



# Residential Energy Storage System Product Catalog

PV+ESS for the future

stock code

**002335.SZ**

Kehua Digital Energy





## 30+ Years

30+ years R&D and manufacturing experience of power electronic technologies

## 31+GW

31GW+ PV installation worldwide

## 6.3GW /5.4GWh

6.3GW/5.4GWh ESS installation

## No.5

2020, KEHUA ranks No.5 in world PCS market share (by IHS Markit)

### Residential Energy Storage System

With Kehua Residential Energy Storage System, it is possible to effectively manage solar in your home day and night.

This energy storage system will give you a complete energy solution with multiple working modes which meet different application scenarios. It will bring independence and economy for energy use.

# Residential Energy

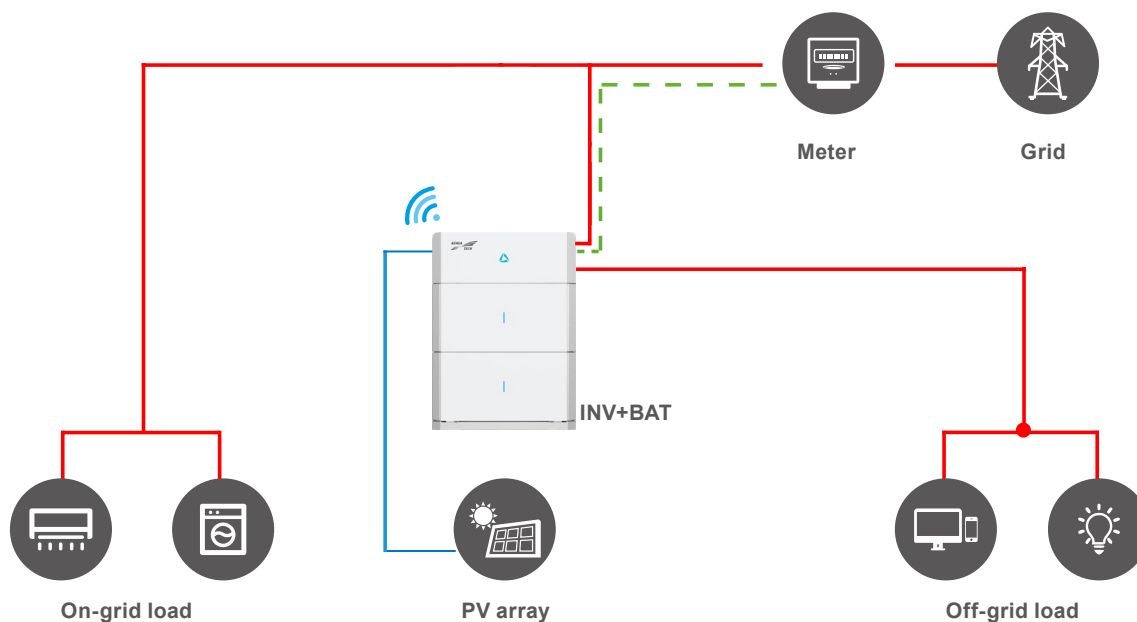
# Contents

<b>About Kehua</b>	<b>01</b>
<b>Application Scenarios</b>	<b>03</b>
<b>Working Mode</b>	<b>07</b>
<b>Residential Energy Storage System</b>	<b>09</b>
iStoragE1 series	09
iStoragE3 series	11
<b>Battery System</b>	<b>13</b>
Lithium-ion battery module	13
<b>System Accessories</b>	<b>14</b>
Datalogger	14
Kehua Energy Cloud	15
APP	15

