



# **Viralka ESS**

**Energy Storage System**

# **PRODUCT SPECIFICATION**



## INTRODUCTION

An **Inverter** is a device that changes or inverts **Direct Current (DC)** input to **Alternate Current (AC)** output. It does not create or make electricity, just changes it from one form to another. DC in is changed to AC out. Output is usually 120 or 240 Volts at 60 cycle alternating current to match line power.

**Inverter** are often a good choice for applications that require the main engine to operate at a job site. Since Inverter are electronic devices, we do not have the noise of separate engine. An Inverter requires no fuel and virtually no maintenance. Inverter output is fully voltage and frequency regulated and functions independently from the speed of the engine.

The **Viralka ESS MPPT** Solar PCU with Inbuilt Lithium Battery is an innovative energy management system designed to optimize solar power utilization and ensure uninterrupted electricity supply. Combining **Maximum Power Point Tracking (MPPT)** technology with a built-in lithium battery, this PCU offers efficient energy harvesting, power conditioning, and storage in a compact and easy-to-install package. The MPPT technology enables the PCU to extract maximum power from solar panels by continuously adjusting their operating parameters to match the available sunlight conditions. This ensures optimal energy harvest, maximizing the efficiency of the solar power system and reducing dependency on the grid. In addition to solar energy harvesting, the PCU features a built-in lithium battery, providing energy storage for surplus solar power or backup power during grid outages. The lithium battery offers fast charging and discharging capabilities, ensuring efficient energy management and reliable backup power supply when needed.

## APPLICATION

1. DC power source utilisation
2. Uninterrupted power supply
3. Induction Heating
4. HVDC power transmission
5. Variable frequency drives
6. Electric Vehicle drives
7. The general case

## USES OF INVERTER

DC power source utilisation applications include use of DC in motor vehicles and from batteries to power AC loads and use of energy from Solar cells or Pragmatic cells (PO4) to power AC loads



## **CLASSIFICATION OF INVERTER**

1. Power inverter - A power inverter converts DC power or direct current to standard AC power or alternating current
2. Solar inverter - A Solar inverter is a type of electrical inverter that is made to change the direct current electricity from a photovoltaic array into alternating current

## **CHARACTERISTICS OF A GOOD INVERTER**

- Its output should be sinusoidal
- Its gain should be high
- Its output voltage and frequency should be controlled in the desired voltage
- The power required by its controlling circuit should be minimum
- Its overall cost must be minimum
- Its working life should be very long

## **CONCLUSION**

- Inverter is a simple but versatile circuit
- It is extensively used as a buffer in the output stage to reduce the loading effect of the previous stage
- Used as a basic block in many analogue circuit like Oscillators Amplifiers

