

WE MAKE YOUR LIFE EASY....

Lento Industries Pvt. Ltd.
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Company Overview

Lento is driven by research and development but with a difference. Here at Lento the focus is on harnessing power of R&D to develop innovative, future-proof products that are aligned with markets and requirement of end users. A group of young technocrats with this common ideology got together and thus was born Lento, a company specializing in Power Electronics and Energy Efficiency.

Today Lento has come a long way from its modest beginnings and our R&D powers manufacturing of advanced technologies based product that include Inverters, Online UPS and static UPS, Automatic Lift Back-up System (ALBS), Solor Power Equipments, LED lights and BLDC motor application based products.

Total quality management is part of our corporate philosophy and goes hand in hand with our R&D based approach to manufacture future-proof products. Technology, we believe, should be for use of the masses and must be implemented in a way that is affordable with products that are reliable and can be serviced easily in case of need. While growth lies in catering to requirements of large corporations, we have always created products that will also meet the requirements of individuals and small home owners.

Today we boast of one of the widest range of products ranging from compact inverters for home use to grid tie and stand alone power plants. What sets our products apart from the rest is they feature intelligent controls, accuracy and precision one could find only in world famous, highly expensive brands. We have brought world class technologies and products to india through R&D, but at a fraction of the price. Lento today is on the threshold of greater expansion into a diverse range of products in efficiency power and energy.



Business Values & Core Strength

R&D powers our business and is fundamental to Lento's underlying enterprise spirit that has helped us deliver quality, world class innovations and change the landscape of power electronics.

We design and develop smart, rugged and highly reliable products that offer the best price to performance ratio in the class. This core philosophy has helped us create some unusual, advanced power electronic device, inverters, UPS, Solar batteries and LED lightings for energy efficiency products that will create a new dimension in this field.

We seamlessly integrate research & development, quality and delivery. Research by itself does not achieve much but research that brings products to markets and fulfils requirements is what makes a vital difference and Lento's focus on applied research does just that.

Anticipate the future and deliver products that are cost efficient and meet user requirements, giving them best returns on investments.

Manufacturing is supported by extensive service and maintenance with a division created specifically to handle this important task that is so essential for customer satisfaction.

Plough back profits into research and development of products as well as betterment of staff and the community in a holistic approach to business.

Listen to feedback from users as an important contributory element to improvement of our products and our way of working.



Always on the path of Progressive Technologies

Well on our way to becoming the top Indian Power Conversion Equipment Company, our strength is our in-house Research & Development wing. If our products have innovative features, perform with highest efficiency figures and are known for legendary reliability, the credit goes to our R&D team that has come up with designs customized for Indian operating conditions. We anticipate trends and tailor research to design products that perform flawlessly for years and are easy to maintain. Our R&D personnel have proven experience and work under an enlightened management that gives them free hand to innovate and develop products that make us market leaders.

R&D powers our activities and we consider it an essential part of operations and growth. R&D is what gives us the edge in an extremely competitive field.

Design & Technology

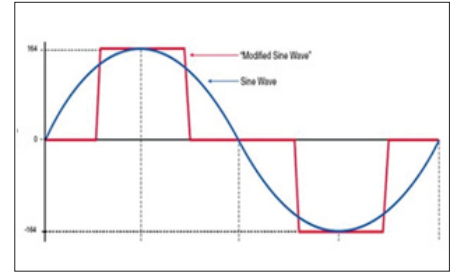
Our design and technology is driven from a user perspective. We ask ourselves what is available in the market and what features do users want? This is the fundamental principle of our design and technology ideologies. While quality is a prime ingredient, cost considerations are equally important as are functionality, ease of use and total reliability. While taking care of these elements in our standard range of products like our digital signal processing systems tied to switch mode technology used in our sine wave inverters. We modestly claim to be up there with the best, offering world class products and technologies as the outcome of our superior design capabilities.



OUR INCLINATION TOWARDS GREEN TECHNOLOGIES

Sine Wave Technology

- **Square Wave:** Very old style inverter. Ok for Bulb Loads. Not good for other appliances like Tube Lights, Fans, coolers and motors etc.
- **Quasi Sine Wave:** In basic it is square wave inverter, but at low load conditions the circuit in this type of inverters cuts some part of the square wave, Good for Bulbs. Not good for other appliances like Tube light, LED Light, Fans, coolers and and motors etc.
- **Micro Controller Based Pure Sine Wave:** Inverters are not pure sine wave as they claim it is. It gives low battery backup and it is very costly. Also these inverters create a very irritating high frequency noise which is very much disturbing..
- **DSP Based Pure Sine Wave :** This is the world's latest technology Inverter manufactured by Lento. This inverter is having all the advantages of Sign wave Inverter with backup time equal to square wave inverters. It creates no sound in load and in inverter. This gives exact replica of A C mains which is best suited for all kind of electrical appliances as all appliances are design to operate on this. This increases the appliances life span in terms of operation life.



Solar System

Our units are flexible, modular and scalable allowing remote deployment with minimal physics intervention due to a high degree of electronic automated monitoring and controlling processes. Stand alone system, hybrid, home units or industrial, grid tied we have a solution for every situation. Being reliable and manufactured using military grade components, our solar systems perform day in, for years with minimal maintenance.

Led Lights

LED is the light of the future and Lento has developed advanced LED lighting devices in the form of LED bulbs and LED tube lights with high lumen output, excellent reliability, durability, color rendering and affordable prices. For interior lighting we have affordable energy efficient LED light and streetlights we offer next generation high lumen high watt LED arrays in the range of 3W to 150W which includes LED bulbs, Tubelights & Street Light. Our LED lighting solutions will save the nation a huge amount of energy and reduce green house gas emissions as well as the carbon footprint.

BLDC Motor

BLDC motors are more versatile, mainly because of their savvy in the speed and torque department. They also come in compact packages, making them viable for a variety of compact design. Typical apps include computer hard drives, mechanical-based media players, electronic-component cooling fans, cordless power tools, HVAC and refrigeration, industrial and manufacturing systems, and direct-drive turntables.

Another advantage of a BLDC motor is that it can be made smaller and lighter than a brush type with the same power output, making the former suitable for applications where space is light

Because a BLDC motor dispenses with the brushes -- instead employing an "electronic commutator" -- the motor's reliability and efficiency is improved by eliminating this source of wear and power loss. In addition, BLDC motors boast a number of other advantage over brush DC motor and induction motor, including better speed versus torque characteristic; faster dynamic response; noiseless operation; and higher speed ranges.

Traditionally, ferrite magnets were used to make the permanent magnets, While these magnets are more expensive, they generate greater flux density, allowing the rotor to be made smaller for a given torque. The use of these powerful magnets is a key reason why BLDC motors deliver higher power than a brush-type DC motor of the same size.

Moreover, the ratio of torque delivered relative to the motor's size is higher, making it a good choice for applications such as washing machines and EV's where high power is needed but compactness and lightness are critical factors.



