IEB420K4EG-350LL3C-3 420kW /350kWh All-In-One full liquid cooled

Industry, Commercial and EV charging Station Battery Energy Storage Solution

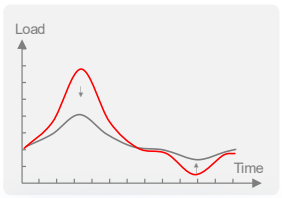
The IEB420K4EG battery energy storage system is specially designed for the commercial and industrial energy storage and EV charging energy storage applications. It offers all in one design with max 420kW power capacity and max 2 sets of 175kWh battery energy capacity.

It features building block design with power inverter, power distribution, PV access and battery access for easy maintenance and flexible configuration. Independent battery group access with separate battery bus isolation in power conversion enhances battery safety and the working life. Also supports optional STS function for instant backup power switch.

The bidirectional ACDC power module, PV MPPT DCDC converter, EMS controller, battery access interface and AC Grid access interface are all integrated in one power cube to improve the space efficiency and cost efficiency. It also offers easy alternative energy access and flexible configuration.

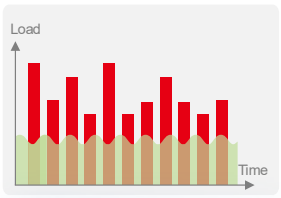
Full liquid cooled design and CATL high performance battery cell can meet the continue 1P and 1C charge and discharge performance with the whole battery group cells temepature difference keep in 5℃ to keep the 10000 times using cycles.

Application and Values



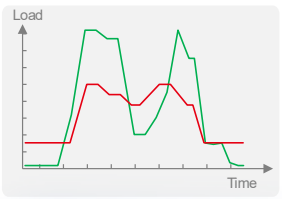
Peak Load Shifting

Charge during off-peak hours and discharge during peak hours, achieving peak-valley arbitrage or reducing electricity costs



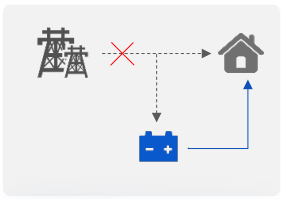
Dynamic Power Expansion

For intermittent high-power loads, the energy storage system can balance load output and achieve dynamic expansion



Cost saving

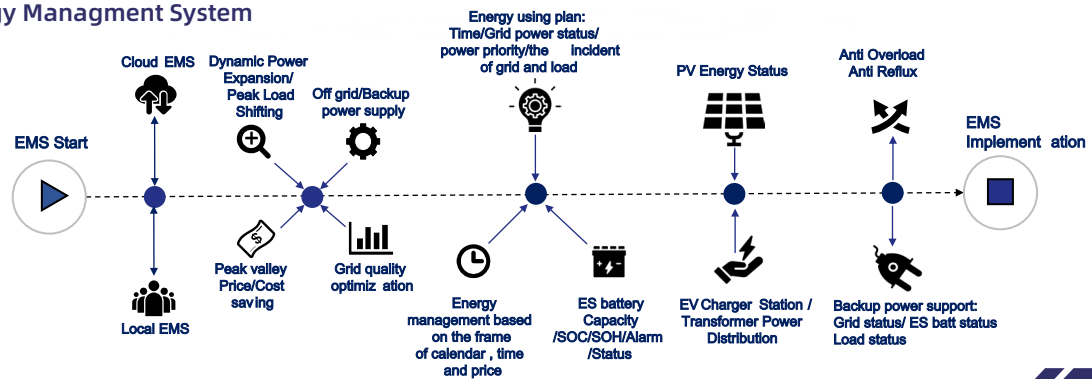
Participate in load side response and obtain government subsidies. Reduce peak power and save basic electricity bills.
Real and reactive power compensation to improve power quality



Off Grid -- Power Backup

When the grid is interrupted abnormally, the energy storage system provides uninterrupted power supply for important loads to avoid economic losses

Local Energy Managment System



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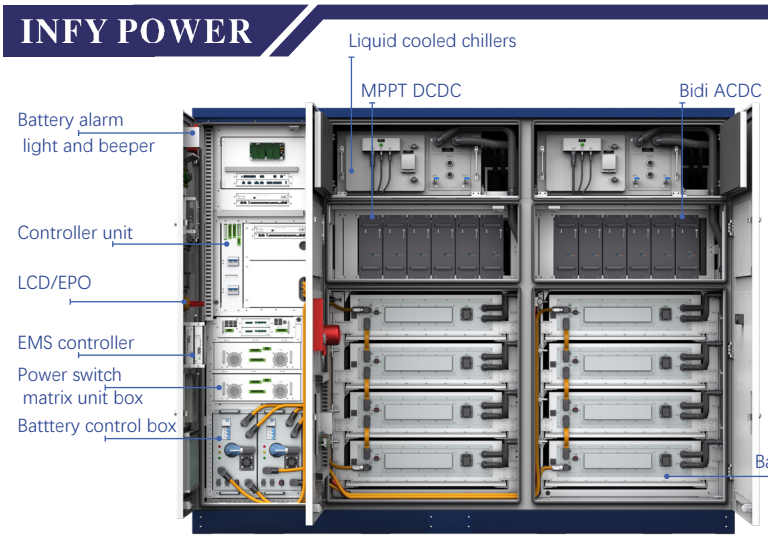