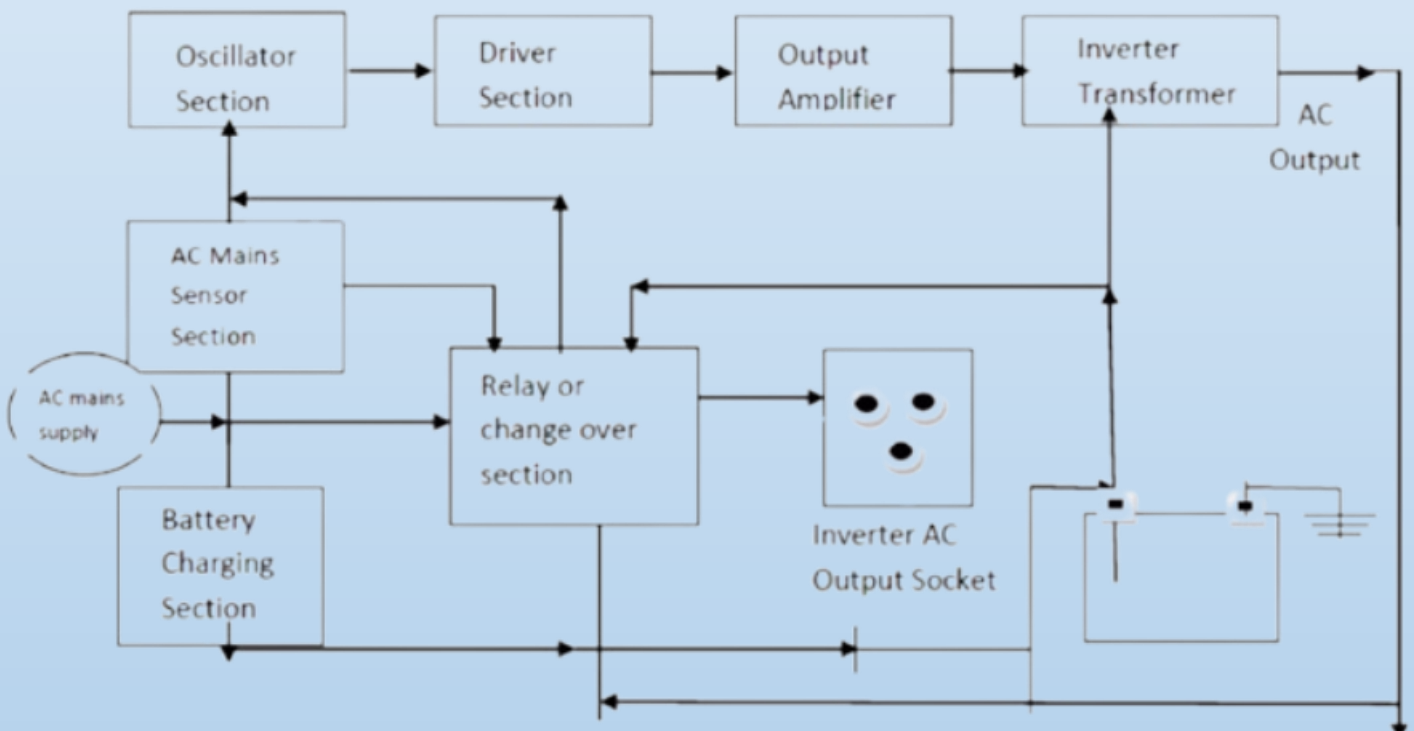


# Viralka ESS

Energy Storage System



## Wall Mount Inverter



Crafted out of Lithium Iron Phosphate (LiFePO<sub>4</sub>) technology, this is a battery built to last. with 6,000+ recharge cycles @80%DOD the 200Ah provides 5X the lifespan than your typical SLA battery. Built in smart BMS which can realize real-time monitoring the battery. It is the best home storage solution available in the market.

**We are offering Hybrid(Power & Solar Both :2 in 1)**



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Energy Storage System



<b>Rating</b>	1000 VA	1500 VA
Technology	High End DSP Technology	High End DSP Technology
Input		
Input Phase	Single Phase 2 wire	Single Phase 2 wire
Input Voltage Range		
Single Phase	220/230VAC	220/230VAC
Frequency	50 HZ +/- 10ft	51 HZ +/- 10ft
<b>OUTPUT</b>		
Output Wattage	900 Watt	1350 Watt
Out Put	Through Industrial Rug1.6 Amp 3PtN	
<b>Ouput on Mains/ UPS mode</b>		
Single Phase	220/230 VAC (Grid Dependent)	220/230 VAC (Grid Dependent)
Low Cutt Off	180 V	180 V
High.Cutt Off	260 V	260 V
O/PFrequency	50 HZ +/-0.196	51 HZ +/-0.196
Chg e ovRr dme In UPS Mode	Less than 10 msec	Less than 10 msec
Changeover tlma in inverter Mode	Less than 4Dmsec	Less than 4Dmsec
Power Factor	0.65/ >0.65 (Optional)	0.65/ >0.65 (Optional)
Battery Efficjency		
Wave Form		
Over Load	100XGonflnuous,110Nfor10Mn.	100XGonflnuous,110Nfor10Mn.
<b>DC Battery Parameters</b>		
Battery Type	Inbuilt Lithium Iron Phosphate (LiFePO4) battery	Inbuilt Lithium Iron Phosphate (LiFePO4) battery
Nominal baxery voltage	1K8	25.6
Battery Capacity	As per backup requirement	As per backup requirement
Max Oscharge Current(Full Load	80 Amp	80 Amp
Max Charge Current	35 Amp	35 Amp
Fan Run	On 50% toad	On 50% toad
DC fvtCB	1D0 Amp	1D0 Amp
Recharge Time	3& Hrs	3& Hrs
Extended Baxery Packs	Available (Optional)	Available (Optional)



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<b>INTERFACE COMMUNICATION</b>		
Optional	Buetooth/ CAN/RS232/ R5485 (Optional)	Buetooth/ CAN/RS232/ R5485 (Optional)
<b>OTHERS</b>		
<b>Display(Imp. Parameters)</b>	LCD display which shows the performance of the Inverter (AC mains Voltage, Battery voltage, battery charging status, load percentage, UPSON/OFF, Over temperature, Fault, overload etc	
<b>Operation with DG</b>	Compitable with DG Power Source	Compitable with DG Power Source
<b>Operating Temp. Humidity</b>	0-40°C Cooling Fan ON at 50% of rated load Cooling Fan OFF at 40% of rated load	
<b>Noise Level Protections</b>	Less than 45db at 1 mtr Distance	Less than 45db at 1 mtr Distance
<b>Protections</b>	Battery low alarm, Overload Protection, Short circuit Protection, Over heating Protection, Overcharge protection, Over discharge protection, Battery deep discharge protection	
<b>Indications</b>	AC Mains, Charging, UPS mode, Battery voltage	AC Mains, Charging, UPS mode, Battery voltage
<b>Alarms</b>	Mains Fall, Overload, Battery low darm	Mains Fall, Overload, Battery low darm
<b>Compatibility</b>	Solar charging through MC4 Plug and grid charging	Solar charging through MC4 Plug and grld charging
<b>Mounting</b>	Wall Mount	Wall Mount

