KSTAR

— Stock code: 002518 —

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Version number: KSD/L 2020-2

Intelligent Outdoor Integrated Cabinets Solution

KSTAR

COMPANY PROFILE

Founded in 1993, Shenzhen KSTAR Science & Technology Co., Ltd (Stock Code: 002518) is a National Torch Plan Key High-tech Enterprise, and also a pioneer of UPS industrial and a total solution provider for Data Center Critical Infrastructure & Photovoltaic Inverter Systems in Mainland China. KSTAR is fully committed to the R&D and has been providing high-quality products with full service to over 90 countries and regions worldwide, leading the industrial development with innovation.

KSTAR Industrial Park at Zhongkai Hi-Tech Zone, Huizhou, China

KSTAR Industrial Park at Guanlan Fuyuan industrial Zone,Shenzhen,China

ISO9001

ISO14001

OHSAS18001

IECQ QC080000

Global Service Network

7×24 Response and Support

31 Domestic Service Centers
172 Domestic Service Stations

National Customer Service Hotline:
400-700-9662

19 Overseas Technical Service Centers
40 Overseas Service Engineers

KSTAR Industrial Park at Guangming Hi-Tech Zone, Shenzhen, China

Netherland
Russia
Ukraine
Kazakhstan
Spain
Turkey
Korea
Saudi Arabia
Dubai
Pakistan
India
China
Shenzhen global customer service center
Mexico
Nigeria
Thailand
Vietnam
Malaysia
Brazil
South Africa
Australia

General introduction

Product Introduction

KSTAR intelligent integrated outdoor unit (IOU in abbreviation) consists of UPS, battery, fire-fighting, power panel and monitor unit, it reserves available space for IT equipment. IOU has the features that it includes power redundancy, constant cooling, Li – ion battery design, this increases the reliability of IT equipment.

Front side	Internal layout	
		UPS
		Battery
		Cooling
		Fire fighting
		Power panel
		Monitor

Application

Application	Installation environment	Convenient maintenance
IOU can be used in the cell station of the remote area.	Outdoor installation, waterproof, dustproof, heat – resistant,steal-preventive.	High reliable power supply, long backup time, maintenance free, integrated monitor.

Product features

◎ Transformer-less UPS and transformer-based UPS are optional

· Rack-mounted 3KVA/6KVA transformer-less/ transformer -based UPS, the UPS can work in parallel and realize 1+1.

· Wide input voltage range and frequency, it can ensure the stable running of the generator.

· Transformer-based UPS is with the features that it can anti-impulse current, and it also contain output isolation
transformer inside ,that can increase the reliability and safety of power supply.

6KVA rack mounted tranformer-less UPS

3KVA rack mounted tranformer-based UPS

6KVA rack mounted tranformer-based UPS

Outdoor battery cabinet

Patent anti-leakage tray

Optional BMS

KSTAR Li－ion battery solution, it adopt KSTAR Li－ion battery cabinet, it's with the below features：

· High power density(Light weight and small dimension)

· Heat － resistant(Working temperature can be up to 45℃)

· Long life, environment friendly (cycle life of cell of Lithium iron phosphate is from 2000-6000, it's 4 to 5 times of lead acid battery)

· It includes self-developed battery management system(BMS), it's with good compatibility and make the product more reliable.

· Maintenance free(Reduce the maintenance cost)；

· Environment friendly and don't contain polluted metal such as lead.

Rack mounted lithium battery pack

lithium battery /pack

Product introduction

◎ Cabinet cooling

· It's embedded in the door of IOU, it don't occupy the available space, and increase the available space for IT equipment.

· Single cabinet can be equipped with 1 or 2 air conditioner, the 2 air conditioner work as 1+1 redundancy, if one fails, the other can still work instead of the fault one immediately .

· AC/DC frequency conversion types air conditioners are optional. For 48Vdc frequency conversion type, low start current, and it is feed by UPS and will not affect by public grid.

· Working temperature range:−40~55℃， wide temperature range for working.

