



Product Introduction

Introduction

The Kstar IDU intelligent micro-unit data center integrates the cabinet system, power distribution system, UPS system, cooling system, monitoring system, fire fighting system and other subsystems. Occupied small footprint, the IDU integrated solution is flexible to expand and can be deployed quickly due to the pre-fabricated. To realize the energy-saving target of lower PUE, IDU is equipped with sealed cold aisle and hot aisle standardly while short cooling path reducing the loss of cold air dramatically.

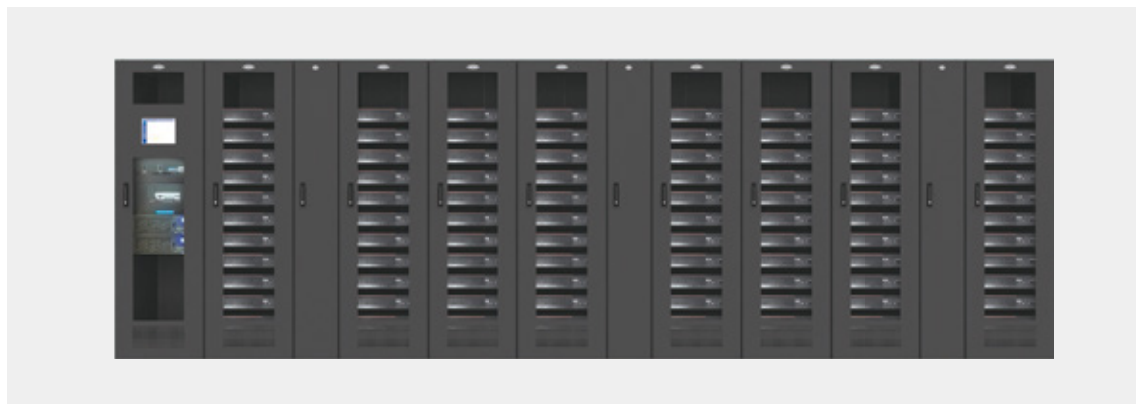
Single cabinet



Double cabinets



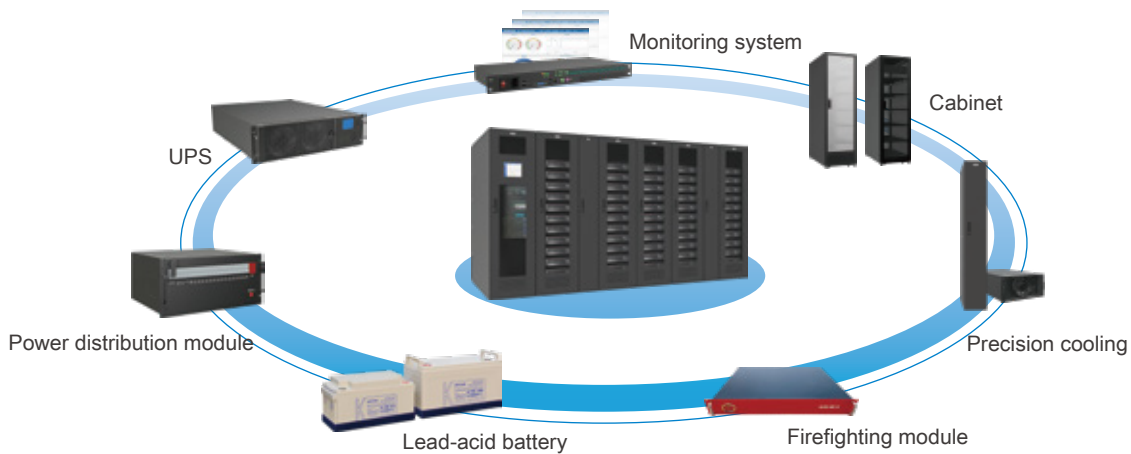
Multiple cabinets (3-9)



Application Scenarios

- ◆ Small/micro data center
- ◆ Small branches of financial industry
- ◆ Government computer room
- ◆ Computer room < 30m²
- ◆ 5G telecom station
- ◆ Small and medium-sized enterprise self-use computer room
- ◆ Other computer room of service facilities