Manufacturing Facility

Lento boasts of state of art manufacturing facilities in a modular and well organized workflow environment. We have well organized sections segregated into.

- Input section where components are received and batch tested;
- PCB design and manufacturing section where our engineers use CSD stations to design PCBs and these are later translated to PCBs. We use only glass epoxy boards for high reliability;
- Assembly section with pick and place equipments for SMT and SMD, and wave soldering units in a highly automated, high speed process that gives us high production capabilities with consistencies and reliabilities into the process. This is the heart of our manufacturing unit producing populated PCBs for solar systems, for inverters, UPS, SMPS and LED lights. We have opted for SMT and SMD resistors, capacitors and chips for compact form factor, fast manufacturing and high reliability as cost efficiency.
- Quality check division to check sup-assembly boards.
- Sheet metal unit where outer cabinets are manufactured and powder coated for long life.
- Final assembly and test section where each product undergoes 24 hour burn, overload, temperature and humidity tests according to international norms before being passed for dispatch.
- State Of Art Manufacturing Facility Of LED Acid Tubular And SMF VRLA Batteries

Quality Consciousness

Sourcing Quality Management



“Quality is our **Passion** &
Quality is our **Business**”

Each of our products is made up of hundreds of components, majority of them sourced from reputed vendors. Still, we have our own stringent system of rigorous checks and instruments that will detect flaws in components. Our aim is to achieve zero defect and it starts with checking parts and components at source, not at the assembled stage.

Here at Lento we are of the firm belief that if we take care of quality at the source, half of the work is done and that too in an easy manner since it is easy to check components before fitting into circuit board rather than try to identify faults afterwards. Hence, our rigorous focus on checking each component at source to ensure fail safe performance.

In-House Production Quality

Our in-house production quality plan is simple and fool-proof because it is detailed and without compromises. We take lot-wise samples, check for all parameters and pass only assemblies that conform to specs. Only if samples pass stringent physical, electrical, mechanical and electronic tests are the final products approved for dispatch.

In-Process Quality Management

Production comprises number of stages. Only those components that are approved go into process. Here too, each sub-assembly is tested for all parameters using human intervention and specialized tools and equipments developed for that purpose. Only if a sub-assembly passes the tests is it approved for onward process. If faults are detected production people receive full report and our R&D is also involved in order to detect and root out such flaws for future batches.

Final Product Quality Management

The final product, whether it is a small inverter or a complex, digital, microprocessor controlled UPS or power plant, undergoes the 24 hour bourn in test only once it passes the test for all parameters. Products are test.





Solar Hybrid Systems - Eco-Smart Series and Eco Sun Series (LKVA)

Solar Hybrid Systems (PCU) are ideal in case of higher loads. The Hybrid Solar System feature a bank of solar photo voltaic modules tied to a bank of batteries with a controlling interface. The controlling interface is the critical component here. Lento has designed a superior computerized digital controller with these features:

Convenience

Solar Hybrid System uses both Solar Power as well as A.C. Mains for charging the battery bank according to priority settings which provides the users uninterrupted power supply always.

Salient Features

- ▶ Smart load sharing compatibility.
- ▶ Inbuilt Solar Charge Controller with high charging current
- ▶ Three stage solar charging (TSSC), suitable for all type of battery charging .
- ▶ PV availability, battery charging from solar power indication with display on LCD.
- ▶ Deep discharge battery charging from A.C. Mains as well as solar .
- ▶ Battery type charging selection (Tubular /Flat /SMF/GEL)
- ▶ Triple Modes of operation (EC/SC/NC)
- ▶ Smart grid charging with Enable/Disable option.
- ▶ User selectable UPS and Normal Mode.
- ▶ Resettable AC circuit breaker which reduce service calls.
- ▶ Compatible with D.G. sets.
- ▶ Protections against short-circuit ,Mains Fuse Trip , Overload, Reverse Phase, Low Battery, Reverse Battery And Over Temperature (With proper indications with buzzer as well as display on LCD available).
- ▶ User friendly, feather touch control and selection switches with LED indication on front panel.
- ▶ Battery charging even at low voltage.
- ▶ Grid bypass option available.