Appearance of cabinet cooling

System structure chart
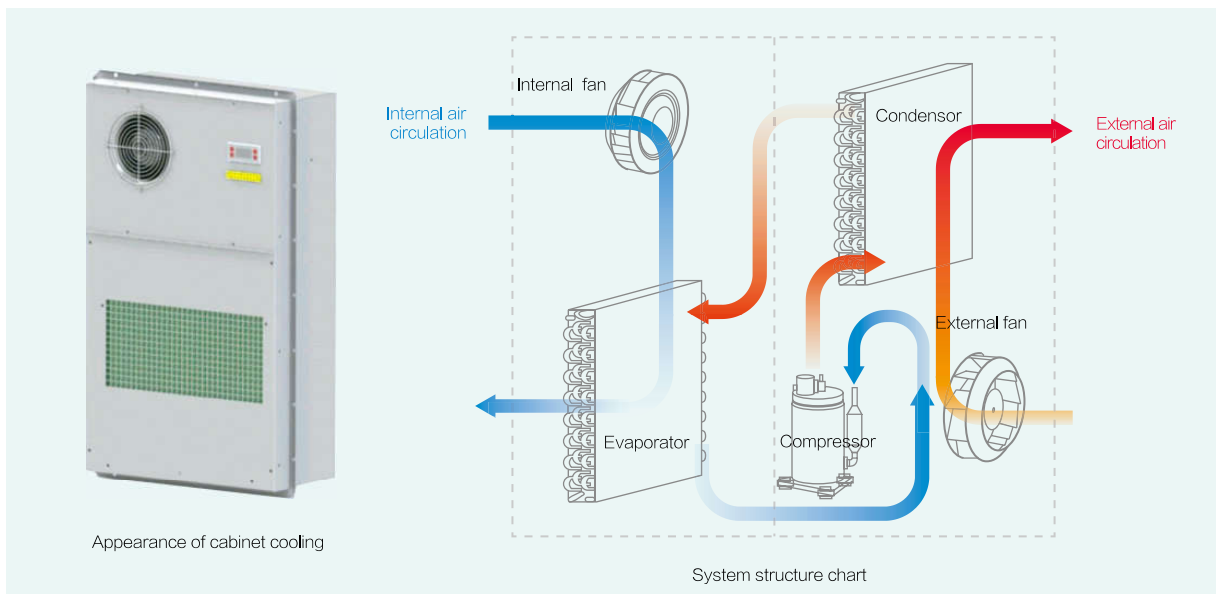
◎ Rack mounted fire fighting

· It is special for data center, it's with FM200 suppression gas inside.
· Integrated with fire detection and fire extinguisher together.
· When it is working, it will release all the gas within 10 sec and
put out the fire inside the cabinet immediately.
· Automatically temperature monitor, and it can set different alarm temperature.

◎ Rack mounted power panel module

· Rack mounted design;
· Customer can choose 2 paths design, one is for public gird, the other is for
generator, fast connector for generator.
· Schneider brand breakers are standard equipment in the power panel module.
· C level surge protection for main input.
· Power monitor for the main input.
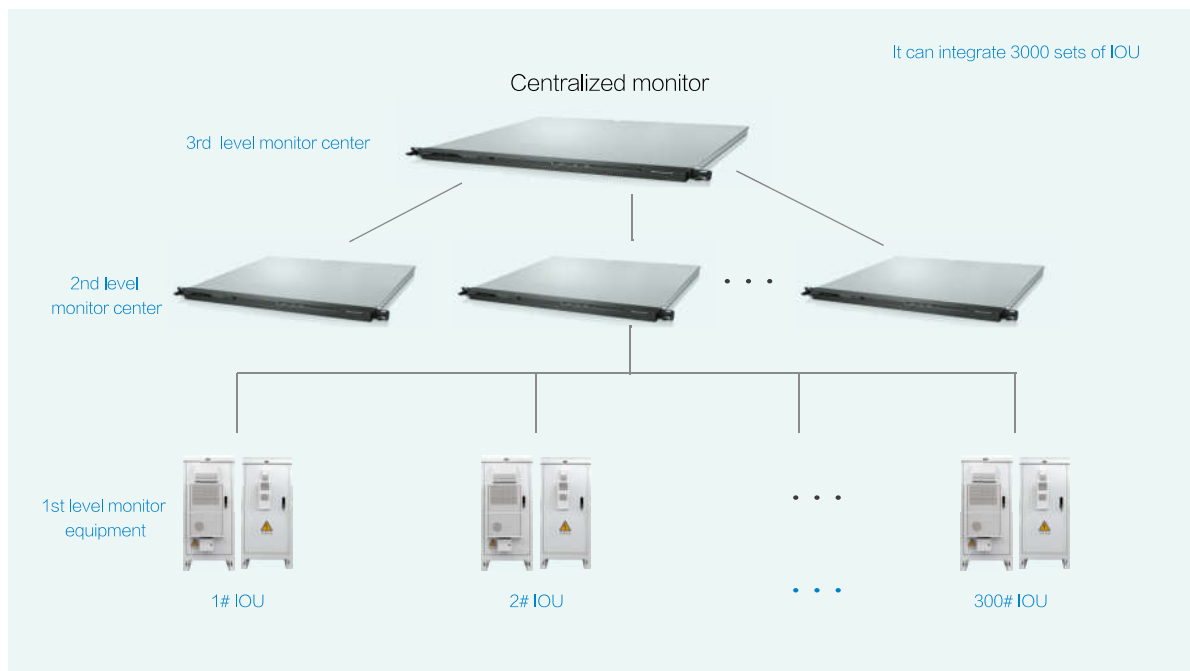
◎ Intelligent monitor system

Monitor unit

· Power supply: dual power input, automatic transfer between two path when power failure.