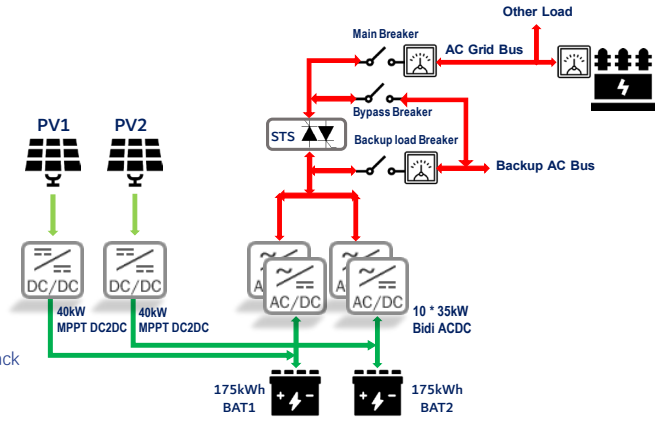

IEB420K4EG 420kW/350kWh All in one full liquid cooled Battery Energy Storage System		
AC grid access	AC voltage	260Vac-530Vac, 45-65Hz/ 3-phases+(N)+PE
	AC max power	420kVA (12 * 35kVA)
Inner Battery Groups	Battery group access	2 groups, independent with different ACDC groups connect
	Battery dis/ charging current ratio	1C charge and discharge, 1.1C discharge with 30 min
	Battery dis/ charging power to/ from AC Grid	Max 2 * (6 * 35kW)=420kW
Backup AC support (option)	STS Configuration	500kW
	STS power switch time	20mS
	STS efficiency	99.5%
	Function	ON/OFF grid control(automatic and manual), Seperate 3 phase and N line power switch
	Protection	Protection against countercurrent
	Backup Power	Max 420kW
	Bypass function / Off grid function	Yes (option)
PV access (option)	Access Channel	Max 2 channels (Reduce the Grid power as the power module slots shared with ACDC)
	Access Power	Max 2 * (2 * 40kWp) =160kWp, MPPT support
Electric Isolation		Full isolation between the Grid, Battery and the PV
Metering	AC Grid main side	1 bi-directional AC energy meter
	Backup load side	1 bi-directional AC energy meter
	Station transformer entry side (option)	1 bi-directional AC energy meter
EMS	Local EMS	IMMU2 EMS controller, inner EMS algorithm and big data
	Remote EMS platform	Based on the Ethernet/TCP IP, Websocket+Json, MQTT+Json, Modbus, IEC104, IEC61850
	Remote HW interface	4G/Wifi/WLAN and LAN
Insulation detect		Each Battery channel and Each PV channel, +/PE and -/PE detector
HMI		10 " TFT Touch Screen, 5 status LED , E-STOP , Battery Fire Alarm Light/Beeper
		Default English, Multi Language support.
Dimension	W * H * D mm = 2800 * 2200 * 1400 mm ; Weight: < 7000 kg	
Protection level	IP67 Battery pack, IP55 Battery area, IP54 Distribution area	
EMC/EMI	IEC61000-6-2/-4	
Safety Certification	EN62477-1, UL1741, EN 62109-1/-2, IEC62619, IEC63056, UL9540A, UL9540, UL1973	
Grid connection	EN50549-2/-10, VDE-AR-N 4105, UNE217001, UL1741SA/SB, CEI 0-21	
Fire protection	Completely submerged aerosol fire extinguishing system, water fire interface, optional Pack level active perfluorohexanone	
Fire sensors	Smoke detector + Variety of combustible gas detector	
Envirement Sensor	Water sensor + Temperature sensor + Humidity sensor + Door access seneor	
Safety Design	Explosion-proof board configuration and fire-proof spread structure design, emergency fan	

Power Module Configuration			
12 power module slots for the	LCG1K0135G	DC2DC converter, 40kW/1kV, MPPT support	Max 4 modules in parallel to support 160kW Solar power input
	LBG1K0120G	Bidirectional AC2DC inverter, 35kW/1kV	Max 12 modules in parallel to support 420kW Grid power

2 * 175kWH Liquid Cooled Battery Rack	
Energy Storage Battery	Two groups 175kWh liquid cooled battery rack. 614.4V (537.6V~691.2V), 285Ah, 1 P dis/charge, max 1.1P discharge 10 min
Battery Pack	CATL high performance ES 1P cell, 153.6V (134.4V~172.8V), 285Ah, 43.7kWh, liquid cooled, UL9540A certification, 334Kg
High Voltage Control Box	Two Infypower high voltage control box
Battery BMS	Infypower 2 level BMS structure: Battery Pack BSU + High voltage control box BMU
Thermal Management	Two liquid chilling unit with 20kW refrigerating and 2.5kW heating capacity each. Full Infy design and manufacture

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