300VA | 700VA | 900VA | 1100VA | 1600VA | 2100VA | 2500VA

Technical Specifications

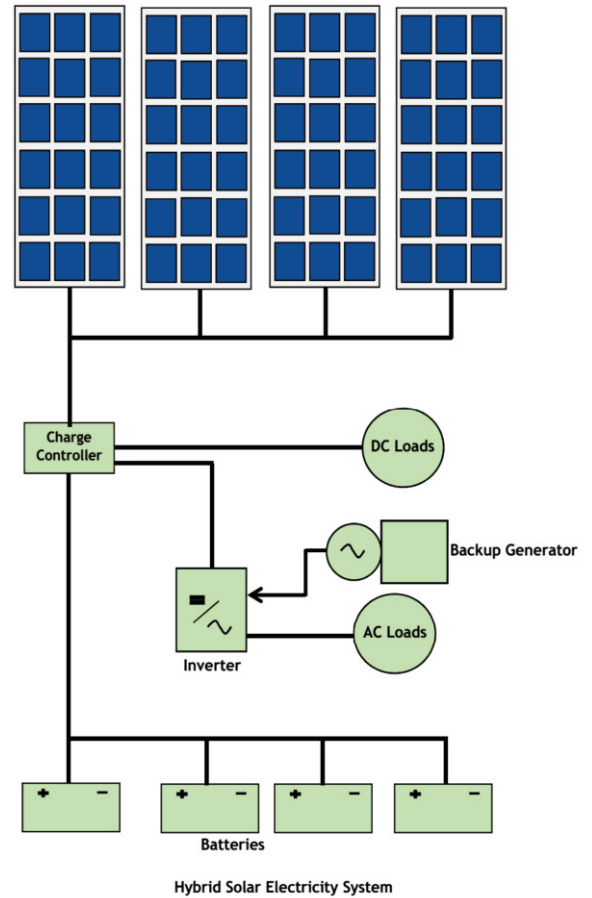
ModelName	Eco-Smart 450/900		Eco-Smart 1100		Eco-Smart 1250		Eco-Smart 1600		Eco-Smart 2000		Eco-Smart 2500		Eco-Smart 3000		
System rating (Name Plate)	VA	300/700	900		1100		1450		1600		2100		2500		
Operating DC voltage	V	12	12		12		24		24		24		24		
Input voltage max Voc (PV)	Vdc	25		45											
Maximum Solar array power (PV)	Wp	300-700	900		1000		1600		1600		2000		2500		
Max PV modules	Nos	2(165W)/4(165W)		5(165W)		6(165W)		5(335W)		5(335W)		6(335W)		8(335W)	
Type of solar charger			PWM												
Max current rating of SCC	Adc	20/50		50										70	
Efficiency of SCC	%	>90													
Switching element in Inverter								MOSFET							
Type of Control								PWM							
Nominal Output voltage in inverter mode	Vac		220V ± 7V												
Nominal Output Frequency of Inverter	Hz		50/60 ± 1 (Default is 50Hz) selectable 50/60Hz (Optional)												
Frequency (Min - Max during Grid by pass) UPS mode	Hz		47-53/57-63												
Frequency (Min - Max during Grid by pass) Inverter mode	Hz		40-60/50-70												
Output voltage regulation	%		180-220												
Output THD (v) at linear load	%		<5%												
Creast Factor			3:01												
Overload capacity 125%	Sec		6 (6 Retry)												
Overload capacity 150%	Sec		2 (6 Retry)												
Battery low voltage alarm per battery	Vdc		10.8 ± 0.2												
Battery low voltage cut per battery	Vdc		10.5 ± 0.2 (With 4 Retry)												
Batter low cut recovery per battery through Solar	Vdc		12.7 ± 0.2 (or Mains or reset switch on front panel)												
Max Battery charging voltage by grid per battery			14.4 ± 0.2												
			Settable for Tub-14.4V/28.8V, GEL-14.2V/28.4V, SMF-14.2V/28.4, Flat-14.2V/28.4V												
			Settable for Tub-13.8V/27.6V, GEL-13.8V/27.6V, SMF-13.8V/27.6, Flat-13.6V/27.2V												
Max Battery charging current by grid in Hi/Lo option	Adc		16/12 ±2A												
			Settable for Tub-12/16A, GEL-10/16A, SMF-10/14A, Flat-14/10												
Max Battery charging voltage by Solar per battery (LCD Models)	Vdc		14.4 ± 0.2												
			Settable for Tub-14.4V/28.8V, GEL-14.2V/28.4V, SMF-14.2V/28.4, Flat-14.2V/28.4V												
			Settable for Tub-13.8V/27.6V, GEL-13.8V/27.6V, SMF-13.8V/27.6, Flat-13.6V/27.2V												
Battery High cut with alarm per battery (LCD Models)	Vdc		15.5±0.2												
Battery High cut Recovery per battery (LCD Models)	Vdc		14.5±0.2												
Max Battery charging current by Solar	Adc		20±2A												
Max Charging current to battery by Solar+Grid	Adc		20±2A												
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	yes														
HC-Charging current = 20A ±1A Solar + Mains till battery boost voltage with maximum Solar Sharing. System will not be disconnect Grid in any case															
Selection of Operating Mode (LCD Models)		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 <=11.8V/11.2V per Battery.													
SC-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 <=12.0V per Battery or Solar fails or if Solar <5A check if Solar < discharging connect grid															
Input current at no load at Nominal Battery voltage	Adc	2.2	2.6	2.4	2.2	2.5	2.2	2.5	2.2	2.8					
Noise @ 1 meter	dB	<50													
Protections			Overload, Battery Deep Discharge,Battery Overcharge,Short Circuit(1retry),Battery Hi,PV Reverse,Over Temp,Fuse Trip,battery reverse												
LCD Display parameters (LCD Models)			PV Current, Battery voltage, Mains voltage, UPS ON/OFF, UPS Mode, Solar on/off Load percentage (0 to 150%), over load, short ckt, fault, battery low, over temp, PV reverse, Fuse trip												
Indication LEDs			Tact switch Status												
Operating Temperature range	°C	0-50													
Storage Temperature range	°C	0 +65													
Max RH	%	95													
Front panel details (MCB, Display, Selection switch etc)								Display with tact switch							
Rear panel details (MCB, Terminals etc)								O/P socket,fuse/Circuit breaker,mains & batt. Cable and fan				O/P socket,fuse/Circuit breaker,mains & batt. Cable and fan,Terminal			
Changeover time from inverter to mains in UPS mode	ms	<10													
Fuse in battery path								Yes							
Fuse in Solar Path								Yes							
Grid By pass Manually								Through switch							
Input Protection			ReSettable Circuit breaker										Circuit breaker		
RESET Switch - If Switch is press for 5Sec and release after beep sound then the all setting wil be resetted to default value.															
With Packing LxWxH In MM		365*345*185		365*345*185		365*345*185		370*345*240		370*345*340		405*350*330		405*350*330	
Net Weight		7/8.5	9.5	10	15	17	20	23							
Gross Weight		8/9.5	10.5	11	16	17.5	21	24							

Technical Specifications can be changed without prior notice.

SOLAR HYBRID SYSTEMS - ECO-SUN SERIES (LKVA-LED)

Technical Specifications

Model Name	Eco-Smart 450/900		Eco-Smart 1100	Eco-Smart 1250
System rating (Name Plate)	VA	300/700	900	1100
Operating DC voltage	V	12	12	12
Input voltage max Voc (PV)	Vdc		25	
Maximum Solar array power (PV)	Wp	300-700	900	1000
Max PV modules	Nos	2(165W)/4(165W)	5(165W)	6(165W)
Type of solar charger			PWM	
Max current rating of SCC	Adc	20/50	50	
Switching element in Inverter				MOSFET
Type of Control				PWM
Nominal Output voltage in inverter mode	Vac	220V ± 7V		
Nominal Output Frequency of Inverter	Hz	50/60 ± 1 (Default is 50Hz) selectable 50/60Hz (Optional)		
Frequency (Min - Max during Grid by pass) UPS mode	Hz	47-53/57-63		
Frequency (Min - Max during Grid by pass) Inverter mode	Hz	40-60/50-70		
Output voltage regulation	%	180-220		
Output THD (v) at linear load	%	<5%		
Creast Factor				3:01
Overload capacity 125%	Sec	6 (6 Retry)		
Overload capacity 150%	Sec	2 (6 Retry)		
Battery low voltage alarm per battery	Vdc	10.8 ± 0.2		
Battery low voltage cut per battery	Vdc	10.5 ± 0.2 (With 4 Retry)		
Batter low cut recovery per battery through Solar	Vdc	12.7 ± 0.2 (or Mains or reset switch on front panel)		
	Vdc	14.4 ± 0.2		
Max Battery charging voltage by grid per battery				
			16/12 ± 2A	
Max Battery charging current by grid in Hi/Lo option	Adc			
	Vdc	14.4 ± 0.2		
Max Battery charging voltage by Solar per battery (LCD Models)				
Battery High cut with alarm per battery (LCD Models)	Vdc	15.5±0.2		
Battery High cut Recovery per battery (LCD Models)	Vdc	14.5±0.2		
Max Battery charging current by Solar	Adc	20±2A		
Max Charging current to battery by Solar+Grid	Adc	20±2A		
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				yes