· Large equipment access: 1 unit can integrated 50 equipment at most.

· Multi-level monitor: Multi-level integration can confirm the exactly quantity of IT equipment.

· Wifi hotspot: It support Wifi hotspot and can realized movable operation and maintenance.

· Easy to expand: reserve slot, it can expand IO port, switch card and telephone audible card.

Monitor software

· Software configuration: Customized software interface, no need to modify software code.

· Flexible : Support B/S and C/S browsing.

· Good compatibility: Compatible with the intelligent equipment from different supplier（UPS，cooling），support series port communication, SNMP，MODBUS TCP.

· Friendly communication interface: Monitor system can supply Northbound Interface free, the third part can integrate monitor system throughSNMP and Web Service.

It can integrate 3000 sets of IOU

Centralized monitor

3rd level monitor center

2nd level monitor center

1st level monitor equipment

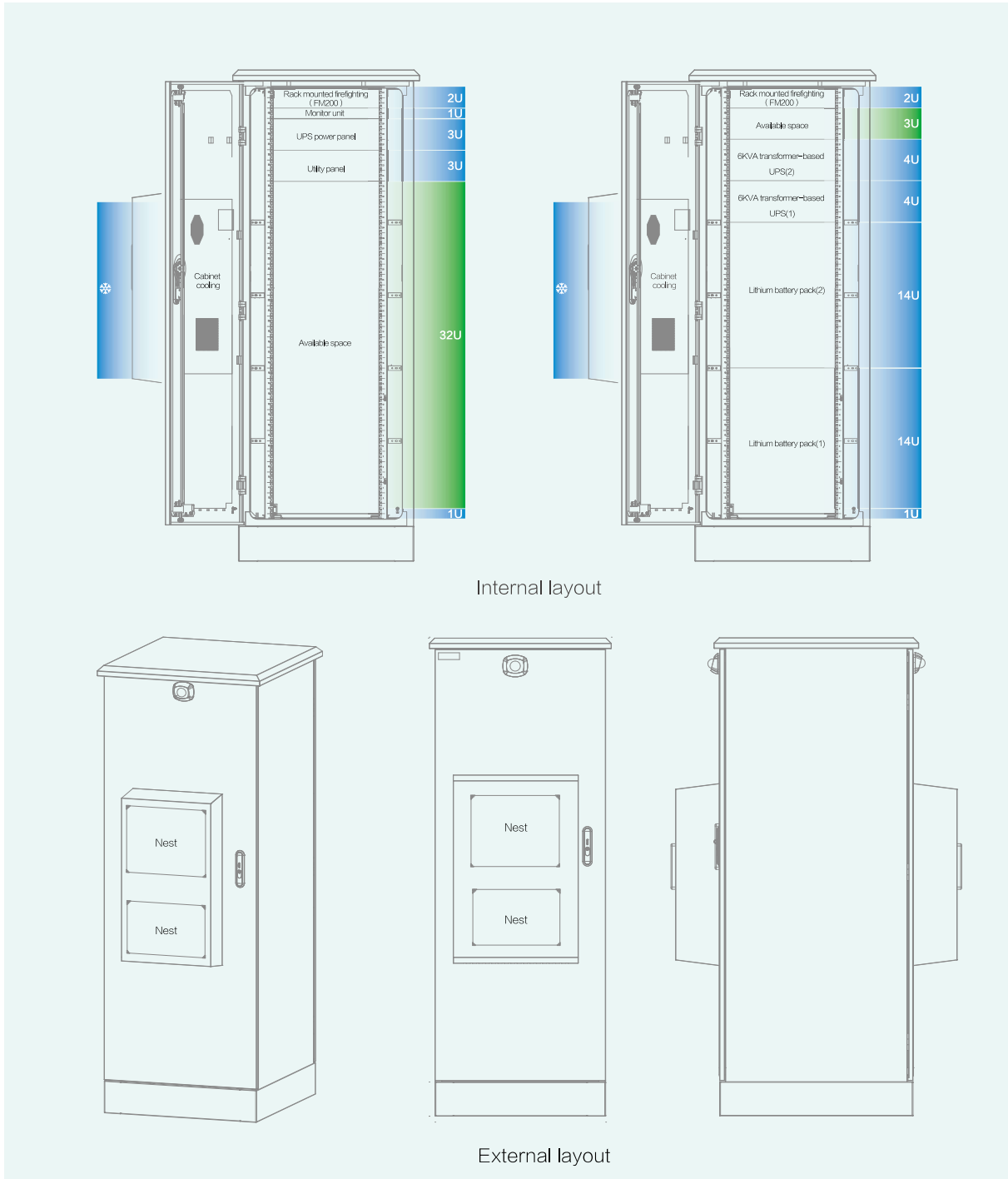1# IOU   2# IOU   300# IOU

◎ Cabinet of IOU

· IP55

· Sandwich panels （color steel plate + Polystupid ethylene heat-insulating material)

· heat insulating material, the depth is 45mm.