**Wall Mount Inverter Available in**  
**500 W, 1000 W, 1500 W & 2000 W**



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**Inverter**

**Stackable Inverter Available in  
40000 W, 6000 W and Above as per  
requirement**



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### Technology Data

#### EHP Series EHP 10KTL (3 KW / 5 KW / 8 KW / 10 KW / 12 KW)

EPH	VP 3.0S	VP 5.0S	VP 8.0T	VP 10.0T	VP 12.0T
<b>Input (DC)</b>					
Max DC power	4500 W	7500W	12000W	15000W	15000W
Max DC voltage			1000Vd. c.		
MPPT voltage range			200... 850Vd.c.		
Max input current/per string			13Ax2		
Number of MPP trackers			2		
Number of input string			2		
<b>Battery Input</b>					
Battery Type			Li-Lon		
Battery voltage range			130 700V		
Maximum charge/discharge current			25/25A		
Charge strategy for Li-tou Battery			Self-adaptation to BMS		
<b>Output (AC)</b>					
AC nominal power	3000 VA	5000VA	8000VA	10000VA	12000VA
Max AC apparent power	08:00 AM	5500VA	8800VA	11000VA	13200VA
Max output current		10A	15A	17A	20A
Nominal AC output			50/60Hz ; 400/350		
AC output range			45/55Hz:280 490Vac(Adj)		
Power factor			0.8leading. 0.8laging		
Harmonics factor			<3%		
Grid type			3W/N/PE		
Three-phase unbalance output		0-100%	0-100%	0-1 00%	0-80%
<b>AC Output (Back-up)</b>					
Max AC apparent power	4000 VA	5000 VA	6000VA	8000VA	10000VA
Norminal Output Voltage			400/380V		
Norminal Output Frequency			50/60HZ		
Output THDV (@Liuear Load)			<3%		
<b>Efficiency</b>					
Maximum conversion efficiency	98%	98.0%	98.2%	98.2%	98.2%
European efficiency	97.30%	97.3%	97.5%	97.5%	97.5%
Max battery to AC Efficiency	97.20%	97.2%	97.4%	97.4%	97.4%
MPPT efficiency	99.90%	gg g•/,	gg g•/,	gg g•/,	gg g•/,
<b>Safety and Protection</b>					
DC reverse-polarity protection			Yes	Yes	Yes
DC breaker			Yes	Yes	Yes
DC/AC SPD			Yes	Yes	Yes
Leakage current protection			Yes	Yes	Yes
Insulation Impedance Detection			Yes	Yes	Yes
Residual Current protection			Yes	Yes	Yes
Output short circuit protection			Yes	Yes	Yes
Battery reerse connection protection			Yes	Yes	Yes
<b>General Parameters</b>					
Dimension (W/H/D)		548*444*184mm			
Weight		27 kg			
Operating temperature range °C		85			
Degree of protection		-25°C...+60°C			
Cooling concept		IP65			
Topology		Natural Convention			
Display		Transformerless			
Humidity		LCD			
Communication		0-95%, no condensation			
Warranty		Standard			
BMS communication		WiFi;GPRS/LAN(optional)			
Meter communication		Standard 5 years; 7/10 years			
Certificates and Approvals		optional			
		CAN/RS485			
		R4			
CQC, VDE-AR-N4105,IEC61727, IEC62116, VDE0124-AR-N0124, EN50549, IEC62109, IEC62477					

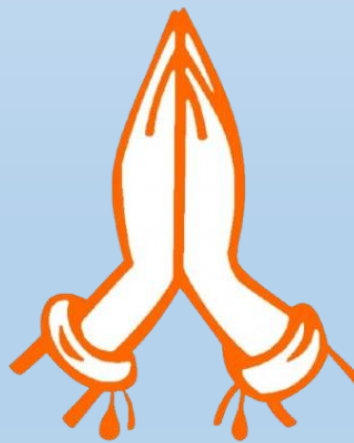




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# Thank You !!!



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