Selection of Operating Mode (LCD Models)					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 <=11.8V/11.2V per Battery.				
					SC-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 <=12.0V per Battery or Solar fails or if Solar <5A check if Solar < discharging connect grid				
Input current at no load at Nominal Battery voltage	Adc	2.2	2.6	2.4					
Noise @ 1 meter	dB	<50							
Protections	Overload, Battery Deep Discharge,Battery Overcharge,Short Circuit(1retry),Battery Hi,PV Reverse,Over Temp,Fuse Trip,battery reverse								
LED Indications	Inverter on, Battery low, Mains on, Charging, Solar on, Overload, Short CKT, PV Reserve, Overtemp.								
Indication LEDs (with switch)					Tact switch Status				
Operating Temperature range	°C	0-50							
Storage Temperature range	°C	0 +65							
Max RH	%	95							
Front panel details (MCB, Display, Selection switch etc)					Display with tact switch				
Rear panel details (MCB, Terminals etc)					O/P socket,fuse/Circuit breaker,mains & batt. Cable and fan				
Changeover time from inverter to mains in UPS mode	ms	<10							
Fuse in battery path	Yes								
Fuse in Solar Path	Yes								
Grid By pass Manually	Through switch								
Input Protection	ReSettable Circuit breaker								
RESET Switch - If Switch is press for 5Sec and release after beep sound then the all setting wil be resetted to default value.									
With Packing LxWxH In MM	365*345*185	365*345*185	365*345*185						
Net Weight	7/8.5	9.5	10						
Gross Weight	8/9.5	10.5	11						

Technical Specifications can be changed without prior notice.



Solar Hybrid Industrial Inverter (PCU) - Eco-Smart Series (HKVA)

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 battery 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
- » Triple Modes of operation (EC/SC/QC)
- » Grid bypass option available.

2.5KVA | 3 KVA | 3.5 KVA | 5 KVA | 7.5 KVA | 10 KVA

Also
Available in
SNMP & GPRS
(Simple Network
Management
Protocol)

SOLAR HYBRID INDUSTRIAL INVERTER (PCU) - ECO-SMART SERIES (HKVA)

Technical Specifications

Model Name		Eco-Smart 3000	Eco-Smart 3500	Eco-Smart 4000	Eco-Smart 6000	Eco-Smart 6000	Eco-Smart 8500	Eco-Smart 12000	Eco-Smart 12000
System rating (Name Plate)	VA	2500	3000	3500	5000	5000	7500	10000	10000
Full Load Input Current ±2A	Amp	63/46	63/48	63	104	50	75/63	77	48
Operating DC voltage	V	36/48	36/48	48		96	96/120	120	192
PV input									
Input voltage max Voc	Vdc	75/90		75/90	180		180/235		300
Maximum Solar array power	Wp	2500	3000	3500	5000	5000	7500	10000	10000
Max PV modules	Nos	10	12	14	16	20	30	30	40
Modules in series	Nos	3/2	3/2	2	2	4	4/5	5	8
Parallel strings	Nos	5	4	7	8	5	6	6	5
Max current rating of SCC	Adc	50.0	50.0	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				
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	60(or >45%load and Solar > 15A)				Continuous Run		
Cooling Fan Off at temp		°C	55 (or <40%load and Solar <10A)				Continuous Run		
Peak efficiency of inverter		%	86	82	89	88	87	88	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		Thru switch							
Selection of Operating Mode		QC-Charging current = 20A ±1A Solar + Mains till battery boost voltage with maximum Solar Sharing. Syssem will not be disconnect Grid in any case 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. SC-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 < =12.0V per Battery or Solar fails or if Solar <5A check if Solar < discharging connect grid							
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	2	2.2
Noise @ 1 meter		dB	<50						
Protections		Batt. Low, Batt. High,Overload, Short circuit,Over temp, PV reverse,MCB Trip/Fuse Trip							
LCD Display parameters		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)							
Operating Temperature range		°C	0-50						
Storage Temperature range		°C	0 +65						
Max RH		%	95						
Front panel details (MCB, Display, Selection switch etc)					Display with Rocker Switch				
Rear panel details (MCB, Terminals etc)					Fan,mcb,rotary,terminal,switch				
Enclosure protection		20							
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						
Mains connection		TERMINAL 30A				TERMINAL 60A			
Output		Terminal 30A				TERMINAL 60A			
MCB in battery path						Yes			
Fuse in battery path						NO			
MCB in Solar path						Yes			
Fuse in Solar Path						NO			
TDR (For Compressive Load)		NA				Provided			
Input Protection						Through MCB			
Cabinet		Metal Cabinet							
With Packing LxWxH In MM		470x440x610		470x440x610	470x440x610	500x495x660	600x500x740	600x500x740	600x500x740
Net Weight		38		38	40	52	52	72	92
Gross Weight		40		40	42	56	56	76	96

Technical Specifications can be changed without prior notice.



MPPT Solar Hybrid Inverter (PCU) - Eco-Supreme Series

MPPT Solar Inverters are a next generation solar inverters, High efficiency MPPT technology ensure 20 % to 30% more solar power harvesting from the same capacity solar panels as compare to other technology. Its state-of-the-art design and intelligent control optimizes the yield of all PV installations in residential, offices, rural and other remote installations with very poor or no grid availability.

It consists of MPPT based solar charge controller and bi-directional inverter with transformer on the AC side. Transformer based design makes our inverter more rugged and reliable in worst grid input conditions. It provides uninterrupted Pure Sine Wave power at the load output using Solar, Battery and grid input in customizable order of priority.

Latest DSP based control ensures excellent performance and protection from any kind of malfunction.

The high conversion efficiency helps in longer battery backup. Ease of operation and Plug 'N' Use type of design make it the ideal product for all kinds of users.

Salient Features

- Intelligent Charging Algorithm to increase Battery Life
- MPPT based State-of-the-art Latest technology for Optimum Performance
- Smart solar charging current sharing when mains is available
- DSP based automatic battery level management
- Compatible with Inverter load as well as UPS load
- Bypass switch for manual Operation
- Protection Inverter Batt. Low, Batt. High, Overload, Short circuit, Over temp, PV reverse, MCB Trip/Fuse Trip.
- Smart Solar Management (User Configurable)

Advance Battery Management for longer battery life and prevent battery from overcharging