Configuration

Configuration 1

· 6KVA transformer UPS(1+1) parallel + lithium battery

Rack mounted firefighting (FM200)	2U
Monitor unit	1U
UPS power panel	3U
Utility panel	3U
Available space	32U
	1U

Rack mounted firefighting (FM200)	2U
Available space	3U
6KVA transformer-based UPS(2)	4U
6KVA transformer-based UPS(1)	4U
Lithium battery pack(2)	14U
Lithium battery pack(1)	14U
	1U

Cabinet cooling

Internal layout

Nest

Nest

Nest

Nest

External layout

05

Specification

Subsystem	General introduction
General features	
Dimension（W×D×H）mm	750×850×2100
Quantity of cabinet	2
Power of single power module（kVA）	6
Reliability	Tier II orTier II above
Installation	Deploy on flat ground

Power of single module	6kVA
USP system	
Input voltage range	220 or 230Vac, 50/60Hz, Single phase 3 wires（L+N+PE）
Output voltage range	220 or 230Vac
Output power factor	0.8
Rated capacity（kVA）	6, Single unit or 1+1 redundancy
Maintenance bypass	Support
Efficiency（%）	≥90
Lithium battery	192V50Ah (2group) ;3KW load, backup time 4 hours
Cooling system	
Cooling capacity（kW）	1.5（Integrated cooling, support 1+1 redundancy）
Air flow	Front and forward return air, down and front supply air
Dimension（W×D×H）mm	479×200×783
Cooling type	Air cooling
Cabinet system	
Dimension（W×D×H）mm	750×850×2100
Available space	42U
Optional kits	Fixed plate, L type rack, heavy load plate, LED, Industrial connector(Connected with generator)
IP degree	IP55，Other IP degree can be customized
Power system	
Input voltage range	220 or 230Vac，50/60Hz，single phase three wires（L+N+PE）
Input type	Single input/Dual input
Output branch	4（Utility output），22（UPS output），can be customized
Surge protection	C level surge protection
Monitor system	
Alarm	SMS alarm, E-mail alarm, Audible and visual alarm (Optional) etc
Interface	Web browse, APP，Wechat public account
Function modules	Integrated management(UPS/Cooling/Power panel/ battery etc.), access control management, video management, alarm management. Environment management(TH, smoking sensor, water leakage detection)
Fire fighting	
Fire fighting module	FM200-J

Configuration

Configuration 2

- 3KVA transformer UPS(1+1) parallel + lithium battery

Rack mounted firefighting (FM200)	2U
Monitor unit	1U
Available space	10U
UPS power panel	3U
Utility panel	3U
3KVA transformer-based UPS(2)	4U
3KVA transformer-based UPS(1)	4U
Lithium battery pack(1)	14U
	1U

Cabinet cooling

Internal layout

Nest

Nest

Nest

Nest

External layout

Specification

Subsystem	General introduction
General features	
Dimension（W×D×H）mm	750×850×2100
Quantity of cabinet	1
Power of single power module（kVA）	3
Reliability	Tier II orTier II above
Installation	Deploy on flat ground

Power of single module	3kVA
USP system	
Input voltage range	220 or 230Vac, 50/60Hz, Single phase 3 wires（L+N+PE）
Output voltage range	220 or 230Vac
Output power factor	0.8
Rated capacity（kVA）	3, Single unit or 1+1 redundancy
Maintenance bypass	Support
Efficiency（%）	≥90
Lithium battery	192V50Ah；2KW load，backup time 4 hours
Cooling system	
Cooling capacity（kW）	1.5（Integrated cooling, support 1+1 redundancy）
Air flow	Front and forward return air, down and front supply air
Dimension（W×D×H）mm	479×200×783
Cooling type	Air cooling
Cabinet system	
Dimension（W×D×H）mm	750×850×2100
Available space	42U
Optional kits	Fixed plate, L type rack, heavy load plate, LED, Industrial connector(Connected with generator)
IP degree	IP55，Other IP degree can be customized
Power system	
Input voltage range	220 or 230Vac，50/60Hz，single phase three wires（L+N+PE）
Input type	Single input/Dual input
Output branch	4（Utility output），22（UPS output），can be customized
Surge protection	C level surge protection
Monitor system	
Alarm	SMS alarm, E-mail alarm, Audible and visual alarm（Optional）etc
Interface	Web browse, APP，Wechat public account
Function modules	Integrated management(UPS/Cooling/Power panel/ battery etc.), access control management, video management, alarm management. Environment management(TH, smoking sensor, water leakage detection)
Fire fighting	
Fire fighting module	FM200-J