Main architecture and composition of the system



Cabinet system	Power distribution system	UPS system	Battery system
◆ 19-inch standard cabinet with meshes for ventilation ◆ 19-inch standard cabinet with closed aisles ◆ LED strip	◆ ATS module (Optional) ◆ Rack-mounted mains module ◆ Rack-mounted UPS distribution module ◆ Rack-mounted expansion module (Optional) ◆ Battery switch module (Optional) ◆ PDU	◆ Rack-mounted single-phase input single-phase output high-frequency UPS ◆ Rack-mounted three-phase input single-phase output/three-phase input three-phase output high frequency UPS ◆ Subrack UPS ◆ Capacity: 10 kVA~150 kVA	◆ Lead-acid battery ◆ Capacity: 7AH~250AH
Cooling system	Monitoring system	Other accessories	
◆ Rack-mounted cooling unit ◆ Inrow cooling unit	◆ Monitoring server ◆ 7-inch/10-inch touch screen ◆ UPS/cooling/power distribution ◆ T&H sensor, smoking sensor, water leakage sensor and door sensor	◆ Cable tray ◆ Tray ◆ Blind panel	

Product features

Cabinet system

- ◆ The cabinet is of integrated form, with better compatibility and sealing performance
- ◆ Complete hot and code aisle containment, with high utilization rate of cooling capacity
- ◆ The static load bearing capacity of the cabinet reaches the industry-leading level
- ◆ By adopting the safety patent of the unique bounce-open door, safety of the power distribution system is ensured

Distribution system

- ◆ High-efficiency UPS with the power factor 0.9 (1.0 optional)
- ◆ Lead-acid battery, with patented technology of the leak-proof tray, safety of the battery during use is ensured
- ◆ Intelligent lithium battery, meeting the power backup requirements for high density and high circulation ratio

Cooling system

- ◆ With a wide cooling range of the rack-mounted or inrow cooling, meeting the requirements for nearby cooling as well as and consumption reduction

Monitoring system

- ◆ Intelligent monitoring all-in-one machine, meeting the requirements for streamlined monitoring of single and double cabinet (s)
- ◆ Intelligent access control system, supporting face recognition, with higher security

Firefighting module

- ◆ Rack mounted fire fighting module, better protect the equipments inside the cabinet

Customer Value

Safe and reliable

Professional platform and resources

Self-developed and manufactured



- ◆ Strong team for full product R&D
- ◆ More than 210 domestic and foreign core patents
- ◆ 300,000m² intelligent manufacturing park

Good services



- ◆ Domestic professional service team
- ◆ 7×24 round the clock response

Focused and professional



- ◆ Being focused on deep cultivation for nearly 30 years
- ◆ Provision of one-stop solutions

Characteristics and values

- ◆ When a fault occurs in the cooling system, the emergency ventilation system will be automatically turned on to ensure the normal operation of interior equipment
- ◆ By adopting the rack-mounted firefighting module, the requirements for rapid fire extinguishing nearby can be met; and when there is no fire protection equipment in the cabinet, the smoke detector can directly trigger the bounce-open door system to ensure the fast access of the firefighting module and the sensing system, so as to realize rapid fire extinguishing
- ◆ With the unique patent of the leak-proof tray for the battery, ensuring the safety protection against collisions and electrolyte leakage during transportation and handling
- ◆ With the self-developed intelligent battery management system (BMS), power backup in the data center is safer and more reliable
- ◆ The load bearing capacity of the cabinet reaches the industry-leading level
- ◆ With the national-level laboratory accredited by CNAS, the product quality is effectively guaranteed, and the design level of the researched and developed new product is represented

Efficient and energy-saving

Solution-level hot and cold aisle containment



Dual EC variable-frequency precision cooling units



Efficient UPS



Characteristics and values

- ◆ By closing the aisles, hot and cold airflow are isolated, the loss of cooling capacity is avoided, and the efficiency of the cooling unit is greatly improved
- ◆ By adopting the nearby air supply method with the closed aisles for the high-efficiency rack-mounted or inrow cooling units, the energy-saving effect is further improved
- ◆ With the output power factor of 1.0, the overall efficiency is as high as 96%, which greatly saves power consumption and reduces operating costs
- ◆ With intelligent monitoring supported energy efficiency monitoring, energy efficiency analysis and energy efficiency optimization, energy efficiency utilization is comprehensively improved