1KVA | 2KVA | 2.5KVA | 3KVA | 3.5KVA | 5KVA | 7.5KVA | 10KVA | 15KVA | 20KVA | 30KVA | 40KVA | 50KVA | 60KVA

MPPT SOLAR HYBRID INVERTER (PCU) - ECO-SUPREME SERIES

Technical Specification

Model Name	Units	Eco-Supreme 1000	Eco-Supreme 1000/2000/2500	Eco-Supreme 2000	Eco-Supreme 3000/5000	Eco-Supreme 5000/7500	Eco-Supreme 7500/10000	Eco-Supreme 10000	Eco-Supreme 15000/20000
Rating		1KVA	1KVA/2KVA/2.5KVA	2KVA	3KVA/5KVA	5KVA/7.5KVA	7.5KVA/10KVA	10KVA	15KVA/20KVA(3P)
Operating DC Voltage	Volts	12	24	48	48	96	120	180	240
SPV Parameters									
SPV Open Circuit Voltage Range (Min-Max)	Volts	18-45	36-90	72-180	72-180	144-360	180-450	270-450	360-600
Max SPV Power	KW	1	1/2/2.5	2	3.5/5.5	5.5/8	8/12	12	15/20
Compatible SPV Panels		36 / 60 / 72 Cell							
MPPT Based Charge Controller									
Switching Element		IGBT Module							
Controller		DSP							
Efficiency		> 95%							
Battery Charging Stages		5 (Softstart, Boost, Absorbtion, Float, Equalise)							
Battery									
Low Cut Off	Volts	10.5 / Battery +/-2%							
Low Cut Off Recovery	Volts	11.5 / Battery +/-2%							
Low Buzzer	Volts	10.7 / Battery +/-2%							
High Cut Off	Volts	15.5 / Battery +/-2%							
High Cut Off Recovery	Volts	15.0 / Battery +/-2%							
Boost Charging Volt by SPV(TUB)	Volts	14.5 / Battery +/-2%							
Boost Charging Volt by Grid(TUB)	Volts	14.0 / Battery +/-2%							
Charging Current by Grid	Amps	18A +/-2%							
No Load Battery Current	%	0.02							
Output									
Output@ No load	Volts	230 +/-2%							
Output Frequency	Hz	50 +/-2%							
	Amps	3.5	3.5/7/8.5	7	10.5/17.4	17.4 / 26.0	26.0 / 34.8	34.8	52.2
Overload	Watts	800W	800W/1.6KW/2KW	1.6KW	2.4KW / 4KW	4KW / 6KW	6KW / 8KW	8KW	12KV / 15KV
Output Low Retry	-	1 Time							
Output Short Circuit	-	1 Time							
Grid									
No of Phase	-	1Phase-3Wire P,N,E							
Voltage Range(Inverter Mode)	V	100-280 +/-2%							
Voltage Range(UPS Mode)	V	175-255 +/-2%							
Frequency Range	Hz	45 - 55 +/-2%							
Display									
Display	Alphanumeric	16X2 LCD			20X4 LCD				
	Output (Inverter)	Voltage, Current, Power and Frequency							
	Input (Grid)	Voltage and Frequency							
	Solar	Voltage, Current, Power and Energy (Optional)							
	Battery	Voltage, Current							
Parameters	Status/Faults	Inverter Status, Mains Status, Charger Status, Solar Status and Battery Status/Charging Stages							
Inverter									
Switching Element	-	MOSFET				IGBT Module			
Output voltage	Volts	220				230			
Phase	-	1Phase-3Wire P,N,E							
Output Waveform	-	Digitally Filtered Pure Sine Wave							
Frequency	Hz	50 +/- 2%							
Changeover (Mains to Inverter)	ms	<10ms							
Output Power Factor	Pf	0.8							
Overload Retry	-	3 Times / 5 Times							
Switches	-	System ON/OFF, Mode Selection: Hybrid / PCU / Smart, INV /UPS Selection							
Indication (LED)	-	Inverter On, Mains In Range, Battery Low/High, Charger On, Overload, Faults							
Alarm (Audible)	-	Battery Low, Overload, Charger On, Inverter On, Solar Charger On							
Protection	-	Overload, Short Circuit Protection, Over Voltage, SPV Surge and Transient protection (MOV Varistors), Reverse Polarity of Battery, Over temperature Protection, Under Voltage and Over Voltage Protection							
Cooling	-	Forced Air cooling(Temp Controlled)							
Communication	-								
Operating Temp	C	0-50							
Operating Humidity	%	95							
Protection class	-	IP20							
Dimension(LXWXH)	mm	355x330x205	355x330x205	510x460x305	510x460x305	750x500x350	750x500x350	750x500x350	750x500x350
Weight	kg	18	18/21/35	31.5	40 / 52	52	63	71	85/95

Technical Specifications can be changed without prior notice.





Solar Panels

Lento solar panels are manufactured under conditions with rigorous tests to ensure performance and rated performance over rated life. We use high efficiency polycrystalline silicon cells and the latest in bonding techniques to interconnect cells followed by vacuum sealing and affixing to frames resulting in compact construction, space savings with corresponding higher output of power. The result is a panel that withstands climatic conditions and performs efficiently over its rated life of 25 years with only a drop of 5 to 10%

Salient Features

- Tempered white glass plate, extruded aluminium frame for industry standard fitment, vacuum sealing using UV resistant encapsulating resin and EVA sandwich to conform to MNRE and international specifications
- IEC 61215, ISO 9001 and ISO 14001:2004 complied
- Polycrystalline cells
- More Energy Efficient UV Resistant thermo setting plastic
- Encapsulate ethylene vinyl acetate, cushions the solar cells within the laminate and protects the cell due to harsh weather conditions.
- The high strength polymer sheet protects the rear surface from ingress of moisture and mechanical damage.

Technical Specification of Lento Solar Module

Module Type	12X100	12X165	12X175	24X265	24X330	24X335	24X340
Peak Power Watts-Pmax (Wp)*	100	165	175	265	330	335	340
Open Circuit Voltage Voc (V)*	22.29	23.15	23.35	45.57	46.05	46.08	46.25
Short Circuit Current Isc (A)*	6.01	9.19	9.35	7.69	9.32	9.45	9.52
Maximum Power Voltage Vmp (V)*	17.85	18.95	19.39	37.38	37.61	37.87	38.50
Maximum Power Current Imp (A)*	5.65	8.72	8.88	7.09	8.79	8.85	8.95
Maximum System Voltage	1000V	1000V	1000V	1000V	1000V	1000V	1000V
Solar Cells Per Module(Units)	36	36	36	60 & 72	72	72	72
Weight (Kg)	9	12.5	12.6	20	22	22.5	22.5

Note : All Specifications Are Subject To Change Without Prior Notice



SMU

Solar Charge Controller / Solar Management Unit (SMU)

Solar Charge Controller

MOSFET based solar charger incorporates circuitry that senses battery voltage. If voltage falls below a certain value the MOSFET switches on through the PWM controller that delivers pulsed power. As battery begins to charge up the power to it progressively reduces and when the battery is fully charged the circuit switches off delivery of power to the battery keeping it in full stand by condition. This circuitry also prevents over charge of battery that can lead to loss of electrolyte. It work unattended and is simply to operate as well as maintain, with the least part count

Salient Features

- Designed for fool-proof installation even by mechanics with minimum training
- Protection from reverse current flow battery to solar array during night
- Self diagnostics and inbuilt protection features to prevent damages by incorrect terminations, system shorts or connections
- MOSFET based series PWM/MPPT charging technology for improved battery life and maximum performance
- Automatic detection of system voltage
- Use of MOSFETs avoids the use of mechanical relays that are prone to failures
- Can be adapted to charge gel, tubular or flooded battery types
- Inbuilt temperature detection and compensation for the battery to maintain battery life
- Over charging protection, overheating protection, over discharge protection and overload protection
- Reverse polarity protection

Product Range

Available from 10 Amps continuous charging current to 50 Amps to suit different SPV array and battery configurations from 12 to 192 VDC

Solar Management Unit (SMU)

Solar Management Unit (SMU) converts any existing inverter into solar system. It has in-built intelligence to maximize use of solar energy and is ideal for various DC voltages.

