000 has three types of aisle containment: hot–cold aisle containment (recommended), cold aisle containment and natural cooling. Users can select one type of them according to the actual use. It is flexible and applicable for various occasions.

The basic unit of MC2000 is four–cabinets based (1 equipment integration cabinet + 3 IT cabinets), maximum 12 cabinets can be supported.

MC2000 row–based modular data center is one of the ideal solutions of small and medium data center, which reduces the construction complexity of small data center and solves the problem of the specialization, standardization, construction speed and expansion of small data cneter construction. Moreover, it has the advantages of fast construction, high energy efficiency, various configurations and easy maintenance.

Applications

Small and medium–sized data centers

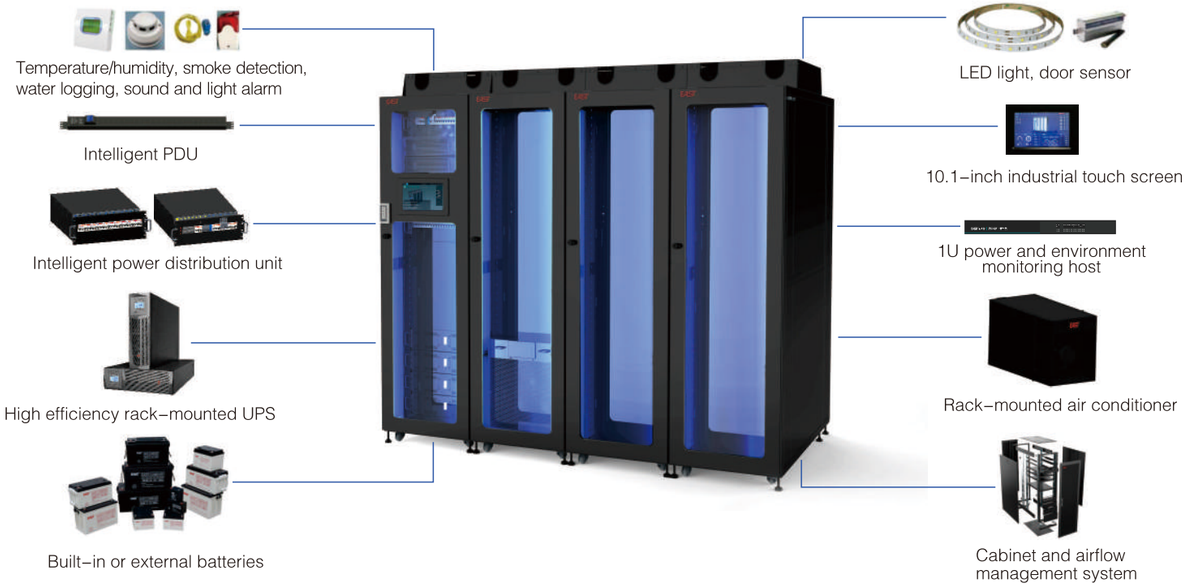
Distributed business network rooms

Small and medium–sized network equipment rooms

Information centers of township–level state organs and public institutions

Branches' device rooms of large companies

Data centers of small and medium –sized enterprises



Features

Simplification

- MC2000 overall system standard modular structure design, each sub–module is highly versatile. The sub–modules of MC2000 are prefabricated by factory and can be assembled on site, which has low requirement for installation place. The equipment can be put into use immediately after the arrival. In the process of utilization, it only needs one monitoring and management system during use with no need of facing multiple interfaces.

High energy efficiency

- MC2000 has three types of aisle containment: hot–cold aisle containment (recommended), cold aisle containment and natural cooling. Thereinto, cold aisle containment can significantly improve the utilization of cooling capacity, hot aisle containment can improve the refrigerating efficiency of air conditioner, hot–cold aisle containment can improve the utilization of colling capacity as well as the refrigerating efficiency of air conditioner. Its PUE (Power Usage Effectiveness) is industry–leading.

Flexibility

- Overall system standard modular structure design, each sub–module is highly versatile. Multiple solutions can be implemented by combining them as needed.
- The later stage can realize expansion easily.

Reliability

- Adopts hot–cold aisle containment, cold aisle containment and natural cooling to adapt to multiple environments.
- Overall system standard modular structure design can avoid system design problems.
- System fault–tolerant design helps high reliability.
- Strong and weak current separation design can make less electromagnetic interference.

Intelligence

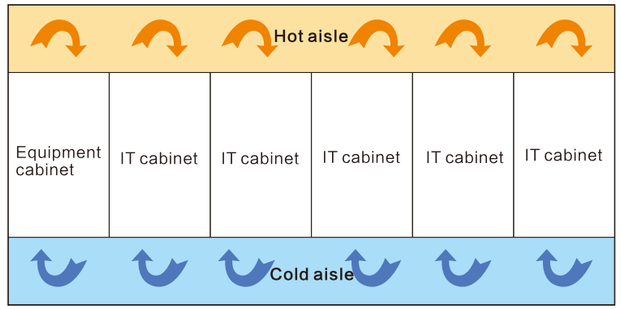
- MC2000 has built–in monitoring and management system and is configured with 10.1–inch industrial touch screen that can be used not only to view the parameters of the power supply and distribution, air conditioner, environmental variable and UPS but also to remotely monitor the operating parameters inside MC2000. Moreover, it can be connected to the superior monitoring platform via the internet for multi–network centralized monitoring and efficient management.