# Residential Energy Storage System

# Application scenarios

## Newly installed system

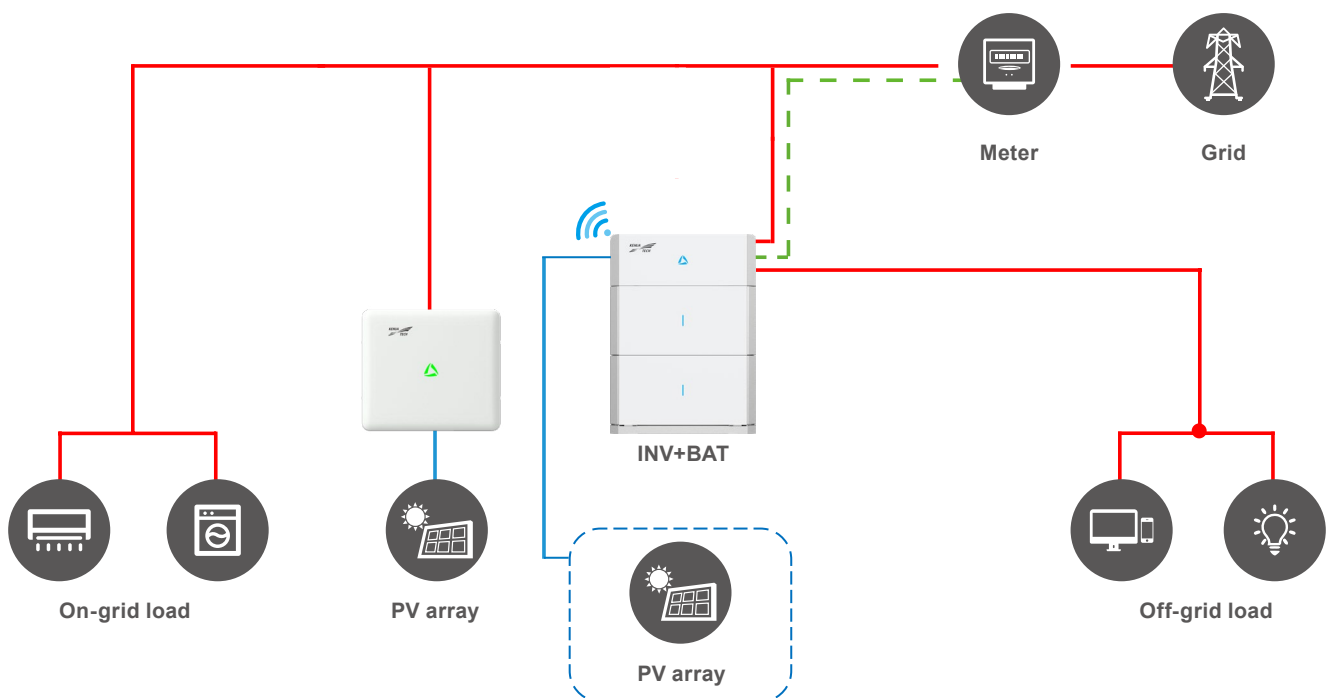


In areas with high electricity prices, customers can build a new home energy management system with Kehua PV+ESS solution, which can realize the maximum self-use of solar energy and reduce electricity bills. At the same time, this solution is also very suitable for areas with limited power supply and peak-to-valley adjustment of power.



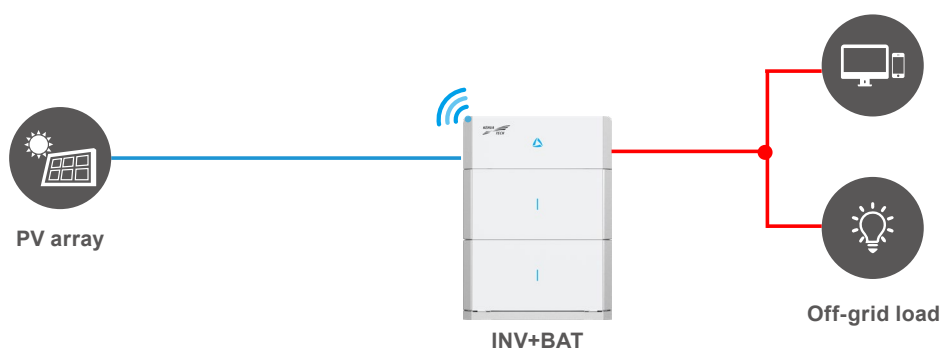
## AC retrofit system

For households that have installed PV on-grid inverters, Kehua's energy storage products also work friendly. Combined with meter communication, electricity costs can be effectively reduced by increasing the rate of self-generation and self-consumption, so that customers can obtain better investment returns.



# Application Scenarios

## Pure off-grid system



In some areas without power grid, such as ocean islands or remote areas, Kehua Energy Storage System can turn to off-grid mode to ensure energy independence.