Product Range : 12/24V 50Amp

Features :

- Dual input Solar + mains
- Auto Selection of Battery Voltage (12V/24V).
- Smart Load Sharing compatibility
- LCD Display
- Over load protection by Current Transformer
- Battery mode selection option (Tubular/SMF/Flat)
- Smart Mode - EC/SC/QC
- Protections: Battery Deep discharge, Battery Overcharge, Battery, Hi, Over Temp, Battery reverse.

Sealed Maintenance Free Batteries - SMF/VRLA

Lento SMF batteries differ from traditional gel base SMF batteries in that the same charging system without modification of current or voltage can be used as one uses for charging flooded batteries. At the heart of Lento SMF technology is the use of special grade fine fibre high density glass mats with a high degree of porosity. In addition, these batteries have a longer than usual service life, consistent current and voltage delivery, deep discharge capability and the ability to supply high rush of starting current in case of inductive loads. Charging is easy, using traditional flooded acid battery charger thus saving on cost of recalibration or purchase of specialized charger for the SMF battery.

Salient Features

- Specially mixed corrosion resistant alloy for spines & grids.
- Tubular gauntlets of high brushing strength with high performance for positive plates.
- Low maintenance battery
- Specially designed vent plugs to trap electrolyte loss
- Good recovery from deep discharging.
- Long shelf life when left unattended for extended periods
- Long life cycle



PRODUCT SPECIFICATIONS

Model Name	Nominal Voltage	Rated Capacity @ C20 at 27°C (10.50 EBV)	Dimensions (mm)			Weight (Kgs ± 5%)
			Length (± 5mm)	Width (± 5mm)	Height (± 5mm)	
LSB 42-12	12	42	198	167	175	13.5
LSB 65-12	12	65	350	167	190	22
LSB 80-12	12	80	307	169	240	23
LSB 100-12	12	100	330	173	222	29
LSB 120-12	12	120	406	171	240	35
LSB 150-12	12	150	485	170	240	45
LSB 200-12	12	200	522	240	220	62
Electrolyte			Immobilized H ₂ SO ₄			
Positive Plate Alloy			"Arsenic and Cadmium Free Pb-Ca-Sn Alloy"			
Positive Plate Type			Flat Pasted			
Type of Connection			Bolted			
Type of Separator Material			Absorptive Glass Mat			
Container Material			"ABS"			
Recommended Charging Method			Constant Potential			
Shelf life at 27° C			6 Months			
Self Discharge			<1% per week			
Float Charge Voltage			13.5V - 13.62V			
Boost Charge Voltage			13.8V - 14.1V			
Charging Time from 20% SOC TO 90% SOC			6-8 Hrs			
Operating Temperature Range			"0° C to 50° C"			
Design Life at 27° C			10 Years			
Cyclic Service Life (@27° C)						
At 20% D.O.D			2100 Cycles			
At 50% D.O.D			850 Cycles			
At 80% D.O.D			400 Cycles			
Product Performance Conforms to			JIS C 8702			

* Technical Parameters are Subject to Change due to Continuous improvements and R&D



Lead Acid Tubular Batteries

Lento uses premium technology and high grade materials in these Lead Acid Tubular Batteries to deliver maximum power for extended durations and have an appreciably longer life span. These batteries are specifically suitable for powering up UPS and inverters.

Lento Lead Acid Batteries are environment-friendly, highly reliable in performance and are low in cost. Here again our extensive research and development wing has helped us create batteries customized to suit Indian operating conditions. These flooded batteries are perfect for use with power inverters as well as for telecom equipments.

Salient Features

- Specially mixed corrosion resistant alloy for spines & grids.
- Tubular gauntlets of high brushing strength with high performance for positive plates.
- Low maintenance battery
- Specially designed vent plugs to trap electrolyte loss
- Good recovery from deep discharging.
- Long shelf life when left unattended for extended periods
- Long life cycle



LEAD ACID SOLAR TUBULAR BATTERIES

(Export Series)

Technical Specification

Models	Capacity at 27 deg C	Dimension (±3MM)			Weight (Kg ±5%)		CHG AMP.	Trickle Charge Current in (mA)	
		Length	Width	Height	Dry	Filled		Min.	Max.
LSTB 8000	75 AH	504	218	254	18.3	32.5	7.5	65	260
LSTB 12000	100 AH	504	218	254	19.3	34	10	85	350
LSTB 14000	120 AH	500	187	416	28	54	12	105	420
LSTB 16500	150 AH	500	187	416	31	57	15	130	520
LSTB 20000	180 AH	500	187	416	35.5	59	18	155	625
LSTB 22000	200 AH	500	187	416	38.5	62	20	175	695
LSTB 24000	220 AH	500	187	416	41.5	65	22	190	765

* The height mentioned is upto terminal top

LEAD ACID SOLAR TUBULAR BATTERIES - SPGS APPLICATION

Models	Capacity at 27 deg C	Dimension (±3MM)			Weight (Kg ±5%)		CHG AMP.	Trickle Charge Current in (mA)	
		Length	Width	Height	Dry	Filled		Min.	Max.
LSB-170 60-12V	170 AH	500	187	416	32	58	17	130	520
LSB-190 72-12V	190 AH	500	187	416	35.5	61	19	155	625
LSB-210 72-12V	210 AH	500	187	416	38.5	64	21	175	695
LSB-230 72-12V	230 AH	500	187	416	41.5	67	23	190	765
LSJB 150 42-12V	150 AH	505	220	290	27	47	15	105	435
LSJB 170 60-12V	170 AH	518	258	274	30	56	17	130	520
LSJB 190 60-12V	190 AH	518	258	274	33	59	19	155	625
LSJB 210 60-12V	210 AH	518	258	274	36	61	21	175	695

* The height mentioned is upto terminal top



LEAD ACID TUBULAR BATTERIES - INVERTER APPLICATION


Models	Capacity at 27 deg C	Dimension (±3MM)			Weight (Kg ±5%)		CHG AMP.	Trickle Charge Current in (mA)	
		Length	Width	Height	Dry	Filled		Min.	Max.
LIB-170 60-12V	170 AH	500	187	416	30	56	17	130	520
LIB-190 72-12V	190 AH	500	187	416	33	58	19	155	625
LIB-210 72-12V	210 AH	500	187	416	36	61	21	175	695
LIJB 170 60-12V	170 AH	518	258	274	28	54	17	130	520
LIJB 190 60-12V	190 AH	518	258	274	31	56	19	155	625
LIJB 210 60-12V	210 AH	518	258	274	34	58	21	175	695

* The height mentioned is upto terminal top







Condition Of Fully Charged

- A) 3 consecutive hourly reading of specific gravity and voltage become constant
 - B) Top of charge voltage will be around 16.2V - 16.5V
 - C) All Cells should be gas freely
 - D) Minimum Ah has been given
5. Specific Gravity at fully Charged condition 1.240 +- 0.005 at 27 Deg C