Configuration

Configuration 3

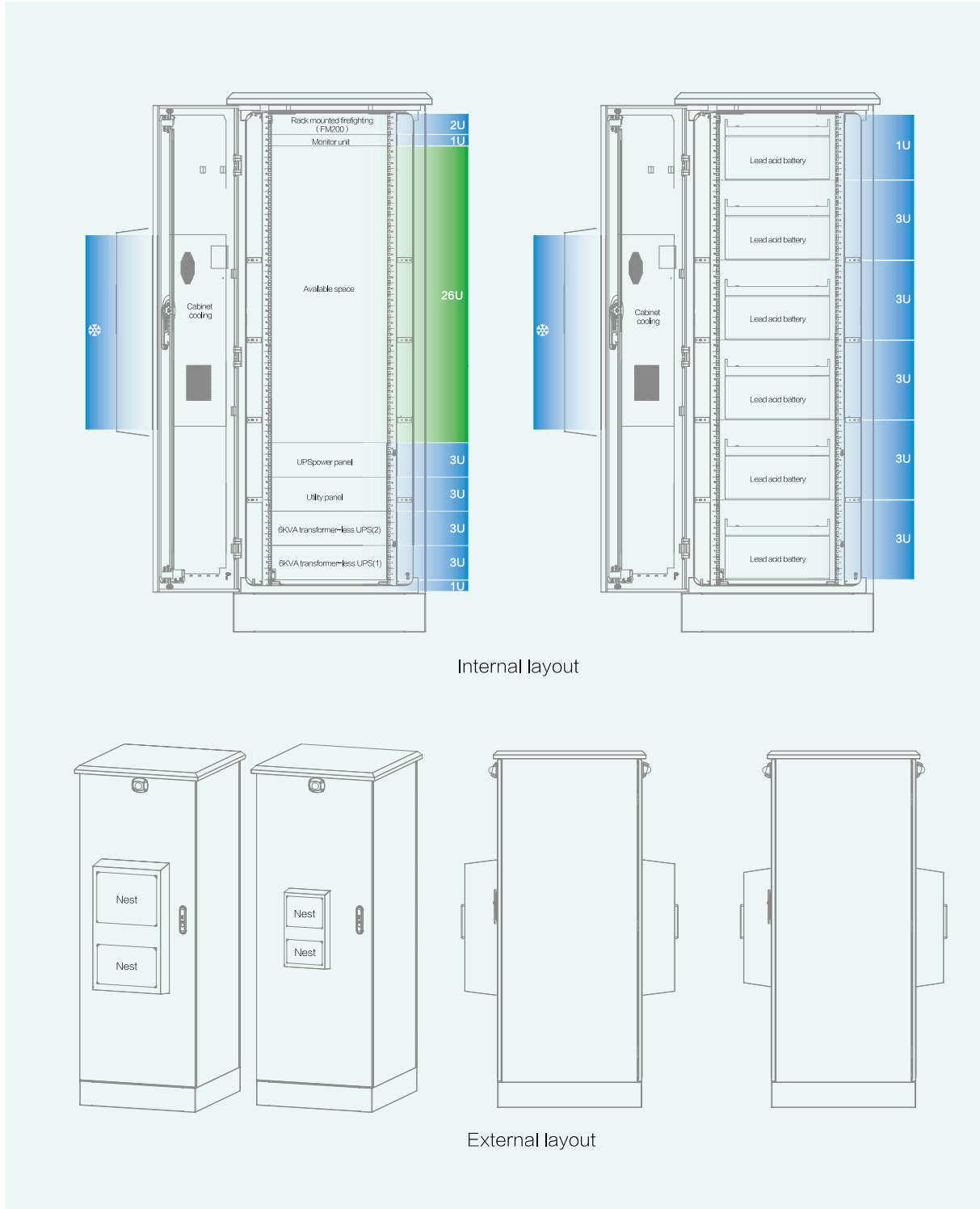· 6KVA transformer-less UPS(1+1) parallel + lithium battery

Internal layout

External layout

Specification

Subsystem	General introduction
General features	
Dimension（W×D×H）mm	750×850×2100
Quantity of cabinet	2
Power of single power module（kVA）	6
Reliability	Tier II orTier II above
Installation	Deploy on flat ground