# Working Mode

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## Self-consumption mode

Realizing the maximum self-use of solar energy and minimum power consumption from grid.

## Backup mode

Charging the battery to ensure sufficient battery power for future off-grid situations.

## Time of use mode

Promoting energy utilization rate and users' income with flexible electricity consumption strategies according price difference between peak and off-peak time.

## Energy scheduling mode

Getting profit through battery programmable charging and discharging time.

## External control mode

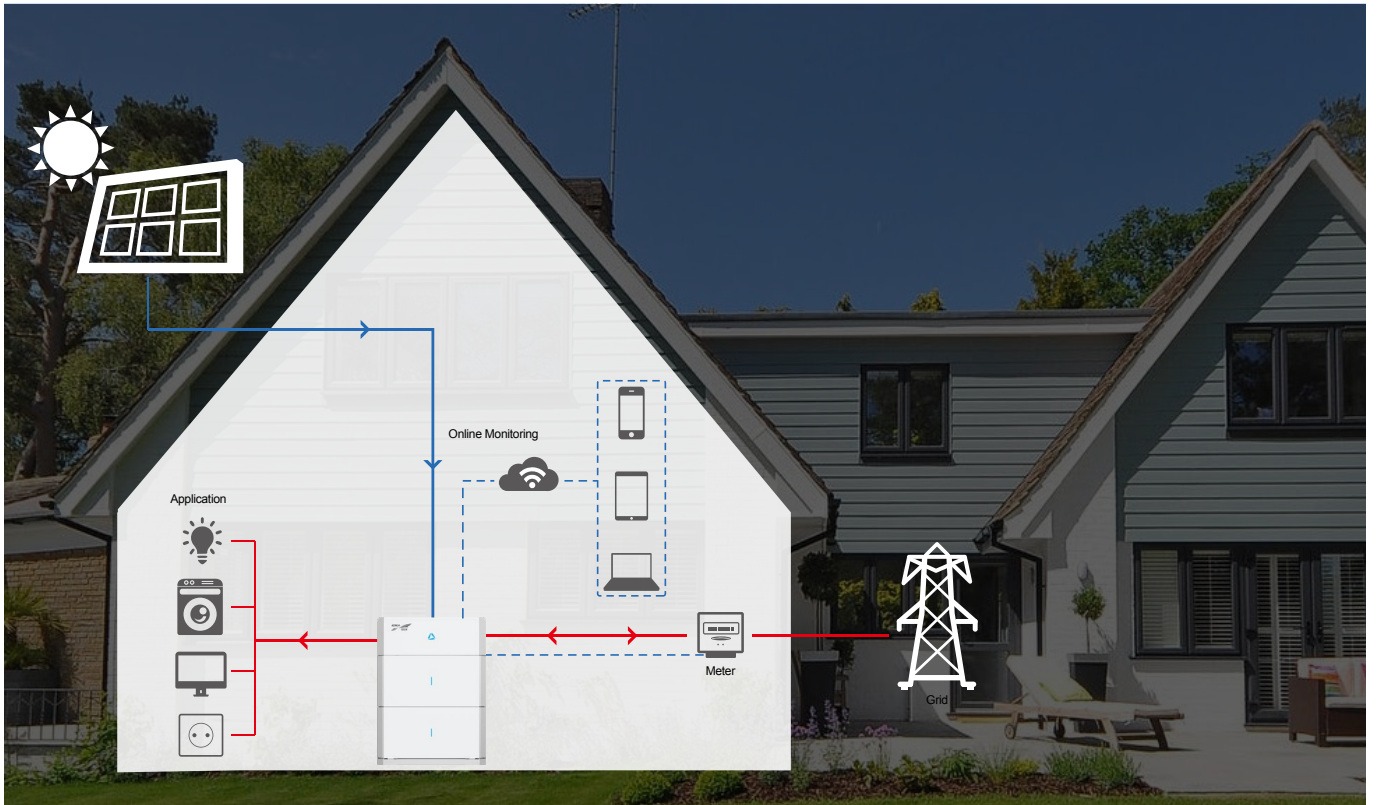
Responding external instructions by deploying grid or battery power (such as VPP).

## Off-grid mode

Operating in a complete off-grid mode automatically when grid power is not available.