Technical Data

Overall system parameters	Number of cabinets for single module	4 – 12
	Max. available space	420 U (12 cabinets, without battery pack, 54 kW load)
	Aisle type	Single row aisle, natural cooling / cold aisle containment / hot–cold aisle containment
	Power density range	3 – 8 kW / cabinet
	Battery deployment	Battery pack, battery cabinet, battery rack
	Battery backup time	15 min – 240 min
	Installation	Concrete ground, raised flooring
	Power mode	Single/single–phase, three/single–phase,three/three–phase
	System protection grade	IP 20
	Operating temperature	–20℃ ~ 45℃
Cabinet system	Natural cooling	(N × 600) × 1200 × 2000 mm (excluding casters and adjusting feet, front and rear high density ventilation mesh doors; N is cabinet quantity)
	Cold aisle containment	(N × 600) × 1200 × 2000 mm (excluding casters and adjusting feet, front glass door and rear mesh door; N is cabinet quantity)
	Hot–cold aisle containment	(N × 600) × 1400 × 2000 mm (excluding casters and adjusting feet, front and rear glass doors; N is cabinet quantity)
	IP rating	IP 20 (mesh door) / IP 50 (glass door)
Refrigeration system	Input power supply	208 / 220 / 230 / 240 Vac
	Refrigerating capacity	8 kW (10U) / 15 kW (12U) / 30 kW (21U)
	Air conditioner configuration	1+0, 1+1, 2+0, 2+1, 3+0, 3+1 (optional)
	Sensible heat factor (sensible cooling capacity / total cooling capacity)	1
	Refrigerant	R410A
	Air supply method	Supply air in front and return air in the rear
	Installation	Rack–mounted
Power supply and distribution system	Power input	Single–phase three–wire / Three–phase five–wire
	UPS capacity	10 kVA / 20 kVA
	UPS configuration	N, N+1, 2N (N ⩽ 4)
	UPS rated input voltage	220/230/240 Vac single–phase, 380/400/415 Vac three–phase
	UPS input voltage range	80 ~ 280 Vac single–phase, 138 ~ 485 Vac three–phase
	UPS output power factor	0.9
	UPS rated output voltage	220/230/240 Vac single–phase, 380/400/415 Vac three–phase
	UPS overall efficiency	95%
	Maintenance bypass	Support
	Mains power feed–out way	12 ways IT + 5 ways air conditioner and fire–fighting systems
	UPS feed–out way	12 ways IT
	AC lightning protection	Class B, C
Monitoring system	Monitoring system host	Support direct access for embedded Web
	Local interface	10.1–inch industrial touch screen
	Water leak detection rope	Standard configuration
	Smoke detection	Standard configuration
	Temperature and humidity	Standard configuration
	Automatic spring door device	Optional configuration
	Door sensor	Optional configuration
	Power supply and distribu–tion / UPS / air conditioner monitoring	Standard configuration
	Northbound communication interface	RJ45
	Protocol format	Modbus TCP/IP
	SMS alarm	Optional configuration
	Rechargeable fan	Optional configuration
	Rope light in cabinet	Optional configuration

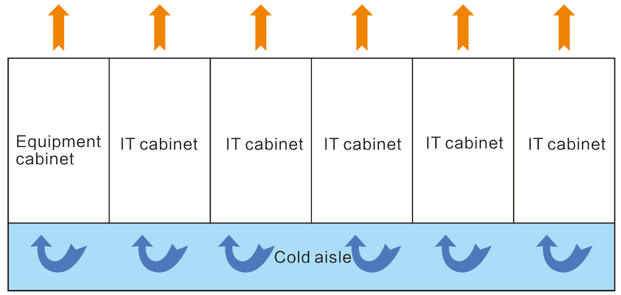
MC2000 Hot–cold Aisle Containment Solution

MC2000 hot–cold aisle containment solution is the solution that closes both cold aisle and hot aisle. It has the both advantages of high utilization of cooling capacity when closing cold aisle and improving refrigerating efficiency of air conditioner when closing hot aisle. This solution has the better energy saving effect. MC2000 hot–cold aisle containment solution uses variable capacity computer room air conditioner with load following technology, which can be used to adjust the output of cooling capacity and air capacity according to actual load calorific value for further improving energy saving effect. The independent micro modules of MC2000 hot–cold aisle containment solution has not much requirement for ambient environment and has stronger adaptability. This solution is applicable for most applied occasions.



MC2000 Cold Aisle Containment Solution

MC2000 cold aisle containment solution manages the output cooling capacity of computer room air conditioner, it only cools the device with no need of cooling the ambient environment to improve the utilization of cooling capacity. This cold aisle containment solution is better used in the computer rooms which have more cables at the back side of the cabinet or have relatively large area.



MC2000 Natural Cooling Solution

With natural cooling solution, there is no need to configure an air conditioning system.

The front and rear doors of the cabinet are equipped with mesh doors, which make use of the cooling system of IT equipment to cool down naturally. In this solution, civil air conditioners or temperature control systems in other rooms are generally used in the machine room to keep the indoor temperature from overheating.