Power of single module	6kVA
USP system	
Input voltage range	220/230 or 240Vac, 50/60Hz, Single phase 3 wires（L+N+PE）
Output voltage range	220/230 or 240Vac
Output power factor	0.8
Rated capacity（kVA）	6, Single unit or 1+1 redundancy
Maintenance bypass	Support
Efficiency（%）	≥90
Lithium battery	±96V50Ah (2group) ;3KW load, backup time 4 hours
Cooling system	
Cooling capacity（kW）	1.5（Integrated cooling, support 1+1 redundancy）
Air flow	Front and forward return air, down and front supply air
Dimension（W×D×H）mm	479×200×783
Cooling type	Air cooling
Cabinet system	
Dimension（W×D×H）mm	750×850×2100
Available space	42U
Optional kits	Fixed plate, L type rack, heavy load plate, LED, Industrial connector(Connected with generator)
IP degree	IP55，Other IP degree can be customized
Power system	
Input voltage range	220/230 or 240Vac，50/60Hz，single phase three wires（L+N+PE）
Input type	Single input/Dual input
Output branch	4（Utility output），22（UPS output），can be customized
Surge protection	C level surge protection
Monitor system	
Alarm	SMS alarm, E-mail alarm, Audible and visual alarm（Optional）etc
Interface	Web browse, APP，Wechat public account
Function modules	Integrated management(UPS/Cooling/Power panel/ battery etc.), access control management, video management, alarm management. Environment management(TH, smoking sensor, water leakage detection)
Fire fighting	
Fire fighting module	FM200-J

Configuration

Configuration 4

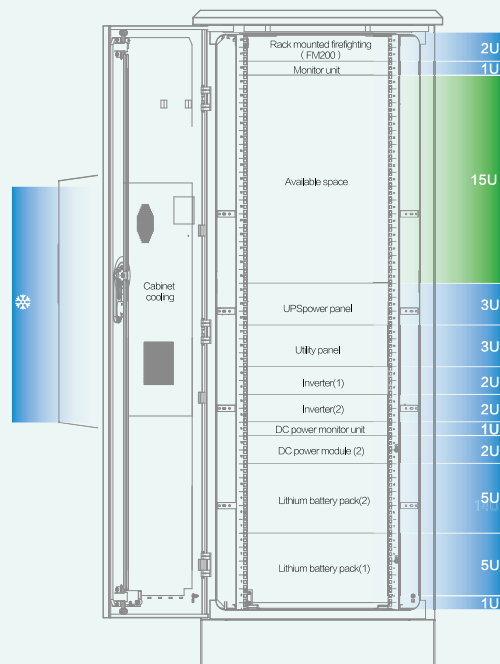· 6KVA transformer-less UPS(1+1) parallel + lead acid battery

Rack mounted firefighting (FM200)	2U
Monitor unit	1U
Available space	26U
UPS power panel	3U
Utility panel	3U
6KVA transformer-less UPS(2)	3U
6KVA transformer-less UPS(1)	3U
	1U

Lead acid battery	1U
Lead acid battery	3U
Lead acid battery	3U
Lead acid battery	3U
Lead acid battery	3U
Lead acid battery	3U

Cabinet cooling

Internal layout

Nest

Nest

External layout

Specification

Subsystem		General introduction
General features		
Dimension（W×D×H）mm		750×850×2100
Quantity of cabinet		2
Power of single power module（kVA）		6
Reliability		Tier II orTier II above
Installation		Deploy on flat ground

Power of single module		6kVA
USP system		
Input voltage range		220/230 or 240Vac, 50/60Hz, Single phase 3 wires（L+N+PE）
Output voltage range		220/230 or 240Vac
Output power factor		0.8
Rated capacity（kVA）		6, Single unit or 1+1 redundancy
Maintenance bypass		Support
Efficiency（%）		≥94
Lithium battery		±96V100AH ;3KW load, backup time 4 hours
Cooling system		
Cooling capacity（kW）		1.5（Integrated cooling, support 1+1 redundancy） 0.5(Integrated cooling, support 1+1 redundancy)
Air flow		Front and forward return air, down and front supply air
Dimension（W×D×H）mm	479×200×783	319X175x550
Cooling type		Air cooling
Cabinet system		
Dimension（W×D×H）mm		750×850×2100
Available space		42U
Optional kits		Fixed plate, L type rack, heavy load plate, LED, Industrial connector(Connected with generator)
IP degree		IP55，Other IP degree can be customized
Power system		
Input voltage range		220/230 or 240Vac，50/60Hz，single phase three wires（L+N+PE）
Input type		Single input/Dual input
Output branch		4（Utility output），21（UPS output），can be customized
Surge protection		C level surge protection
Monitor system		
Alarm		SMS alarm, E-mail alarm, Audible and visual alarm（Optional）etc
Interface		Web browse, APP, Wechat public account
Function modules		Integrated management(UPS/Cooling/Power panel/ battery etc.), access control management, video management, alarm management. Environment management(TH, smoking sensor, water leakage detection)
Fire fighting		
Fire fighting module		FM200-J