PRODUCT FEATURES

-  Long shelf life when left unattended for extended periods
-  Pasted Negative Plates
-  Tubular Positive Plates
-  Acid Resistant Polyester Gauntlets
-  High Porosity Envelope Separators
-  Micro porous Ceramic Vent Plug

PRODUCT BENEFITS

-  Long design life
-  Very low maintenance
-  Can handle extreme weather conditions
-  Rugged Performance
-  Longer life without charging
-  More efficient and saves money



LED Street Lighting Solution

Concerns over global climatic change, local air pollution and resource scarcity make photovoltaic (PV) an increasingly attractive energy supply technology, the sun being an inexhaustive, reliable, non-polluting source of power. Using solar energy with LEDs instead of CFL provides a very efficient solution. Solar powered outdoor lighting products are ideal for lighting the area in remote locations where the electricity is unavailable or erratic. Even in urban areas, solar LED street lights find great usage to reduce dependency on conventional power and contribute towards green energy. Reliable and long life makes this solution effective in fulfilling our present and future lighting requirements.

Salient Features

- No line voltage, trenching, or metering
- No power outages
- Independent power and light source- no two systems are connected, hence no single point of failure.
- Easy to install
- No maintenance except for the battery
- Better and long life light source - LED lights feature white light without flickering and instant on.
- Safe 12/24 volt circuit, no risk of electric shock.
- Self-contained solution light on/off controlled by automatic daylight sensing.
- Battery backup for cloudy or rainy days
- Automatic dawn dusk operation (with timer-optional)
- No running cost



SOLAR LED STREET LIGHTING SOLUTION

Technical Specifications

Luminary Rating	7W	9W	12W	18W	20W	30W	40W	50W	60W
LED Type	Chip led 1.2W 3030 OSRAM								
No. Of LED	12	15	21	27	30	48	60	75	90
Wattage ±5%	7W	9W	12W	18W	20W	30W	40W	50W	60W
Type	W-LED								
Luminous efficacy	> 100 Lumen /Watt								
Color temperature range	5500°K-6500°K								
Life time	50,000 hrs								
Colour rendering index	> 80								
Viewing Angle	120°								
Charge controller type	Microcontroller based MOSFET drive PWM								
Charge controller rating ±0.5A	6A			10A		15A			
Charging efficiency	> 90%								
Auto dusk to down	Provided								
Auto dimming	5.30 ~ 6 Hour								
Lighting quality	Uniform illumination , free fom glare and flickering								
Working temperature	−20°C to 55°C								
Humidity	35 to 85% RH								
Temperature Compensation	Provided								
Load regulation	< 2%								
Material	ADC12 Alluminum alloy PDC housing								
Diffuser	Poly carbonate (PC) /Glass								
Gasket	Silicone gasket								
IP rating	IP65								
Low Voltage cut off ±0.2V	11.1V								
Load reconnect ±0.2V	12.5V								
Protection	Reverse current flow through the PV module Provided,Open Circuit Protection,Short circuit protection for LED drive,Battery Reverse polarity protection, SPV Module Reverse polarity protection,Battery charging current limit, Surge protection								
Green LED	Blink in charging & contnuuous on when charged								
Red LED	Blink when batt. Low								
Fault	Green and RED led Continuous ON								
Light output in Lux 4 mtr.	Min 16 Lux measured at the periphery of 4 meater diameter from a height of 4 meter Min 8 lux				Street lamp should have illumination not less than 0.5 Lux/Watt perpendiculars from the height of 9 m.				
Panel Power (Pmax)	40Wp	60Wp	75Wp	100Wp	100Wp	120Wp	150Wp (75Wp*2)	200Wp (100Wp*2)	200Wp (100Wp*2)
Panel Voc Max	25V DC								
Battery Type	Flooded/VRLA/LiFePO4								
Max. Battery Capacity	30Ah C/10	40Ah C/10	50Ah C/10	75Ah C/10	75Ah C/10	100Ah C/10	120Ah C/10	150Ah C/10	150Ah C/10
Pole Detail	GI 5 Meter		GI 5 -7 Meter (Optional)				GI 5 -9 Meter (Optional)		

Technical Specifications can be changed without prior notice.

AC LED Street Light Specification

TESTING PARAMETERS	20W	25W	30W	35W	40W	45W	60W	70W	100W	120W	150W
LED Type	General Characteristics										
LED Type	Chip led 1.2W 3030 OSRAM										
No. Of LED	35	42	49	56	63	72	91	112	150	180	210
Driver Efficiency @220V	>85%										
Rated Voltage	220V AC,50Hz										
Voltage Range $\pm 10V$	100-300V AC	100-300V AC	140-300V AC	140-300V AC	140-300V AC	140-300V AC	100-300V AC	100-300V AC	100-300V AC	100-300V AC	100-300V AC
Output Constant Current $\pm 20mA$	700mA	700mA	700mA	700mA	900mA	900mA	700mA	700mA	700mA	700mA	700mA
PF	>0.9										
Input Current $\pm 20mA$	100mA	120mA	150mA	160mA	185mA	205mA	272mA	320mA	430mA	520mA	520mA
Color temperature	5500-6500°K										
CRI	>70										
Lumen Efficiency (lm/w)	100										
Protection	Open circuit protection,Short Circuit protection										
Surge Protection	4.0KV										
H.V Voltage	>2.0KV										
Protection gard	IP65,Aluminium casting body										

Technical Specifications can be changed without prior notice.



DSP Sine Wave Home UPS & Inverter - Eco-Star Series (LCD)

Our products are the outcome of passion of a few young and enthusiastic technocrats. Since its inception the company has conquered new horizons and set new standards for the industry. Cutting-edge technology international class of manufacturing facilities and total focus on quality & testing ensure that all our Inverters & UPS, give sustained trouble free performance for a long time.

Lento pioneered Pure Sine Wave technology in its Inverters, UPS and power supplies. Our Sine Wave inverters gives stable frequency and voltage, mimicking mains power supply, making it perfectly suitable power to expensive equipments, especially inductive loads which not work well on square waves.

Lento DSP Sine wave Home UPS & Inverter delivers quality output with reliable performance at a reasonable price. Lento DSP based Sine wave inverters & UPS are specialized in providing clean and stable power supply to all connected appliance and equipments.

- DSP Based Design with absolute and stable Sine Wave output voltage and frequency
- State of the art MOSFET based PWM technology with greater efficiency at lower cost with Dynamic Stability
- Over Temperature Protection
- More back-up being a Sine Wave UPS (ASIC Control)
- Three stage solar charging (TSSC) suitable for all types of battery charging..
- Deep Discharge Battery charging from A.C. Mains.
- User friendly, feather touch control and selection switches with LED indication on front panel.
- Protection such as Mains Fuse Trip, Overload, Short Circuit, Battery low, Over Temperature indication with buzzer as well as display on LCD available.
- AC Mains available, battery charging /charged and its voltage indication provided on LCD display.
- Battery type charging selection (Tubular /Flat /SMF/GEL)
- Grid charging enable /disable options which makes it fully compatible with solar.
- Selectable battery charging current (High /Low).
- Resettable AC circuit breaker which reduce service calls.
- Selectable mode for UPS/Inverter.
- External DC fuse for reverse battery protection.
- Bypass switch in case of any fault
- Comprehensive LCD Display
- Resettable A.C. fuse

Applications

- ▶ Power Back-up for House hold, Small shops, Small offices etc.
- ▶ Small Water pumps and all motor based small applications
- ▶ TV Sets, Fans, Tube Lights, computers etc.