Rapid deployment

Factory prefabrication, pre-installation, and pre-commissioning



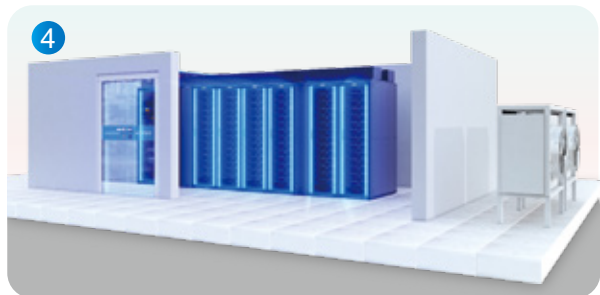
Overall packaging and transportation



Only by simple cabinet combination, line termination and cooling unit pipeline connection can complete the installation



Power-on test, delivery and acceptance

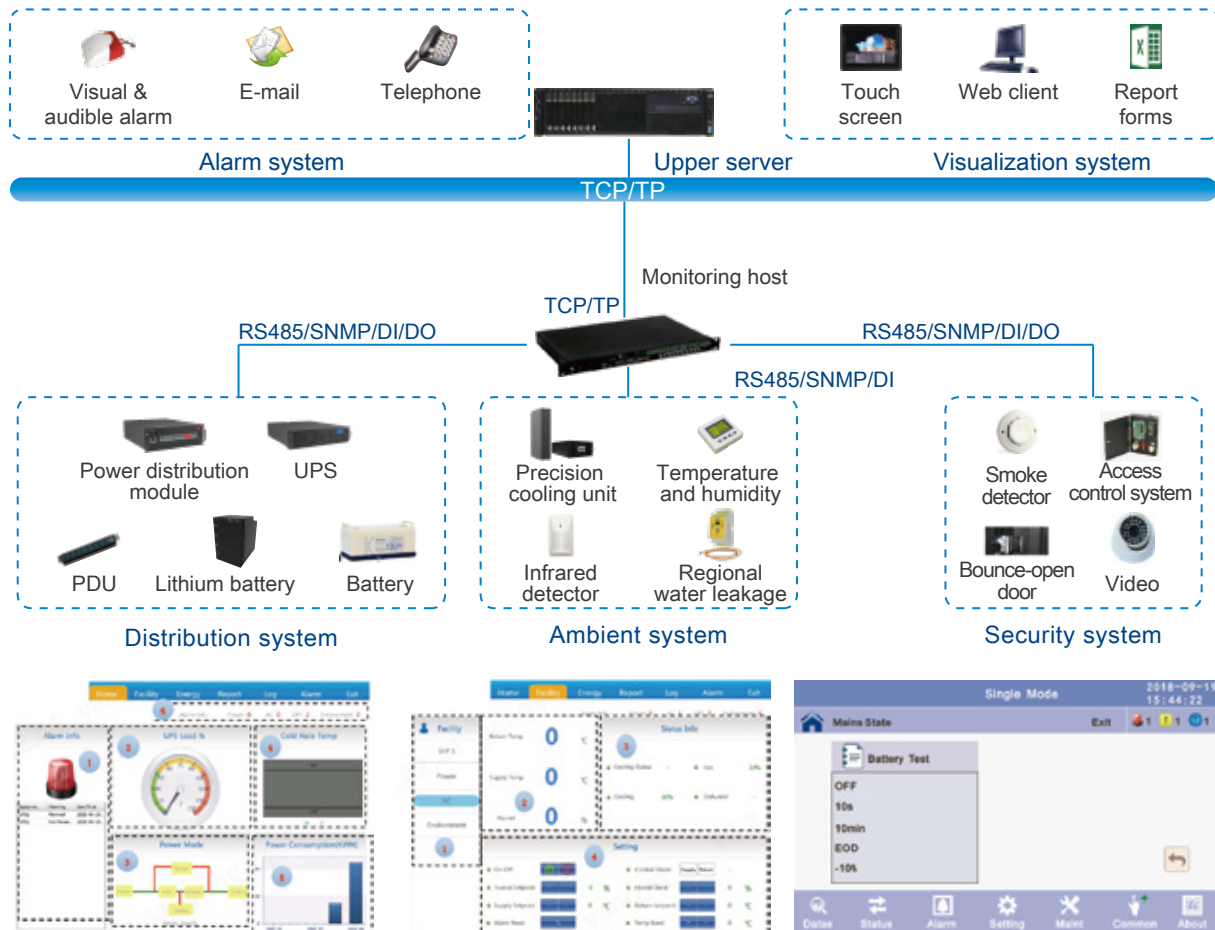


Characteristics and values

- ◆ The only enterprise with the self-owned brand and with all main equipment being researched and manufactured on our own, ensuring complete compatibility of all systems and components
- ◆ Factory pre-installation, pre-commissioning power distribution, UPS, cooling, monitoring, aisle and other systems
- ◆ With modular design and manufacturing for all products, deployment in phases can be realized, ensuring quality and rapid delivery
- ◆ On-site installation of single and dual cabinet(s) only takes 4 hours, saving installation costs, and meeting the need for rapid business launch

Intelligent management

Monitoring Solution for IDU Micro-unit Data Center



Characteristics and values

- ◆ The self-developed UPS is fully compatible with the battery, and the battery self-inspection system maintains battery activity, so that the battery life is greatly improved
- ◆ By adopting the intelligent face recognition system, monitoring and management are facilitated, while improving system security
- ◆ With the two-color LED strip design, the O&M personnel can visually distinguish the operation status of the system
- ◆ With the editable strategy design, the continuous optimization of energy saving is promoted through the statistics and display of power consumption data in peaks and valleys
- ◆ Local data is uploaded in real time, ensuring centralized monitoring and unified management for outlets by the upper management server

Specifications

Configuration	Single/Double cabinets	Multiple cabinets
General		
Number of cabinets	1/2	3-9