Configuration

Configuration 5

- DC power module(1+1) parallel + lithium battery + 3KVA inverter (1+1) parallel

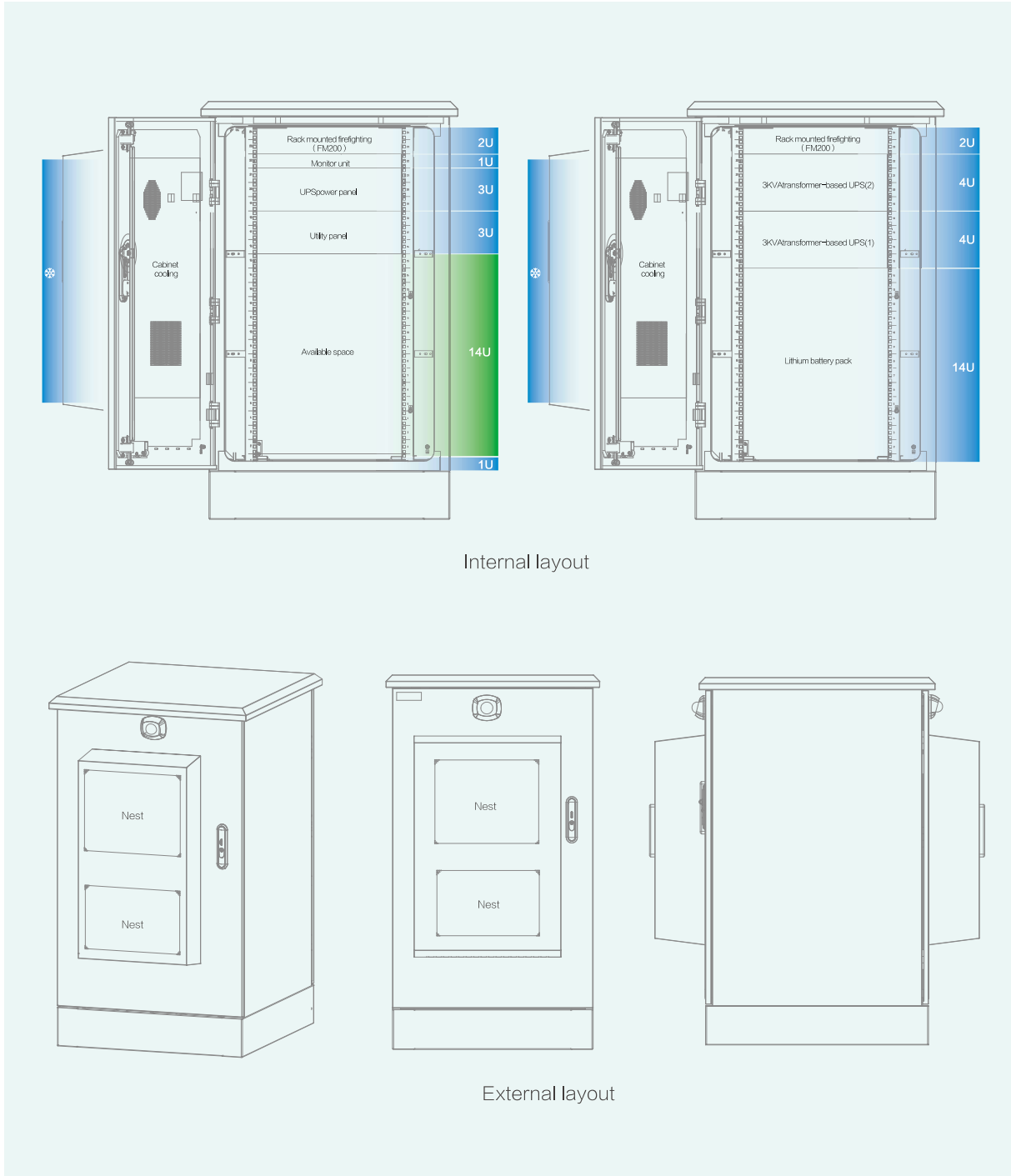| Component	Size
Rack mounted firefighting (FM200)	2U
Monitor unit	1U
Available space	15U
UPS power panel	3U
Utility panel	3U
Inverter(1)	2U
Inverter(2)	2U
DC power monitor unit	1U
DC power module (2)	2U
Lithium battery pack(2)	5U
Lithium battery pack(1)	5U
	1U

Cabinet cooling

Internal layout

Nest
Nest

Nest

Nest

External layout

Specification

Subsystem		General introduction
General features		
Dimension（W×D×H）mm		750×850×2100
Quantity of cabinet		1
Power of single power module（kVA）		3
Reliability		Tier II orTier II above
Installation		Deploy on flat ground

