

# A Complete Power System For Your Vehicles



# What is an complete power system for your vehicles?

**YIY energy storage system for vehicles** is an integrated solution for providing reliable and sustainable power in various vehicle applications, including recreational vehicles (RVs), ambulances, trucks, and buses etc.

This system leverages solar energy and advanced energy storage technology to ensure uninterrupted power supply for onboard equipment and appliances. It will include following key components: Pure Sine Wave Inverter, Lithium-ion Battery Packs, Solar Charge Controller, Solar Panels, Monitoring and Control System, etc.

①



Off Grid Inverter Charger



Solar Inverter

②



LFP-RV  
LiFePO4 Battery Pack



LFP  
LiFePO4 Battery Pack



LFP-B  
LiFePO4 Battery Pack

③

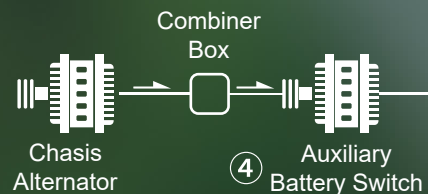


MPPT Solar Charge  
Controller

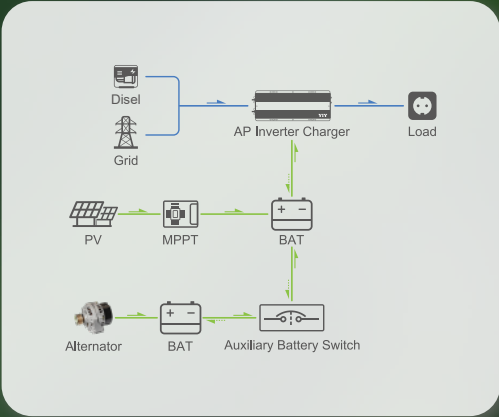
④



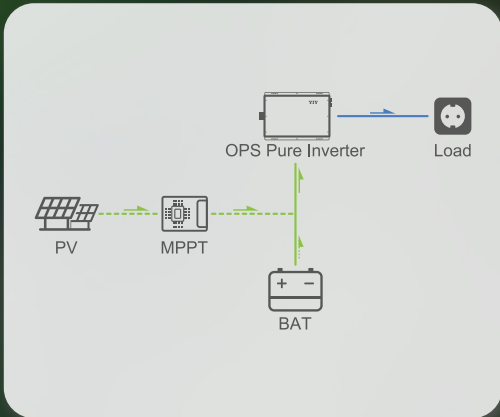
Auxiliary  
Battery Switch



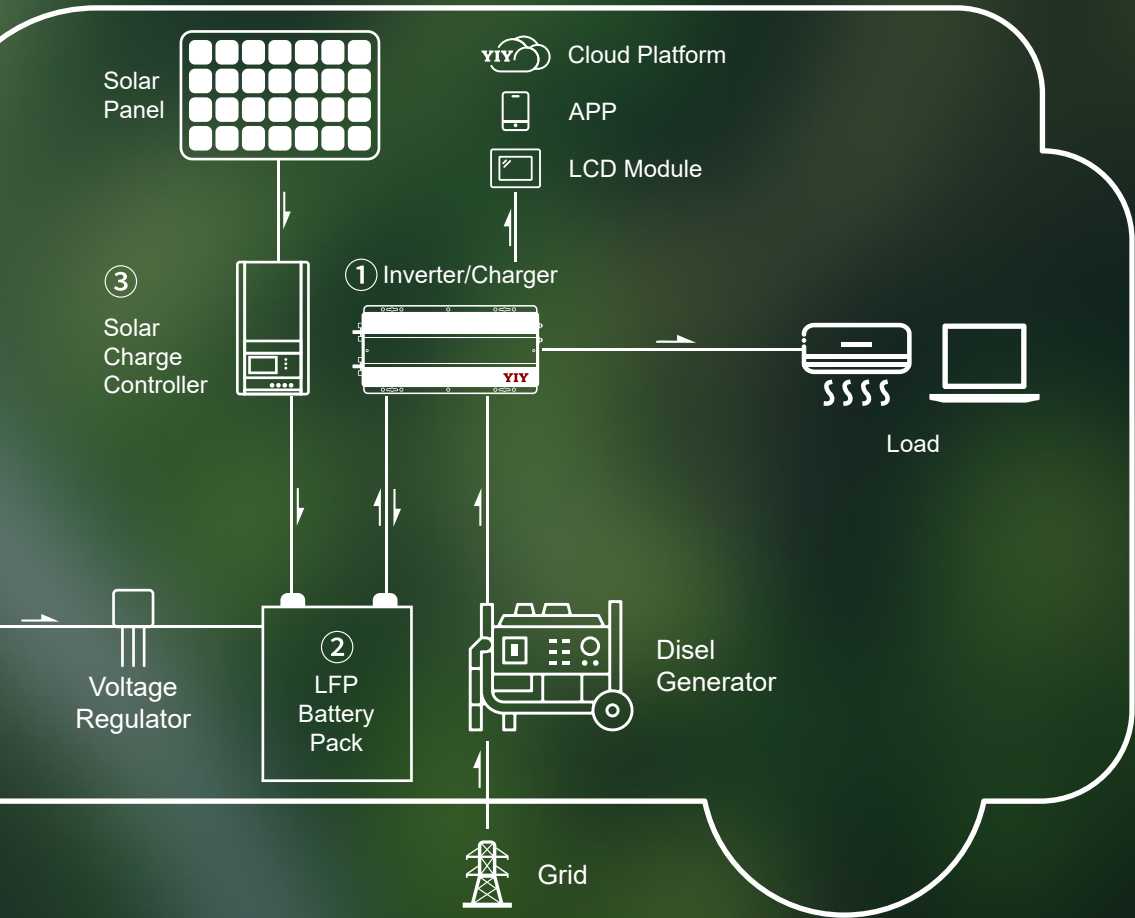
• Topological Diagram



System 1



System 2



# AP

## Off Grid Inverter Charger



### • Features

- From 600W up to 6KW.
- 230Vac single phase, 120Vac single phase, or 230Vac split phase optional.
- 12V/24V/48V optional.
- AGS, BTS ports compatible.
- Built-in voltage stabilisation (optional).
- Built-in solar controller MPPT (optional).