Sealed aisle	Hot and cold sealed aisles/Cold sealed aisle/No sealed aisle	
Cooling	Rack-mounted/In-row	
Battery deployment mode	Battery pack/Battery cabinet/Battery box/Battery rack	Battery cabinet/Battery box/Battery rack
Installation	Deploy on flat ground or deploy on raised floor	
Nominal voltage (Vac)	220/230/240, 1Ph+N+PE	380/400/415, 3Ph+N+PE
Fire fighting module (Optional)	Rack-mounted	
Wiring system (Optional)	Power cable tray/Signal cable tray	
Power Distribution System		
Input	Single input/Dual input (ATS optional)	
Input breaker	63/1P×1	125/1P or 125/3P or 160/3P or 250/3P or 320/3P
UPS capacity (kVA)	3/6/10	10/15/20/30/40/60/80/90/120
UPS system redundancy	N/N+1	N/N+1/2N (N=1)
Lightning protection level	Class C	
Maintenance bypass	32A/2P	63A/2P or 100A/2P or 40A/4P or 80A/4P or 125A/4P
Air conditioner switch (Standard)	40A/1P×2 or 63A/1P×2	40A/3P×(2~4) or 63A/3P×(2~3)
Output branch (Standard)	32A/1P×8 or 32A/1P×10	1. UPS distribution module : 1) 32A/1P×(3~14) 2) 12V DC power (12.5A/29A) 2.Expansion module: 32A/1P×(8/12/16/20)
Intelligent power meters	Standard	
Battery type	Lead-acid battery/Lithium battery	
Cooling System		
Power supply	Utility power	
Cooling system redundancy	N/N + 1	
Single cooling capacity (kW)	3.5~12.5	7.5~12.5
Compressor type	Inverter	Fixed speed/inverter
Monitoring System		
LCD display	7 inch touch screen (10.4 inch optional)	
Audible & Visual alarm	Optional	
T&H sensor	Standard	
Smoke sensor	Standard	
Water leakage sensor	Optional	
Door sensor	Standard	
Centralized monitoring of power distribution and cooling	Standard	
Electronic password lock	Optional	
Face recognition	Optional	
Fingerprint reader	Optional	
CCTV	Optional	
BMS	Optional	

Typical configuration

Single cabinet



Optional unit


RT Series
(3kVA)


RT Series
(6kVA)


Integrated power
distribution module
(3kVA/6kVA)


Rack-mounted cooling unit
(3.5kW)

Dual cabinets



Supporting battery pack (3kVA)



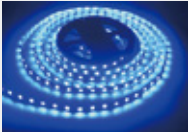
Supporting battery pack (6kVA)