Power of single module		3kVA
USP system		
Input voltage range		220/230 or 240Vac, 50/60Hz, Single phase 3 wires（L+N+PE）
Output voltage range		42 ~ 58Vdc; Rated voltage 53.5Vdc
Output current(A)		50
Efficiency(%)		≥ 95
Lithium battery		48V100Ah(2 group); 2KW load, backup time 4 hours
Inverter		
Input voltage		48Vdc
Output voltage		220Vac
Output power factor		0.8
Rate capacity(KVA)		3
Efficiency(%)		≥ 85
Cooling system		
Cooling capacity（kW）		1.5（Integrated cooling, support 1+1 redundancy）
Air flow		Front and forward return air, down and front supply air
Dimension（W×D×H）mm		479×200×783
Cooling type		Air cooling
Cabinet system		
Dimension（W×D×H）mm		750×850×2100
Available space		24U
Optional kits		Fixed plate, L type rack, heavy load plate, LED, Industrial connector(Connected with generator)
IP degree		IP55，Other IP degree can be customized
Power system		
Input voltage range		220/230 or 240Vac，50/60Hz，single phase three wires（L+N+PE）
Input type		Single input/Dual input
Output branch		4（Utility output），15（DC output）， 8（Inverter output），can be customized.
Input type		C level surge protection
Monitor system		
Alarm		SMS alarm, E-mail alarm, Audible and visual alarm（Optional）etc
Interface		Web browse, APP，Wechat public account
Function modules		Integrated management(UPS/Cooling/Power panel/ battery etc.), access control management, video management, alarm management. Environment management(TH, smoking sensor, water leakage detection)
Fire fighting		
Fire fighting module		FM200-J

Configuration

Configuration 6

- 3KVA transformer-base UPS (1+1) parallel + lithium battery

Rack mounted firefighting (FM200)	2U
Monitor unit	1U
UPS power panel	3U
Utility panel	3U
Available space	14U
	1U

Rack mounted firefighting (FM200)	2U
3KVA transformer-based UPS(2)	4U
3KVA transformer-based UPS(1)	4U
Lithium battery pack	14U

Internal layout

Nest

Nest

Nest

Nest

External layout

15

Specification

Subsystem	General introduction
General features	
Dimension（W×D×H）mm	750×850×2100
Quantity of cabinet	2
Power of single power module（kVA）	3
Reliability	Tier II orTier II above
Installation	Deploy on flat ground

| Power of single module	3kVA
USP system	
Input voltage range	220 or 230Vac, 50/60Hz, Single phase 3 wires（L+N+PE）
Output voltage range	220 or 230Vac
Output power factor	0.8
Rated capacity（kVA）	6, Single unit or 1+1 redundancy
Maintenance bypass	Support
Efficiency（%）	≥90
Lithium battery	192V50Ah; 2kW load, backup time 4 hours
Cooling system	
Cooling capacity（kW）	1.5（Integrated cooling, support 1+1 redundancy）
Air flow	Front and forward return air, down and front supply air
Dimension（W×D×H）mm	479×200×783
Cooling type	Air cooling
Cabinet system	
Dimension（W×D×H）mm	750×850×2100
Available space	42U
Optional kits	Fixed plate, L type rack, heavy load plate, LED, Industrial connector(Connected with generator)
IP degree	IP55，Other IP degree can be customized
Power system	
Input voltage range	220 or 230Vac，50/60Hz，single phase three wires（L+N+PE）
Input type	Single input/Dual input
Output branch	4（Utility output），22（UPS output），can be customized
Surge protection	C level surge protection
Monitor system	
Alarm	SMS alarm, E-mail alarm, Audible and visual alarm etc
Interface	Web browse, APP，Wechat public account
Function modules	Integrated management(UPS/Cooling/Power panel/ battery etc.), access control management, video management, alarm management. Environment management(TH, smoking sensor, water leakage detection)
Fire fighting	
Fire fighting module	FM200-J

Certifications of Qualifications

Key Hi-Tech Enterprise of National Torch Plan

Nationally-Recognized Enterprise Technology Center
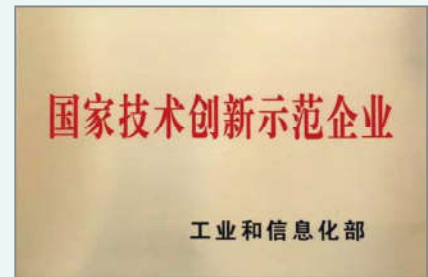
National Technological Innovation Demonstration Enterprise

Post-doctorate Scientific Research Station

Production License for Storage Battery

Production License for Precision Air Conditioner

A-Share Listed Company

ISO9001 Certification

ISO14001 Certification

OHSAS18001 Certification

IECQ QC080000 Hazardous Materials Process Management System Certification

Standing Member Unit of China
Power Supply Society

Model Enterprise of Integrity of
Guangdong Province

Pollutant Discharge License

Appraisal Certificate for
Informatization and
Industrialization Integration
Management System

Certification of Radio,
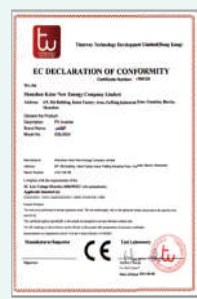Film and Television

TLC Certification

Energy-Saving Certification

UL Certification

CE Certification