# Residential Energy Storage System

## Single-phase ESS

### iStoragE1 Series

3600~6000

iStoragE1 series is an all-in-one solar battery system which consist of hybrid inverter and battery modules. Owners can build a new home energy storage system with iStoragE1, which can realize the maximum self-use of solar energy and reduce electricity bills. It is also very suitable for areas need backup power.



## Product Features



### Simple

- All-in-one design, modular installation
- 1~8 batteries flexible expansion



### Safe

- Physical and electrical dual isolation
- Modular fire protection integration



### Smart

- Independent battery management, mix old and new batteries
- Built-in EMS function

# System Specification

Items	iStoragE1 3600 Series	iStoragE1 5000 Series	iStoragE1 6000 Series
<b>System components</b>			
Inverter model	iStoragE1 3600	iStoragE1 5000	iStoragE1 6000
Number of Inverter		1	
Battery system model		iStoragE B5-S1	
Number of battery module		1~8	
<b>General</b>			
System capacity		5~40kWh	
Rated system power	3.6kW	5kW	6kW
Dimension (W*H*D)	800*1090*240mm/31.49* 42.91*9.45in (two battery modules, with foundation)		
Noise	< 35dB		
Cooling type	Natural cooling		
Altitude	3000m/9842ft (Derating above 2000m/6561ft)		
Operating temperature <sup>1</sup>	-20~50°C/-4~122°F		
Recommended operating temperature	15~30°C/59~86°F		
Operating humidity	0~100%RH (Non-condensing)		
Display	LED & APP		
Installation method	Floor or Wall-mounted (optional)		

\*Specifications are subject to change without prior notice.

\*1 Charge: 0~50°C. Discharge: -20~50°C.

# Hybrid Inverter Specification

Items	iStoragE1 3600	iStoragE1 5000	iStoragE1 6000
<b>DC Input (PV)</b>			
Recommended Max. PV input power		9.0kWp	
Max. PV input voltage		580Vdc	
No. of MPPTs		2	
No. of PV strings per MPPT		1/1	
Max. PV input current		15A/15A	
Max. short current		18.75A/18.75A	
MPPT voltage range		100~550Vdc	
Starting voltage		120Vdc	
DC (PV) switch		Yes	
<b>DC Input and Output (Battery)</b>			
Battery voltage range		360~500Vdc	
Max. charge/discharge current		25A	
<b>AC Input and Output (On-grid)</b>			
Rated AC output power	3.6kW	5.0kW	6.0kW
Rated AC output voltage		230Vac	
Grid voltage range		180~270Vac	
Max. output current	15.6A	21.7A	26.1A
Max. input current	31.2A	43.4A	52.2A
Rated grid frequency		50Hz	
Grid frequency range		45~55Hz	
Power factor		>0.99 (rated power)	
Adjustable power factor		0.8 (leading)~0.8 (lagging)	
THDi		<3% (rated power)	
<b>AC Output (Off-grid)</b>			
Rated AC output voltage		230Vac	
Rated output frequency		50Hz	
Rated output power	3.6kW	5.0kW	6.0kW
Peak output power	4.68kW, 60s 5.4kW, 30s	6.5kW, 60s 7.5kW, 30s	7.8kW, 60s
Switch time <sup>1</sup>		<10ms	
<b>Efficiency</b>			
Max. efficiency		97.70%	
European efficiency		97.10%	
<b>General</b>			
Weight	17kg/37.47lb (including side plates)		
Dimension (W*H*D)	800*280*233mm/31.49*11.02*9.17in (including side plates)		
Protections	AFCI(optional), Anti-Islanding protection, DC reverse polarity protection, Insulation monitoring, DC/AC surge protection, AC short-circuit protection		
Enclosure type	IP65		
Communication interface	Portal-WiFi (standard)/4G (optional), RS485		
Compliance	EN 62109-1/2, IEC 62109-1/2, EN IEC 61000-6-2/3, EN IEC 61000-3-11, EN 61000-3-12, VDE-AR-N 4105, G98 <sup>2</sup> , G99 <sup>2</sup> , XP C15-712-3, VDE V 0126-1-1, EN 50549-1, CEI 0-21, NTS SEPE:V2.1, UNE 217002, UNE 217001		

\*Specifications are subject to change without prior notice.