### • Product Appearance



Appearance 1



Appearance 2



Appearance 3

## • Technical Parameter

AP Series Off Grid Inverter Charger									
Inverter Output	Model	600W	1000W	1500W	2000W	3000W	4000W	5000W	6000W
	Continuous Output Power	600W	1000W	1500W	2000W	3000W	4000W	5000W	6000W
	Surge Rating (20S)	1800W	3000W	4500W	6000W	9000W	12000W	15000W	18000W
	Capable Of Starting Electric Motor	0.6HP	1HP	1.5HP	2HP	3HP	4HP	5HP	6HP
	Output Waveform	Pure Sine Wave / Same As Input (Bypass Mode)							
	Nominal Efficiency	88% (Peak)							
	Line Mode Efficiency	>95%							
	Power Factor	0.9-1.0							
	Nominal Output Voltage rms	100-110-120Vac / 220-230-240Vac							
	Output Voltage Regulation	±10% RMS							
	Output Frequency	50Hz ± 0.3Hz / 60Hz ± 0.3Hz							
	Short Circuit Protection	Yes, current limit function (Fault after 1 sec)							
	Typical Transfer Time	10ms (Max)							
THD	<10%								
DC Input	Nominal Input Voltage	12.0Vdc (*2 for 24Vdc, *4 for 48Vdc)							
	Min. Start Voltage	10.0Vdc							
	Low Battery Alarm	10.5Vdc/11.0Vdc							
	Low Battery Trip	10.0Vdc/10.5Vdc							
	High Voltage Alarm & Fault	16.0Vdc							
	High DC Input Recovery	15.5Vdc							
	Low Battery Voltage Recover	13.0Vdc							
	Idle Consumption-Search Mode	<25W when power saver on							
	Charger	Input Voltage Range	Wide: 90-135Vac / 164-243Vac Narrow: 100-135Vac / 194-243Vac						
Output Voltage		Depends on battery type							
Charger Breaker Rating		7A	10A	10A	10A	20A	20A	30A	30A
Max. Charge Rate		20A±5A	35A/70-90A Max. (Charger current control)						
Over Charge Protection Shutdown		15.7V for 12Vdc (*2 for 24Vdc, *4 for 48Vdc)							
Charger Curve(4 stage constant current) 4 Step Digital Controlled Progressive Charge		Battery types (*2 for 24Vdc, *4 for 48Vdc)							
Bypass& Protection		Input Voltage Waveform	Sine wave (Grid or Generator)						
	Nominal Voltage	120Vac					230Vac		
	Low Voltage Trip	80V/90V±4%					184V/154V±4%		
	Low Voltage Re Engage	90V/100V±4%					194V/164V±4%		
	High Voltage Trip	140V±4%					253V±4%		
	High Voltage Re Engage	135V±4%					243V±4%		
	Max Input AC Voltage	150Vac					270Vac		
	Nominal Input Frequency	50Hz or 60Hz (Auto Detection)							
	Bypass Breaker Rating	7A	10A	15A	20A	30A	30A	40A	40A
	Transfer Switch Rating	30Amp for UL&TUV Max. Bypass Current					270Vac 40Amp		
Mechanical Specification	Inverter Dimensions(L*W*H)	325*173*135mm	362*173*135mm		442*218*179mm		598*218*179mm		
	Inverter Weight	7.5KG	11KG	14KG	20KG	24KG	35KG	45KG	45KG
	Display	Status LED / Status LED+LCD							



# OPS

## Solar Inverter



### • Features

- Adopts new pure sine-wave inverter topology (THD < 3%) .
- High power density with superior reliability and performance.
- Capable of driving highly reactive & capacitive loads at start moment.
- Advanced DSP control, Input/output isolated design.
- LED indicators display.
- Low power "Power Saving Mode" to conserve energy.
- Surge Rating: 2\* Prated.

### • Technical Parameter

OPS Series Solar Inverter											
Input	Item	0612	1012	—	2012	0612E	1012E	—	2012E	3012E	—
		0624	1024	1524	2024	0624E	1024E	1524E	2024E	3024E	4024E
	Nominal Voltage	12Vdc(*2 for 24Vdc)									
	Operating Range	10Vdc-15.1Vdc									
Output	Startup Voltage	11.75Vdc-14.8Vdc									
	Output Waveform	Pure Sine Wave									
	Output Power	600W	1000W	1500W	2000W	600W	1000W	1500W	2000W	3000W	4000W
	Surge Rating	2*Prated									
	Nominal Output Voltage	110/115/120Vac				220/230/240Vac					
	Output Voltage Regulation	± 5%(When input voltage higher than battery-low level)									
	Output Frequency	50/60Hz±0.1%									
	Crest Factor	3:1									
	THD	<3%, linear load; <5%, non-linear load(At nominal Input voltage) <15%(At minimum cut-off (10Vdc) level)									
	Efficiency	>88% (Typical), 90% (Peak)									
	No load Current Draw	<15W	<15W	<15W	<25W	<20W	<20W	<20W	<30W	<35W	<40W
	Stand-by Current Draw	<6W	<6W	<6W	<10W	<6W	<6W	<6W	<10W	<10W	<10W
	Over Load Protection	Refer to Sec.3.9 and Sec.3.10									
Control	Weight (KG)	2.5KG	4.0KG	4.5KG	8.0KG	2.5KG	4.0KG	4.5KG	8.0KG	8.8KG	8.8KG
	Force Cooling	Load and Temperature Controlled Cooling Fan									
	Protection	Overload, Short Circuits, Reverse Polarity, Over/ Under Input Voltage, Over Temperature, High Output Voltage, Low Output Voltage, Unit Internal Failure, Unit In-Parallel Failure									
	Startup Time	< 5s									
	Power Saving Recovery Time	5s									

# LFP-RV 5.12kWh

## LiFePO4 Battery Pack



### • Features

- IP31 Protection, Indoor use only.
- 16PCS 100AH LiFePO4 cells .
- High reliability intelligent BMS .
- 12.8Vdc/25.6Vdc/51.2Vdc, 5.12KWH rated capacity.
- 5000 cycles at least on 80% DOD @25°C.
- Standard CAN & RS485 communication port.

