

OFF-GRID SOLAR INVERTER (MPPT) INDUSTRIAL



Our Solar Inverters (Pure Sine Wave) are much perfect for hybrid solar system. It has inbuilt sine wave inverter and PWM solar charger/SMPS charger in a single unit. It is specially designed to keep battery healthy for longer time period.

Convenience

Solar Hybrid PCU uses both Solar Power as well as A.C. Mains for charging the battery bank according to priority setting providing the users availability of uninterrupted power supply.

Salient Features

- ▶▶ User friendly Wide LCD display for better user interface.
- ▶▶ Smart Load sharing compatibility.
- ▶▶ Monitoring/data logging feature for better system information at user end (optional)
- ▶▶ Selectable charging current with high charging (HI) and Normal Charging (Low).
- ▶▶ PV availability, battery charging from solar power indication with solar power priority
- ▶▶ User friendly, control and selection switches with LCD indication on front panel
- ▶▶ Protections such as Mains MCB Trip, Overload, Short circuit, Battery low, over temperature indication with buzzer as well as display on LCD available
- ▶▶ Power Saving through No Load Shutdown Feature
- ▶▶ Maximum Solar Power Utilization during charging and backup mode
- ▶▶ PV pole reversal protection indication on LCD
- ▶▶ Deep discharge battery charging from A.C. Mains as well as Solar
- ▶▶ No humming Noise (Silent UPS)
- ▶▶ AC Mains available, battery charging/charged and it voltage indication provided on LCD display
- ▶▶ Two Modes of operation (EC/QC)
- ▶▶ Grid bypass option available.



3.5KVA | 5 KVA
7.5 KVA | 10 KVA

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Technical Specifications

Model Name	Units	ESI 4000	ESI 5500	ESI 6000	ESI 8000	ESI 10000	ESI 11000
System rating	VA	3500	5000	5000	7500	10000	10000
Full Load Input Current ±2A	Amp	63	104	50	75/63	77	48
Operating DC voltage	Volts	48		96	96/120	97	192
PV input							
Maximum Solar PV Power	Vdc	75/90		180	180/235		300
Maximum Solar array power	Wp	3500	5000	5000	7500	10000	10000
Max PV modules	Nos	14	16	20	30	30	40
Modules in series	Nos	2	2	4	4/5	5	8
Parallel strings	Nos	7	8	5	6	6	5
Max current rating of SCC	Adc	50.0	70.0	50.0	70/50	70.0	50.0
Efficiency of SCC	%	>90					
Switching element in Inverter							
			MOSFET		IGBT		
Type of Control							
			PWM		IGBT		
Nominal Output voltage in inverter mode	Vac	220V ± 7V		230±7V			
Output supply phases							
			single				
Nominal Frequency (in inverter mode)	Hz	50 ± 1					
Frequency (Min - Max during Grid by pass) UPS mode	Hz	47-53					
Frequency (Min - Max during Inverter mode)	Hz	40-60					
Output voltage regulation	%	195-220		195-230			
Output THD (v) at linear load	%	<5%					
Crest Factor		3:01					
Overload capacity 125%	Sec	6 (6 Retry)					
Overload capacity 150%	Sec	2 (6 Retry)					
Cooling Fan ON at temp	°C	Continuous Run					
Cooling Fan Off at temp	°C	Continuous Run					
Peak efficiency of inverter	%	89	88	87	88	89	88
Battery low voltage alarm per battery	Vdc	10.8 ± 0.2					
Battery low voltage cut per battery	Vdc	10.5 ± 0.2 (4 Retry)					
Batter low cut recovery per battery through Solar	Vdc	12.7 ± 0.2 (Or mains and Front Switch)					
Max Battery charging voltage by grid per battery	Vdc	14.4±0.2V					
Max Battery charging current by grid in Hi/Lo option	Adc	18±2					
Max Battery charging voltage by Solar per battery	Vdc	14.4±0.2V					
Battery High cut with Alarm per battery	Vdc	14.8±0.2					
Battery High cut Recovery per battery	Vdc	14.3±0.2					
Max Battery charging current by Solar	Adc	20±2					
Max Charging current to battery by Solar+Grid	Adc	20±2					
Grid low cut voltage (IT load/Normal load)	Vac	180/100 ± 10					
Grid low cut voltage recovery (IT load/Normal load)	Vac	190/110 ± 10					
Grid high cut voltage (IT load/Normal load)	Vac	265/280 ± 10					
Grid high cut voltage recovery (IT load/Normal load)	Vac	255/270 ± 10					
Grid charging Enable/Disable		yes					
Selection of UPS Load/Normal Load		Through switch					
<p>Selection of Operating Mode</p> <p>EC-Charging current= 20A ±1A Solar + Mains till boost voltage, System will cut off the mains when battery voltage reaches boost voltage level and output load is transferred to Solar + Battery and Grid reconnected <=11.5V per Battery.</p> <p>QC-Charging current = 20A ±1A Solar + Mains till battery boost voltage with maximum Solar Sharing. System will not be disconnect Grid in any case</p>							
Output Voltage at 100% load at Nominal Battery voltage	Vac	218±5				228±5	
Input current at no load at Nominal Battery voltage	Adc	2	2.2	2.2	2	2	2.2
Noise @ 1 meter	dB	<50					
<p>Protections</p> <p>Batt. Low, Batt. High,Overload, Short circuit,Over temp, PV reverse,MCB Trip/Fuse Trip</p>							
<p>LCD Display parameters</p> <p>PV Current, Bty voltage, Mains voltage, PCU on-off, UPS Mode on-off, Solar On-off, Load percentage (0 to 150%), Load status (on solar, battery or grid), Charging status, over load, short ckt, fault, battery low, over temp, PV reverse, MCB trip, (Alpha numeric 16x2)</p>							
Operating Temperature range	°C	0-50					
Storage Temperature range	°C	0 +65					
Max RH	%	95					
<p>Front panel details (MCB, Display, Selection switch etc)</p> <p>Display with Rocker Switch</p>							
<p>Rear panel details (MCB, Terminals etc)</p> <p>Fan,mcb,rotary,terminal,switch</p>							
<p>Enclosure protection</p> <p>20</p>							
Changeover time from inverter to mains in UPS mode	ms	<10					
Changeover time from inverter to mains in Normal mode	ms	<10					
Changeover time from mains to inverter in UPS mode	ms	<10					
Changeover time from mains to inverter in Normal mode	ms	<50					
<p>Mains connection</p> <p>TERMINAL 30A</p>							
<p>Output</p> <p>TERMINAL 30A</p>							
MCB in battery path		Yes					
Fuse in battery path		NO					
MCB in Solar path		Yes					
Fuse in Solar Path		NO					
<p>TDR (For Compressive Load)</p> <p>Provided</p>							
<p>Input Protection</p> <p>Through MCB</p>							
<p>Cabinet</p> <p>Metal Cabinet</p>							
Dimension (LxWxH) in mm		470x440x610	470x440x610	500x495x660	600x500x740	600x500x740	600x500x740
Net Weight		40	52	52	72	92	92
Gross Weight		42	56	56	76	96	96

Technical Specifications can be changed without prior notice.