

# Modular And Stackable Battery Storage Solution



## Features

- Indoor or Outdoor Installation (IP65)
- Auto Fire Suppression for ultimate peace of mind
- Full Integration With iCS EV Chargers
- LiFePO4 Battery Technology
- Full App Control And Monitoring
- Lightweight
- Twin Solar Inputs (2x MPPT's)
- High Performance 5kW
- Charge From Solar or Off Peak Grid
- Emergency Output for Power in Emergency (blackout)

## Product Description

The iCS Home Battery Storage system is flexible, modular, has great safety credentials and can be fully integrated with Solar PV systems & even EV Charge points, all controllable from one APP.

The system can also utilise off peak electricity tariffs by charging batteries when energy costs are at their lowest and be deployed during peak times.

The high-performance inverter and battery modules allow for fast charging and a continuously rated 21.7A output for less reliance on the grid when multiple appliances and loads being used together.

The system also provides an emergency output in case of grid power cuts, again continuously rated at 21.7A output.



Home



Smartphone  
App



iCS2.0Lite



10,000  
cycles



Warranty 10  
years



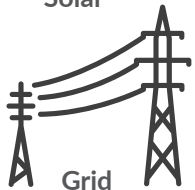
## Connect with iCS

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# System Connectivity



Solar



Grid



DC Coupled Hybrid Inverter



Stylish slimline stackable  
LiFePO4 batteries

- Automatic fire suppression device for ultimate safety
- 5.12kWh to 40.96kWh capacity to maximise energy cost savings



House

Main Load

Emergency Load



ICSH7DW



Lights, Freezer, Alarms, Critical Devices

- Use your Solar system to charge your EV
- Battery Storage compatible
- App controlled with WiFi or Bluetooth connection
- Integrated load management to protect the main incoming fuse
- Built-in RCD protection
- Cyber secure

- Full control of charger and battery storage modes from one app
- Monitor solar generation and property consumption
- Set automatic schedules



# System Configurations



## ICSESS1 - Stackable Battery Module Specifications

Battery Technology	LiFePO4
Battery Capacity	5.12kWh
Useable Battery Capacity	4.60kWh
Depth of Discharge	90%
Rated Voltage	51.20V
Operating Voltage Range	48V 57V (90% DoD)
Internal Resistance	≤ 30 mΩ
Cycle Life	10,000 Cycles Lifespan
Ingress Protection	IP65
<b>Operating mode</b>	
Maximum charging	50A (0.5C or 1C if 2 Modules)
Maximum discharging	100A (1C)
Maximum short circuit	200A
Working temperature	-10°C -50°C
Humidity	≤ 90% ROH, No Condensation

<b>Battery management</b>	
Maximum number of modules	1-8 Parallel up to 3 modules each stack
Capacity	5.12-40.96 kWh
Useable Capacity	4.61-36.86 kWh
Energy Consumption	<2W (<50mW in sleep mode)
Monitoring Parameters	System voltage, Cell voltage & temperature, Current, PCBA temperature
Fire Safety	Automatic aerosol fire suppressant
Dimensions [W/H/D] (mm)	660 x 480 x 180
Grid Regulation	G99 for / ICSESSH5K /
Safety Regulation	IEC/EN62109-1, IEC/EN62109-2
EMC	IEC/EN61000-6-1:2019, IEC/EN61000-6-3:2021 IEC60529
Communication interface	Compatible with CAN & RS-485 RJ45 Plug
DC Connection	Quick Connector

# ICSESSH5K – Hybrid Inverter Specifications



## DC Input

Max. recommended DC power [W]	7000
Max. DC voltage[V]	550
Nominal DC operating voltage[V]	360
MPPT voltage range [V]	125-500
MPPT voltage range@full load [V]	220-500
Max. input current [A]	14/14
Max. short circuit current [A]	17.5/17.5
Start input voltage [V]	125
No. of MPP trackers	2
Strings per MPP tracker	1
Max. inverter back feed current to array	0