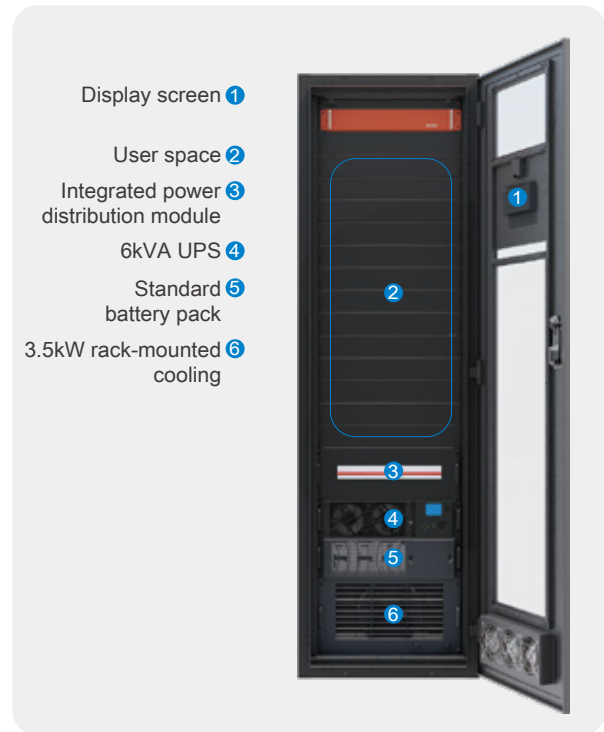
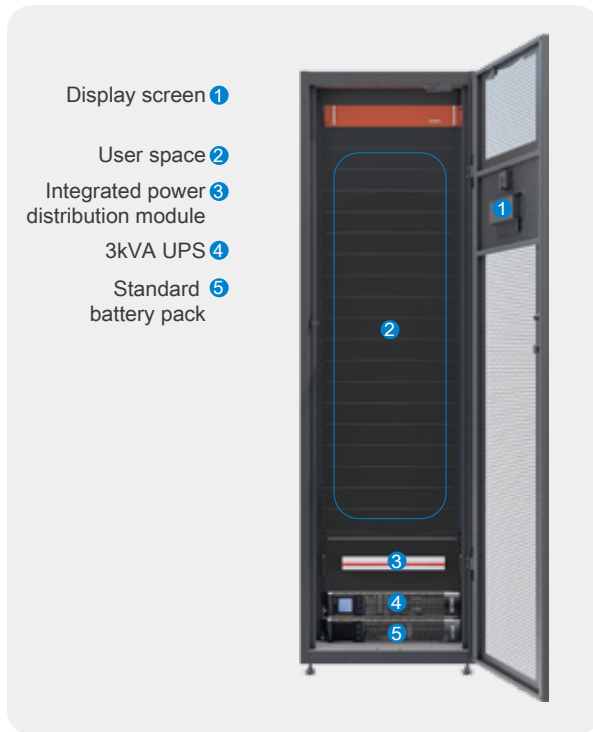
7-inch display screen



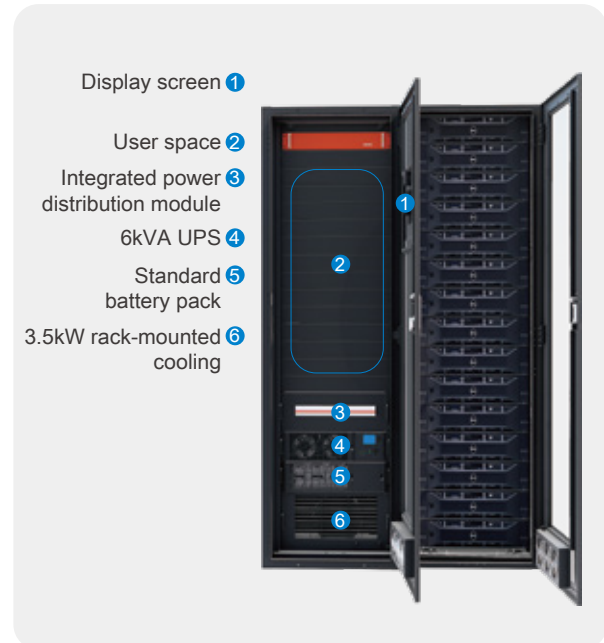
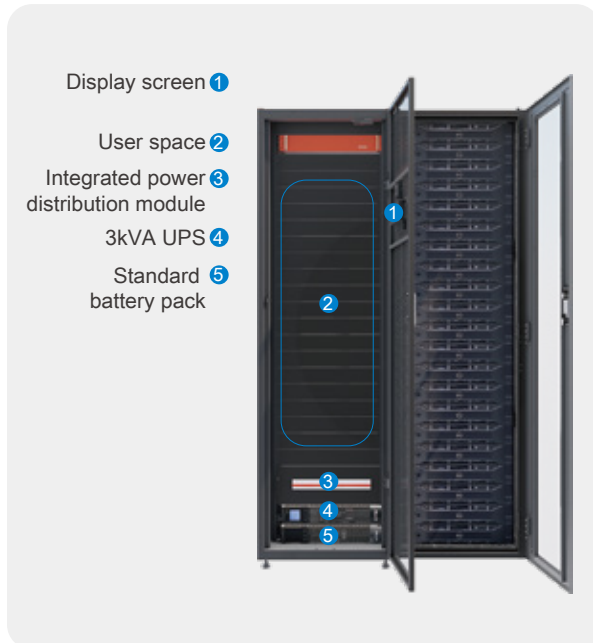
LED light strip



