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ESS DC 48V / AC 110V or 220V

Item names	Classifications	ESS-2K48V2KS-IB		ESS-3K48V2KS-IB	
Control	Input output type	Converts instantaneously commercial electric power/inverter output by non-contact switching (Within 4ms)			
	Output	Inverter sine wave output			
	Monitoring and control	Monitoring and controlling battery capacity. System supplementary operation mode detection function control (Automatic commercial electric power supplementary operation function at the load of above than 80% of rated capacity of inverter and if it becomes below 80% then it monitors and controls independent operation of inverter). Automatic power interruption monitoring function (UPS function). Normal discharge capacity(less 50% DOD) control. (Max 80% DOD in the grid power off period)			
Input type		Single phase 2 wires 110V 50/60Hz (Input Hz auto detection)			
Output	Voltage/ Frequency	AC110 +/-5%, 50/60+/-0.2Hz(Auto change frequency after detection of commercial input power)			
Inverter	Instantaneous maximum output	2kVA		3kVA	
	Continuous constant output	1.6kW		2.4kW	
	Characteristics	Using 600V IGET. Commercial power voltage waveform emulation control. All high frequency containing rate is within 5% in independent operation. Insulation by main transformer (Commercial power and inverter).			
Grid charger	Charge capacity	1.6kW		2.4kW	
	Rectification method	Use of SCR and electrolytic condenser			
	Charging method	Mixed charging method of constant current and constant voltage.			
	Charging control	PSOC(5 steps) charge control Adopted temperature compensation charge control program.			
Sunlight Power generation	Module voltage	DC60V ~ 99V			
	Connection capacity	2.0kW			
	Charge control	PWM control			
	PV module	Poly-crystal silicon 72 cell series connection x 4 panels. (Rated voltage: 68V to 72V, OCV: less than 96V)			
Battery	Lead Acid Tubular MF	TMF 12V 100Ah	TMF 12V 120AH	TMF12V 150Ah	TMF12V 200Ah
	Sealed Lead Acid Batt.	VT12V 100Ah	VT12V 120AH	VT12V 150Ah	VT12V 200Ah
	Available electric power	4.8Kwh	5.76KwH	7.2Kwh	9.6Kwh
	Nominal voltage	DC48V (Lead battery 12V x 4ea)			
Cooling	type	Natural cooling			
	Internal temperature rise	20°C			
Environment	Ambient temperature(°C)	-10°C ~40°C			
	Noise	MAX50dB below (1M Distance)			
	Dustproof/ Waterproof	IP 32 class			
	Humidity	95% below(The place where water droplets are not developed)			
	Installation environment	Under the roof of a house(The place where sunrays does not reach)			
Dimension (mm)		W305 x D385(With terminal block 410) x H460mm			
Weight		30kg		35kg	

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EPS ENERGY POWER SYSTEM

MODEL : EPS 3K216V		
DC input	Rated input voltageCVDC3	216VDC
	Operating voltage rangeCVDC3	189VDC~261VDC
	Current input no loadCA3	0.6
	Rated input currentCA3	23
Power grid	Rated voltageCVAC3	1 phase 2W/2W 100V
	Rated PowerCW3	3000
	Rated currentCA3	30
Inverter Output	Rated PowerCW3	3000
	Rated currentCA3	30
	Rated voltage CVAC3	100
	Output frequency CHz3	50Hz
	Power factor	97%
	Over load capacity	>85%
	Static Power(W)	<150
boundary dimension (L x D x Hi)		305X473X755mm
RE. weight	The approx. weight is for reference, not used for trade.	70Kg
Noise		≤40dB
Use altitude		≤4000m
Using temperature Range		-10≤~+50≤
Solar power charger	Option	

The EPS output capacity possible to be decided depends on client request.

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Energy Storage System

UKB Co.,Ltd.

Unikor Battery co., ltd.

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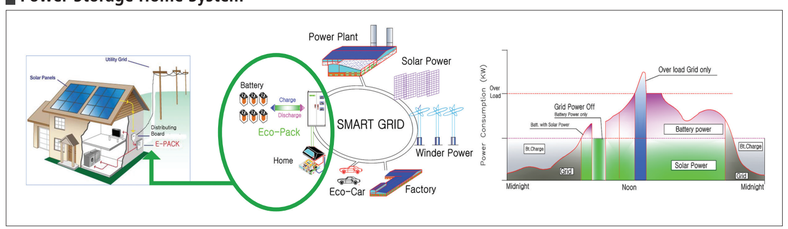
What is the EPS system?