\*1 Except for countries with special requirements.

\*2 Certification is available in 2024.

# Residential Energy Storage System

## Three-phase ESS iStoragE3 Series 5K~12K

iStoragE3 series is an all-in-one solar battery system which consist of hybrid inverter and battery modules. Owners can build a new home energy storage system with iStoragE3, which can realize the maximum self-use of solar energy and reduce electricity bills. It is also very suitable for areas need backup power.



## Product Features



### Simple

- All-in-one design, modular installation
- Flexible expansion, maximum 48kW with 160kWh<sup>1</sup>



### Safe

- Physical and electrical dual isolation
- Modular fire protection integration



### Smart

- Independent battery management, mix old and new batteries
- Built-in EMS function

\*1 Available in Q4 with PBox series.

# System Specification

Items	iStoragE3 5K Series	iStoragE3 6K Series	iStoragE3 8K Series	iStoragE3 10K Series	iStoragE3 12K Series
<b>System components</b>					
Inverter model	iStoragE3 5K	iStoragE3 6K	iStoragE3 8K	iStoragE3 10K	iStoragE3 12K
Number of Inverter	1				
Battery system model	iStoragE B5-S2				
Number of battery module	1~8				
<b>General</b>					
System capacity	5~40kWh				
Rated system power	5kW	6kW	8kW	10kW	12kW
Dimension (W*H*D)	800*1995*240mm/31.49*78.54*9.45in (four battery modules, with foundation)				
Noise	< 35dB				
Cooling type	Natural cooling				
Altitude	3000m/9842ft (Derating above 2000m/6561ft)				
Operating temperature <sup>1</sup>	-20~50°C/-4~122°F				
Recommended operating temperature	15~30°C/59~86°F				
Operating humidity	0~100%RH (Non-condensing)				
Display	LED & APP				
Installation method	Floor or Wall-mounted (optional)				

\*Specifications are subject to change without prior notice.

\*1 Charge: 0~50°C. Discharge: -20~50°C.

# Hybrid Inverter Specification

Items	iStoragE3 5K	iStoragE3 6K	iStoragE3 8K	iStoragE3 10K	iStoragE3 12K
<b>DC Input (PV)</b>					
Recommended Max. PV input power	23kWp		29kWp		
Max. PV input voltage	1000Vdc				
No. of MPPTs	2				
No. of PV strings per MPPT	1/1		2/1		
Max. PV input current	16A/16A	12.8A			27A/16A
Max. short current	20A/20A	34A/20A			
MPPT voltage range	150~900Vdc				
Starting voltage	180Vdc				
DC (PV) switch	Yes				
<b>DC Input and Output (Battery)</b>					
Battery voltage range	650~900Vdc				
Max. charge/discharge current	24.6A				
<b>AC Input and Output (On-grid)</b>					
Rated AC output power	5kW	6kW	8kW	10kW	12kW
Rated AC output voltage	380/400Vac, 3W/N/PE				
Grid voltage range	323-418Vac/340-440Vac				
Max. output current	7.9A	9.6A	12.8A	16A	17.4A
Max. input current	15.2A	18.3A	24.3A	26A	26A
Rated grid frequency	50Hz				
Grid frequency range	45~55Hz				
Power factor	>0.99 (rated power)				
Adjustable power factor	0.8 (leading)~0.8 (lagging)				
THDi	<3% (rated power)				
<b>AC Output (Off-grid)</b>					
Rated AC output voltage	380/400Vac, 3W/N/PE				
Rated output frequency	50Hz				
Rated output power	5kW	6kW	8kW	10kW	12kW
Peak output power	12kW, 60s		20kW, 60s		
Peak output current	18.2A, 60s		30.4A, 60s		
Switch time <sup>1</sup>	<10ms				
Support the unbalance load	Yes				
<b>Efficiency</b>					
Max. efficiency	98.3%				
European efficiency	97.5%				
<b>General</b>					
Weight	27kg/59.52lb (including side plates))				
Dimension (W*H*D)	800*400*200mm/31.49*15.75*7.87in (including side plates)				
Protections	AFCI(optional), Anti-Islanding protection, DC reverse polarity protection, Insulation monitoring, DC/AC surge protection, AC short-circuit protection				
Enclosure type	IP65				
Communication Interface	Portal-WiFi (standard)/4G (optional), RS485				
Compliance	EN 62109-1/2, IEC 62109-1/2, EN IEC 61000-6-1/2/3/4, EN 50549-1, NC RfG, PPDS, CEI 0-21, VDE AR-N-4105, TOR Erzeuger Typ A <sup>2</sup>				

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\*2 Certification is available in 2024.