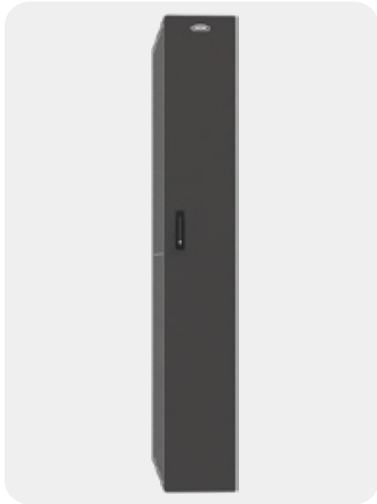
Layout of IDU single-cabinet series



Layout of IDU dual cabinet series



IT cabinet + 7.5/12.5/25.5kW inrow cooling unit + Power cabinet



+ Optional unit



Mains module
(15~40kVA)



UPS distribution module
(15~40kVA)



Expansion module
(8 circuits~12 circuits)



15/20kVA-RT



30kVA-RT



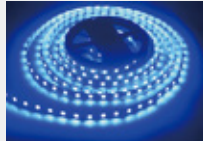
40kVA-RT



Lead-acid battery
65Ah/100Ah



7-inch display screen



LED light strip

Layout

- ① UPS distribution module ② Mains distribution module ③ 20kVA UPS module



- ① UPS distribution module ② Mains distribution module ③ 30kVA UPS module



- ① Expansion module ② UPS distribution module ③ Mains distribution module

- ④ 40kVA UPS



Airflow

- Hot air flow Cold air flow



- Hot air flow Cold air flow

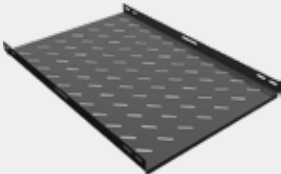
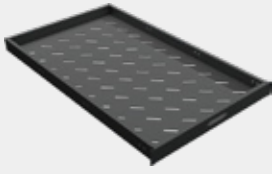
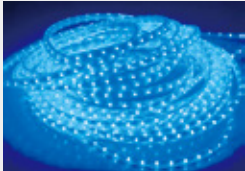


- Hot air flow Cold air flow



Accessories

Options for cabinet system

				
Mesh cabinet	Closed IT cabinet	Battery cabinet		
				
Fixed tray	Movable tray	Heavy-load fixed tray		
				
L-shaped bracket	Blind panel	Horizontal cable management	Vertical cable management	Tray
				
LED strip	Bounce-open door	Double-layer insulated glass for front door		

Options for power distribution system

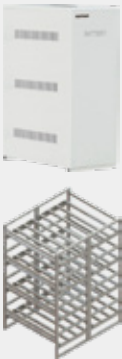
 Integrated power distribution module (For 3/6kVA UPS)	 Mains module (For 10/15/20/30/40kVA UPS)	 UPS distribution module (For 10/15/20/30/40kVA UPS)	 Expansion module (8/12/16/20 circuits)
 Integrated power distribution module (For 10kVA UPS)			

Power distribution module

 3~10kVA-RT UPS	 15~40kVA-RT UPS	 Subrack UPS (10 ~ 150kVA)	
 3~10kVA-RT UPS	 15~40kVA-RT UPS	 Subrack UPS (10 ~ 150kVA)	