This EPS can be used at peak time of electricity demand by recharging the power at lower priced time zone.
This can save secondary power and discharge at the peak time of power consumption to encourage the load leveling.
This can also reduce the CO2 emission, one of causing factor of global warming; at the same time, this also efficiently use accumulated power when the demand for electricity is more than its output capacity of commercial electricity from load.
It supplies the secondary power supplied from solar power to commercial power supply during peak time of power usage, promoting the electricity leveling and economic benefits.

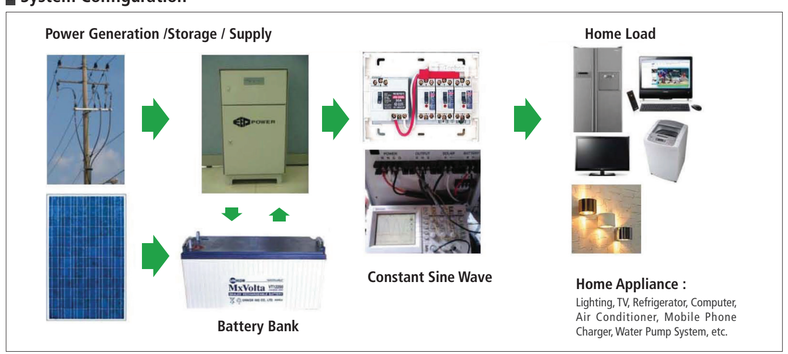
본 EPS시스템은 저렴한 시간대에 충전하여 전력 수요의 피크 시간대에 맞추어서 사용할 수 있고, 잉여 전력을 저장하였다가 전력소모의 피크시간대에 방전하여 및 부하 평준화를 도모할 수 있으며, 온난화의 원인이 되는 CO2 절감에 기여할 수 있음과 동시에, 부하로부터 상용전력의 출력용량 이상의 전력요구가 있는 경우에 축전지에 축전된 전력을 유효하게 사용할 수 있을 뿐만 아니라, 전력사용 피크시간대에 태양광발전에 의해 발전한 잉여전력을 상용전력 측에 공급하여, 전력 평준화와 경제적 이익을 도모할 수 있다.

전력의 피크는 일반적으로 낮 동안 시간대별로 집중되고 밤에는 전기 수요가 낮아 공급과잉 에너지 낭비를 초래하고 있다. 따라서 이 낮에 시간대별로 부족되는 현상을 가정, 학교 및 사무용빌딩 등에 전력저장시스템을 설치하여 전력낭비를 막고, 부하평준화를 이루게 하는 전력저장용 축전장치이다. 앞으로 스마트 그리드와 함께 무휴의 전력관리, 공급 과잉의 전력관리, LOW LOAD 시간 및 PEAK 부하 시간에서 단위지역별 부분 부하의 관리를 통해 부하평준화를 실현함으로써 전력낭비를 줄이고 전력을 효율적으로 관리하여 CO2를 절감하는 시스템이다.

Power Storage Home System



System Configuration



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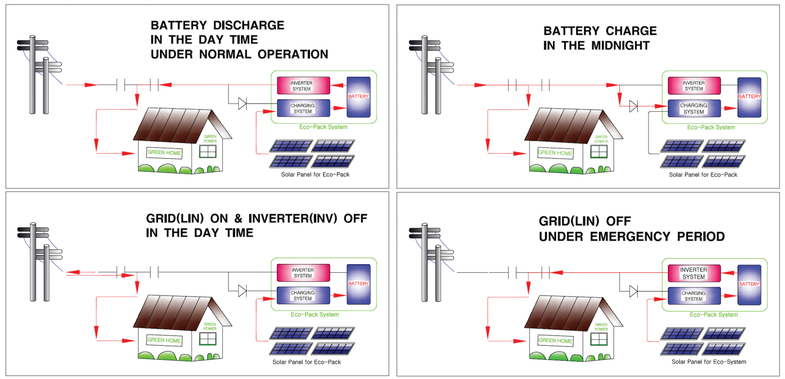
System Diagram

Various Operation Diagram



EPS Operation

Usual time period

- Power peak control with a 24 hour timer and energy storage: The power supply from energy storage can be set up with a timer; thus, the power usage at peak hours can be controlled and the secondary power during light-loading will be accumulated.

Use at emergency time

- The load at emergency supplies the power for 24 hours by energy collected from solar power as usual.
- (Daytime: Use solar power or charge battery / Night time: Use storage battery)

Feature

- Power peak control with a 24 hour timer and energy storage.
- An automatic operation by program input parameter.
- Good quality of constant sine wave power supply.
- It automatically detects the blackout of the moment and supplies the power to load with a non-contacting switch method. (Uninterruptible power equipment like a UPS)
- No maintenance required due to long lived and high performance of lead-acid or Li-ion battery.