## AC Output

Nominal AC power[VA]	5000
Max. apparent AC power[VA]	5000
Rated grid voltage (range)[VAC]	230 (176 to 270)
Rated grid frequency[Hz]	50/60
Nominal AC current[A]	21.7
Max. AC current[A]	21.7
Displacement power factor	0.99 leading...0.99 lagging
Total harmonic distortion(THDI)	<2%

## AC Input

Nominal AC power[VA]	5000
Rated grid voltage(range)[V]	230 (176 to 270)
Rated grid frequency[Hz]	50/60
Nominal AC current[A]	21.7
Max. AC current[A]	21.7
Displacement power factor	0.99 leading...0.99 lagging
AC inrush current	35
EPS rated power[VA]	5000
Max. EPS power[VA]	5000
EPS rated voltage, Frequency	230VAC, 50/60Hz
EPS rated current[A]	21.7
Max. EPS current[A]	21.7
Switch time	<20ms
Total harmonic distortion(THDv)	<2%
Parallel operation	Yes
Compatible with generators	Yes (signal provided only)

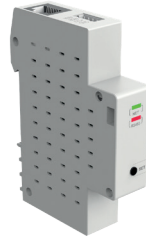
## Efficiency

MPPT efficiency	99.9%
Max. efficiency	97.6%
Max. Battery charge efficiency	95%
Max. Battery discharge efficiency	95%

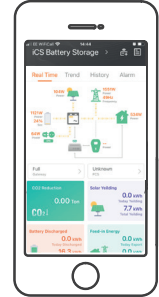
## Battery Parameters

Battery Types	Lithium Battery/Lead-ACID
Battery Voltage range[V]	40-58
Recommended battery Voltage[V]	48
Cut off Voltage[V]	40
Max. charging Voltage[V]	58
Max. Protective Voltage[V]	59
Max. charge/discharge current[A]	95/104.2
Peak charge/discharge current[A]	95/104.2
Communication Interface	CAN/RS485/Wifi/LAN/DRM
Reverse connection protection	Yes
Dimension [W/H/D](mm)	550 x 520 x 210
Net weight [kg]	29.8
Gross Weight [kg]	32
Operating temperature range [°C]	-25~+60(derating at 45)
Storage temperature [°C]	-25~+60
Storage /Operation relative humidity	4%~100%(condensing)
Altitude [m]	<2000
Ingress protection	IP65 (for outdoor use)
Protective Class	I
Night-Time consumption	<3W
Over voltage category	I II(mains) II(pv battery)
Pollution degree	II
Cooling	Natural
Noise level	<40dB
Communication interface	CAN/RS485/Wifi/LAN/DRM
Safety & Protection	
Over/Under voltage protection	YES
DC isolation protection	YES
Monitoring ground fault protection	YES
Grid protection	YES
DC injection monitoring	YES
Back feed current monitoring	YES
Residual current detection	YES
Anti-islanding protection	YES
Over load protection	YES
Over heat protection	YES
Max. output fault current	55A
Max. output over current	28.7A

## Accessories



The ICSESSG communication gateway allows the system to be monitored and controlled by the free iCS2.0Lite App and allows for remote technical backup from the iCS Team. It can be connected by Ethernet or WiFi.



ICSESSG

Communication Gateway

**The Gateway is included  
with each KIT**

## Quick Connection Cable Kits



ICSESSBC1 - Cable kit for linking ICSESSH5K and ICSESS1. Cables have quick connectors included for straight forward plug and play fitting 1m.  
ICSESSBC2 - 2m Cable Kit for linking ICSESSH5K to ICSESS1.



ICSESSBL - Cable kit for linking 2x ICSESS1 battery modules. Cables have quick connectors included for straight forward plug and play fitting. Kit includes Ethernet cable for BMS communication and DC cables.



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