UPS

Battery pack

 ATS	 Battery switch	 PDU	 38~250AH	 Battery rack
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ATS

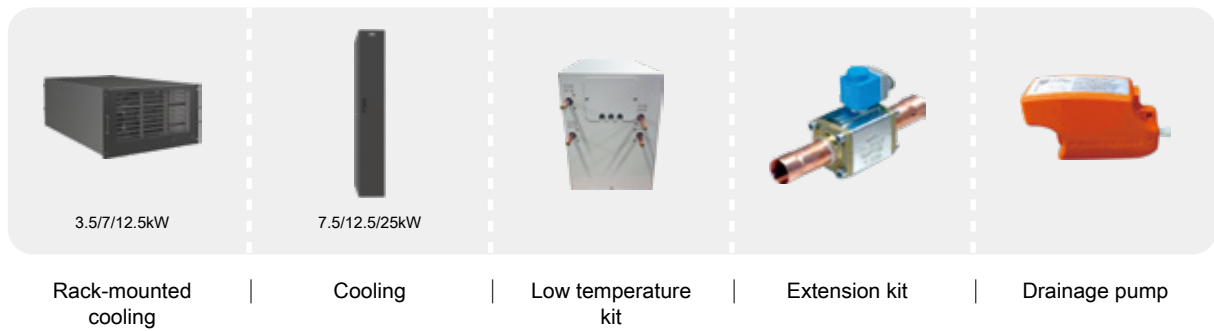
Battery switch

PDU

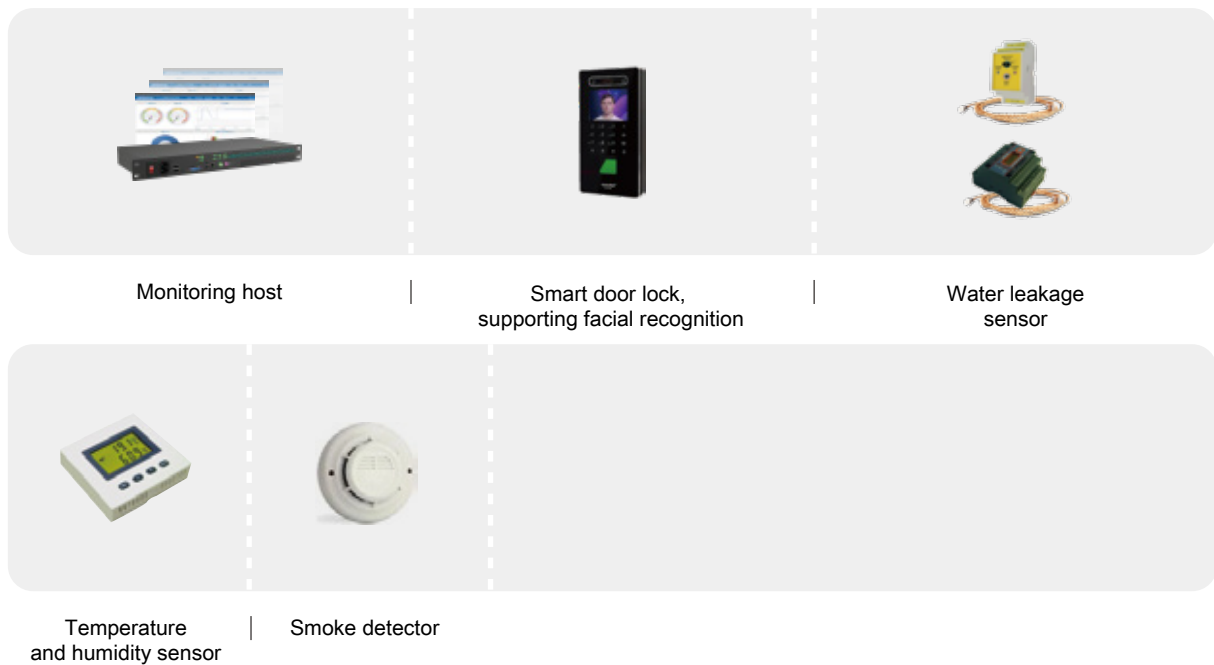
Lead-acid battery

Battery rack

Options for cooling system



Options for monitoring system



Options for fire protection