# Lithium-ion Battery Module

## iStorageE B5 Series

### Product Features



Modular fire protection integration



Quick plug connector



Integrated single-battery pack energy management optimization circuit



Items	iStorageE B5-S1	iStorageE B5-S2
<b>General</b>		
Cell technology		LiFePO4
Battery energy capacity		5kWh
Battery usable capacity <sup>1</sup>		5kWh
Scalability	8	8
Scalable capacity range	5~40kWh	5~40kWh
Rated power	4kW	4kW
Voltage range	360~500Vdc	650~900Vdc
Maximum charge current	11.11A	6.15A
Maximum discharge current	11.11A 13.33A, 10s	6.15A 7.38A, 10s
Dimension (W*H*D)	800*380*238mm/31.49*14.6*9.37in (including side plates)	800*380*238mm/31.49*14.6*9.37in (including side plates)
Weight	51kg/112.43lb (including side plates)	52kg/114.64lb (including side plates)
Operating temperature <sup>2</sup>		-20~50°C/-4~122°F
Recommended operating temperature		15~30°C/59~86°F
Humidity		0~100%RH (Non-condensing)
Altitude		3000m/9842ft (Derating above 2000m/6561ft)
Cooling type		Natural cooling
Display		LED
Communication interface		RS485, CAN
Topology		Isolated
Connection method	Floor or Wall mounted (optional)	Floor or Wall mounted (optional)
Enclosure type		IP65
Compliance	IEC 62619, IEC 60730, UN 38.3, IEC 62040-1	IEC 62619, IEC 60730, UN 38.3

\* Specifications are subject to change without prior notice.

\*1 Test conditions: 25°C, 0.2C charge & discharge, 100 % depth of discharge (DOD).

\*2 Charge: 0~50°C. Discharge: -20~50°C.

# System Accessories

## Datalogger

### Wifi Stick/4G Stick



## Product Features

### Smart and flexible

- Support WiFi configuration and baud rate configuration
- Unobstructed communication distance up to 100m

### Simple and efficient

- Plug and play, quick installation
- Upgrade the data collector and inverter by cloud platform and APP

### Safe and reliable

- Password and encrypted transmission for data protection
- IP65 protection, wide operating temperature range