### • Technical Parameter

LFP-RV 5.12kWh LiFePO4 Battery Pack			
Model	LFP12400RV	LFP24200RV	LFP48100RV
Rated Voltage	12.8V	25.6V	51.2V
Rated Capacity	400Ah	200Ah	100Ah
Rated Energy	5.12KWH		
Cell Configuration	4S4P	8S2P	16S1P
Standard Charge			
Operation temperature range @charging	0~60°C		
Rated charge voltage	13.8±0.1V	27.6±0.2V	55.2±0.4V
Max charge voltage	14.2±0.1V	28.4±0.2V	56.8±0.4V
Overcharge protection	14.6±0.1V	29.2±0.2V	58.4±0.4V
Allowed MAX charge current	220A 30s	110A 30s	55A 30s
Peak charge current	240A 5s	120A 5s	60A 5s
Rated charge current	200A	100A	100A
Standard Discharge			
Operation temperature range @discharging	-35~60°C		
Output Voltage Range	10-14Vdc	20~28Vdc	40~56Vdc
Discharge Cut-off voltage	10V	20V	40V
Allowed MAX discharge current	440A 30s	220A 30s	110A 30s
Peak discharge current	480A 5s	240A 5s	120A 5s
Rated discharge current	400A	200A	100A
Mechanical Characteristics			
Dimension H*W*D	450*320*240mm		
Weight(N.W.)	47KG		

# LFP 2.56 kWh

## LiFePO4 Backup Battery



### • Features

- IP31 Protection, indoor use only.
- 12.8/25.6Vdc 2.56KWH rated capacity.
- 5000 cycles at least on 80% DOD @25°C.
- Unique automatic calibration active balancing technology BMS syestem.
- Standard CAN & RS485 communication port.

### • Technical Parameter

LFP 2.56 kWh LiFePO4 Battery Pack		
Model	LFP12200M	LFP24100M
Rated Voltage	12.8V	25.6V
Rated Capacity	200Ah	100Ah
Rated Energy	2.56KWH	
Cell Configuration	4S2P	8S1P
Standard Charge		
Operation temperature range @charging	0~45°C	
Rated charge voltage	13.8+0.1V	27.6+0.2V
Max charge voltage	14.2+0.1V	28.4+0.2V
Over charge protection	14.6+0.1V	29.2+0.2V
Allowed MAX charge current	110A withstand 30s	55A withstand 30s
Peak charge current	120A withstand 5s	0A withstand 5s
Rated charge current	100A	50A
Standard Discharge		
Operation temperature range @discharging	-20~60°C	
Output Voltage Range	10-14Vdc	20~28Vdc
Discharge Cut-off voltage	10V	20V
Allowed MAX discharge current	220A withstand 30s	110A withstand 30s
Peak discharge current	240A withstand 5s	120A withstand 5s
Rated discharge current	200A	100A
Mechanical Characteristics		
Dimension W*D*H	450*260*185mm	
Weight(N.W)	26KG	



# LFP-B

## LiFePO4 Backup Battery



### • Features

- IP67 Protection
- 5000 cycles at least on 80% DOD @25°C.
- 12Vdc/24Vdc/48Vdc, Multiple capacities available.
- 12Vdc/24Vdc/48Vdc voltage output suitable for home energy storage system, communication stations and other applications.
- Support Bluetooth connection (Optional).