비상시

- 비상시 부하는 평소와 같이 태양광 발전의 축전에 의해서 24시간 전력을 공급한다. (주간: 태양광 사용 및 배터리 충전 병용사용/야간: 축전지 사용)

평상시

- 태양광 발전전력에 의한 전력판매 가능 : 선택사양 설계에 따라 태양광 발전의 매전이 가능한 시스템이 구성되어 있다.
- 24시간 타이머제어로 전력피크제어 및 축전 : 프로그램 타이머로 배터리로부터 전력공급을 설정 할 수 있어 사용 시간대 별로 피크전력제어 및 경부하시 잉여전력 축전이 된다.
- 양질의 정현파 전원공급 : 본 시스템은 정밀한 전원장치로서 가정용 전자제품의 오동작과 수명에 영향이 없다.
- 장수명 고성능의 배터리의 사용에 의한 유지보수가 없음.
- 태양광 모듈로 부터 전력을 자립으로 발전하여 배터리를 보조충전하고, 사용되는 부하에 배터리와 같이 전력을 공급하는 시스템임.
- 프로그램 입력 파라미터에 의한 전자동방식으로 운전한다.
  (정전 복전시에도 전자동에 의하여 운전한다)
- 쌍방향 전력인버터/컨버터 방식으로 에너지효율이 높아 전력절감 효과가 높다.

정전시

- 정전을 순간적으로 자동감지하고 부하로 전력공급을 스위칭 무접점방식으로 한다.
- UPS와 같은 무정전전원장치 기능을 가지고 있다.

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ESS DC 168V / AC 110V or 220V

Item names	Classifications	ESS- 1.5K168V2KS	ESS- 3K168V2KS	ESS -5K1682KS
Control	Input output type	Converts instantaneously commercial electric power/inverter output by no n-contact switching (Within 40ms)		
	Output	Inverter sine wave output		
	Monitoring and control	Monitoring and controlling battery capacity. System supplementary operation mode detection function control (Autom atic commercial electric power supplementary operation function at the l oad of above than 80% of rated capacity of inverter and if it becomes bel ow 80% then it monitors and controls independent operation of inverter). Automatic power interruption monitoring function (UPS function). Normal discharge capacity(50% DOD) control Automatic battery discharge extension monitoring function in case of po wer interruption(80% DOD)		
Input type		Single phase 3 wires 110/220V 50/60Hz		
Output	Voltage/ Frequency	AC110/220V +/-5%, 50/60+/-0.2Hz(Product is supplied per frequency)		
Inverter	Instantaneous maximum output	1.5kVA	3kVA	5kVA
	Continuous constant out put	1.2kW	2.4kW	4kW
	Characteristics	Full bridge type. Using 600V IGET. PWM control. Commercial power voltage waveform emulation control. All high frequency containing rate is within 5% in independent operation. Insulation by main transformer (Commercial power and inverter). Removes DC high frequency by reactor.		
AC filter type		Reverse L type and LC filter		
Grid charger	Charge capacity	1.2 kW	2.4kW	3 kW
Sunlight power generation	Rectification method	Use of 600V IGBT and electrolytic condenser		
	Charging method	Mixed charging method of constant current and constant voltage. Automatic uniform charging per every 30 times. measure the battery temperature and control of the charge amount by compensating the charge voltage		
	Charging control	PSOC(6 steps) charge control Adopted temperature compensation charge control program.		
	Module voltage	DC224V ~ 252V		
	Connection capacity	1kW	2kW	4kW
	Lead Acid Tubular MF Battery	TMF-12V 70Ah	TMF-12V 120Ah	TMF-12V200Ah
	Sealed Lead Acid Battery	VT1270	VT12120	VT12200
	voltage	168V(Lead battery 12V x 14ea, LiFePO4 battery 3.2V x 56ea)		
	Available electric power	11kWh	20kWh	33kWh
Cooling	type	Natural cooling		
	Internal temperature rise	20$		
Environment	Ambient temperature($)	-10$~40$		
	Noise	MAX50dB below (1M DISTANCE)		
	Dustproof/ Waterproof	IP 32 class		
	Humidity	95% below(The place where water droplets are not developed)		
	Installation environment	Under the roof of a house(The place where sunrays does not reach)		
Dimension (mm)		W500 D300 H750	W500 D330 H775	W540 D350 H775
Weight		30kg	60kg	80kg

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