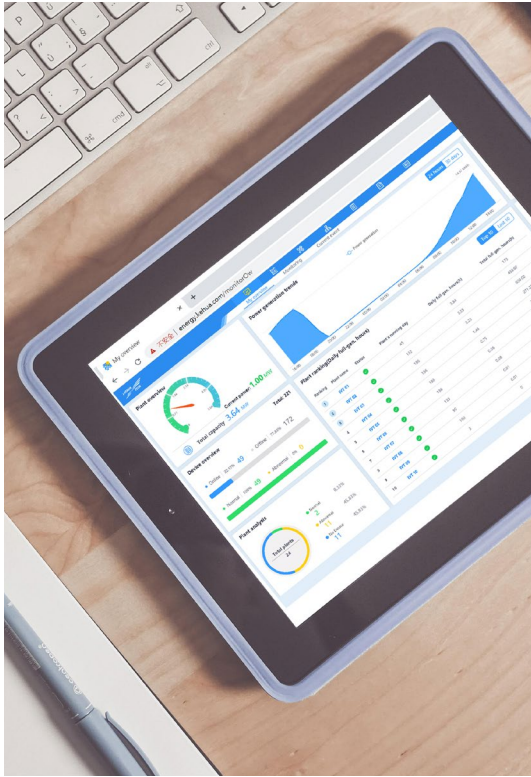
## System Specification

Items	KC762A	KC761B
Type	Wifi Stick	4G Stick
<b>Communication Mode</b>		
RS485 communication	Support 4800/9600/115200bps communication distance ≤100m	
WLAN communication	IEEE802.11b/g/n 2.412GHz~2.484GHz	LTE-FDD B1/B3/B5/B7/B8/B20/B28 LTE-TDD B38/B40/B41 GSM 850MHz/900MHz/1800MHz/1900MHz
<b>Power Supply</b>		
DC input voltage	5~15VDC, 1A@15V	
Power consumption	≤5w	
<b>General</b>		
Max. number of devices	≤10	
Display	LED	
Operating temperature	-30~70°C/-22~158°F	
Relative air humidity	0%~100% (Non-condensing)	
Elevation	≤4000m/13123.36ft	
Protection class	IP65	
Dimensions (W×H×D)	48*130.5*31.4mm/1.89*5.14*1.24in	
Mounting type	plug & play	
Compliance	CE, FCC	CE

\*Specification indexes may be subject to changes without further notice.

# System Accessories

## Kehua Energy Cloud



### Product Features

#### Smart O&M

- Provide multi-level data statistics for required agents , regions , power stations, etc.
- Provide systematic online upgrade and remote maintenance functions to ensure stable operation of equipment and power stations.
- Support remote IV curve and fault wave recording, efficient data acquisition, and accurate fault locating.

#### Efficient Management

- Provide effective end-user information maintenance and power plant information management.
- Provide various types of system logs to locate the cause of a problem accurately
- Support batch setting and remote control functions to achieve convenient and efficient management.

#### Perfect Functions

- Provide the functions of account management, event alarm, data report, organization management, equipment assets, and equipment's operation parameter design, etc.
- Support real-time monitoring of data at the region-level/station-level/ equipment-level.
- Offer the advantages of comprehensive inverter technology, realize efficient response, and provide a strong support for intelligent O&M management.

## Function List

Items	Kehua Energy Cloud
<b>Parameter</b>	
Language	Chinese/English
Browser	Support IE, Chrome, Firefox
Data storage interval	>15min (settable)
Data management	Support 25 years saving
<b>Function List</b>	
O&M management	Provide management, equipment upgrade and remote control functions of users, power stations, collectors and inverters
organization management	Provide the administrative right, realize the personnel accounts creation and authority management functions
monitoring center	View real-time information and alerts for monitoring sites and devices, and add agent-level management interface for efficient data monitoring and management
data report	Provide historical data of power station and equipment, query alarm information, create custom report, download and export functions
expandability	The system adopts modular design, and supports the modular expansion; Device type and device protocol support configuration expansion.

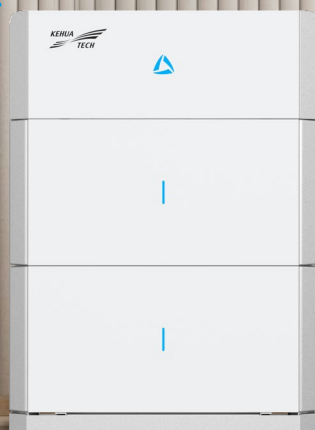
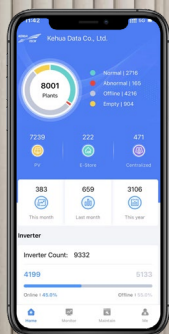
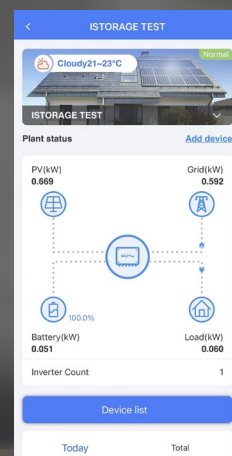
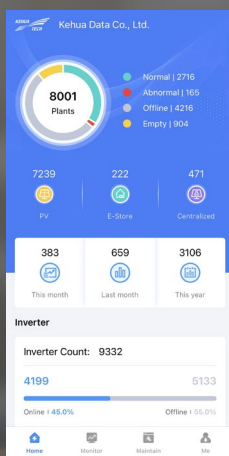
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# System Accessories

## APP-WiseSolar Plus

With Kehua WiseSolar, customers can manage and control their energy consumption and production. Available via smartphone or tablet, the APP allows customers to monitor, analyze and control their Kehua iStorageE system from anywhere in the world.



**Reliable • Flexible • Responsible**

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