### • Technical Parameter

LFP-B LiFePO4 Backup Battery			
Model	LFP-10012	LFP-20012	LFP-10024
Capacity	12V100Ah	12V200Ah	24V100Ah
Continuous Discharge Current	50A	100A	50A
Peak Protection Current	100A	200A	100A
Working Voltage	10-14.6V		20-29.2V
Standard Voltage	12.8V		25.6V
Continuous Work Current	50A	100A	50A
Max Charge Voltage	14.6V		29.2V
Suggested DoD Model	80%		
Size(mm)	256*165*210	521*238*218	345*190*245
Weight	10kg	19kg	22kg

## MPPT Solar Charge Controller



- Intelligent Maximum Power Point Tracking technology increases efficiency 25%~30%.
- Maximum efficiency up to 98%.
- Support wide range of lead-acid batteries including wet, AGM and gel batteries.
- Three-stage charging optimizes battery performance.
- Battery temperature sensor (BTS) automatically provides temperature compensation.
- Automatic battery voltage detection.

MPPT Solar Charge&Discharge Controller				
MODEL	3KW	Charging Set points	Absorption Stage	Float Stage
Nominal System Voltage	12, 24, or 48 VDC (Auto detection)	Flooded Battery	14.6 / 29.2 / 58.4Vdc	13.5 / 27 / 54Vdc
Maximum Battery Current	60 Amps	AGM/Gel Battery (Default)	14.1 / 28.2 / 56.4Vdc	13.5 / 27 / 54Vdc
Maximum Solar Input Voltage	145Vdc	Over-charging voltage	15Vdc / 30Vdc / 60Vdc	
PV Array MPPT Voltage Range	(Bat. Voltage+5)~115Vdc	Overcharging comeback voltage	14.5Vdc / 29Vdc / 58Vdc	
Maximum Input Power	12 Volt~800 Watts 24 Volt~1600 Watts 48 Volt~3200 Watts	Battery defect voltage	8.5Vdc/ 17Vdc / 34Vdc	
Transient Surge Protection	4500 Watts / port	Battery defect comeback voltage	9Vdc / 18Vdc / 36Vdc	
Temperature compensation coefficient	Volt-5 mV/°C/ cell (25 °C ref.)	Mechanical and Environment	Product size (W*H*D mm)	322*173*118
Temperature compensation	0°C to +50°C	Product weight(Kg)	4.8	
Charging stages	Bulk,Absorption,Float	Enclosure	IP31 (indoor & vented)	

## Auxiliary Battery Switch



- Solid-state design with no moving parts for enhanced durability and reliability.
- Automatically disconnects loads to protect batteries from deep discharge or failure.
- Ultra-low on-resistance ensures high efficiency with minimal heat generation.
- Smart control of DC loads between auxiliary batteries and connected systems.
- Maintenance-free solution for safe and efficient power management.

Auxiliary Battery Switch		
Max Rated Current and Voltage Drop	350 Amps and 300mV VDC Drop with SMART Thermal Control	
Logic Power Current Draw	Normal Operation ( 60 mA) and Sleep Mode (2 mA)	
Operating Voltage Range	8VDC to 16 VDC	
Normal Operating Temperature	-4°F (-20°C) to 176°F (80°C)	
High Temperature Protection	System goes into smart thermal control between 176°F (80°C) and 194°F(90°C). (See manual for details on smart thermal control)	
Over Current Trip	200A to 350A for 2.5 minutes	
Surge Current Trip	>350A for 40 milliseconds	
Current Trip Cooldown	15 seconds cooldown between reconnects (Max of 3 reconnects before 15min cooldown)	
LED Indicator Status info	Solid Green LED	System ON
	Green LED Slow ( 1 second ) Blink	System OFF
	Solid RedLED	Alarm
	Red LED Fast ( ½ second ) Blink	High Voltage Disconnect>16VDC
	Red LED Slow ( 1 second ) Blink	Low Voltage Disconnect < Cut-Off
Power Terminals	M10 copper stud with tin plating and stainless steel nuts	
Power Terminal Torque	10 to 15 ft. lbs	
Ground (Digital Logic)	1/4-Spade Terminal with 16AWG wire. (Connect to Chassis Ground)	