300VA | 700VA | 900VA | 1100VA | 1600VA | 2100VA | 2500VA

DSP SINE WAVE HOME UPS & INVERTER ECO-STAR SERIES (LKVA-LCD)

Technical Specifications

Model Name	Unit	Eco-Star 450/900	Eco-Star 1100	Eco-Star 1250	Eco-Star 1600	Eco-Star 2000	Eco-Star 2500	Eco-Star 3000
System rating (Name Plate)	kVA	300/700	900	1100	1450	1600	2100	2500
Operating DC voltage	V	12	12	12	24	24	24	24
Switching element in Inverter		MOSFET						
Type of Control		PWM						
Nominal Output voltage in inverter mode	Vac	220V \pm 7V						
Output supply phases		Single						
Nominal Output Frequency of Inverter	Hz	50Hz						
Frequency (Min - Max during Grid by pass) UPS mode	Hz	47-53						
Frequency (Min - Max during Grid by pass) Inverter mode	Hz	40-60						
Output voltage regulation	%	180-220						
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	60 (or 45% of rated Load)						
Cooling Fan Off at temp	°C	55 (or 40% of rated Load)						
Battery low voltage alarm per battery	Vdc	10.8 \pm 0.2						
Battery low voltage cut per battery	Vdc	10.5 \pm 0.1 (With 4 Retry)						
Max Battery charging voltage by grid per battery		14.4 \pm 0.2						
		Settable for Tub-14.4V/28.8V, GEL-14.2V/28.4V, SMF-14.2V/28.4V, Flat-14.2V/28.4V Settable for Tub-13.8V/27.6V, GEL-13.8V/27.6V, SMF-13.8V/27.6V, Flat-13.6V/27.2V						
Max Battery charging current by grid in Hi/Lo option	Adc	16/12 \pm 2A Settable for Tub-12/16A, GEL-10/16A, SMF-10/14A, Flat-14/10						
Battery High cut with Alarm per battery	Vdc	14.8 \pm 0.2						
Battery High cut Recovery per battery	Vdc	14.3 \pm 0.2						
Grid low cut voltage (IT load/Normal load)	Vac	180/100 \pm 10						
Grid low cut voltage recovery (IT load/Normal load)	Vac	190/110 \pm 10						
Grid high cut voltage (IT load/Normal load)	Vac	265/280 \pm 10						
Grid high cut voltage recovery (IT load/Normal load)	Vac	255/270 \pm 10						
Grid charging Enable/Disable		yes						
Selection of UPS Load/Normal Load		yes						
Output Voltage at No load at rated Battery voltage	Vac	220						
Noise @ 1 meter	dB	<50						
Protections		Overload, Battery Deep discharge, Battery Overcharge, Short circuit(1retry),Battery Hi,Over Temp,Fuse Trip, battery reverse						
LCD Display parameters		Battery voltage, Mains voltage, UPS ON/OFF, UPS Mode, Load percentage (0 to 110%), over load, short ckt, fault, battery low, over temp,Fuse trip, (Customized LCD)						
Indication LEDs		Tact switch Status						
Operating Temperature range	°C	0-50						
Storage Temperature range	°C	0 +65						
Max RH	%	95						
Front panel details (MCB, Display, Selection switch etc)		Display with tact switch						
Rear panel details (MCB, Terminals etc)		O/P socket, fuse/Circuit breaker, mains & batt. Cable and fan, Terminal						
Enclosure protection		20						
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	<40						
Fuse in battery path		Internal Fuse						
Fuse in Solar Path		Yes						
Grid By pass Manually		Through switch						
Input Protection		Resettable Circuit breaker						
With Packing LxWxH In MM		365*345*185	365*345*185	365*345*185	370*345*240	370*345*340	405*350*330	405*350*330
Net Weight		7/8.5	9.5	10	15	17	20	23
Gross Weight		8/9.5	10.5	11	16	17.5	21	24

DSP SINE WAVE HOME UPS & INVERTER ECO SERIES (LKVA-LED)

Technical Specifications

Model Name	Unit	Eco 450	Eco 900	Eco 1100	Eco 1250
System rating (Name Plate)	KVA	300	700	900	1100
Operating DC voltage	V	12	12	12	12
Switching element in Inverter			MOSFET		
Type of Control			PWM		
Nominal Output voltage in inverter mode	Vac		220V ± 7V		
Output supply phases			Single		
Nominal Output Frequency of Inverter	Hz		50Hz		
Frequency (Min - Max during Grid by pass) UPS mode	Hz		47-53		
Frequency (Min - Max during Grid by pass) Inverter mode	Hz		40-60		
Output voltage regulation	%		180-220		
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		60 (or 45% of rated Load)		
Cooling Fan Off at temp	°C		55 (or 40% of rated Load)		
Battery low voltage alarm per battery	Vdc		10.8 ± 0.2		
Battery low voltage cut per battery	Vdc		10.5 ± 0.1 (With 4 Retry)		
	Vdc		14.4 ± 0.2		
Max Battery charging voltage by grid per battery					
Max Battery charging current by grid in Hi/Lo option	Adc		16/12 ± 2A		
Battery High cut with Alarm per battery	Vdc		14.8±0.2		
Battery High cut Recovery per battery	Vdc		14.3±0.2		
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			yes		
Output Voltage at No load at rated Battery voltage	Vac		220		
Noise @ 1 meter	dB		<50		
Protections			Overload, Battery Deep discharge, Battery Overcharge, Short circuit(1retry),Battery Hi,Over Temp,Fuse Trip, battery reverse		
LED Indications			Inverter on, Battery low, Main on Charging, Overload, Short CKT PV Reserve, Overtemp.		
Indication LEDs			Tact switch Status		
Operating Temperature range	°C		0-50		
Storage Temperature range	°C		0 +65		
Max RH	%		95		
Front panel details (MCB, Display, Selection switch etc)			Display with tact switch		
Rear panel details (MCB, Terminals etc)			O/P socket, fuse/Circuit breaker, mains & batt. Cable and fan, Terminal		
Enclosure protection			20		
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		<40		
Fuse in battery path			Internal Fuse		
Fuse in Solar Path			Yes		
Grid By pass Manually			Through switch		
Input Protection			Resettable Circuit breaker		
With Packing LxWxH In MM		365*345*185	365*345*185	365*345*185	365*345*185
Net Weight		7	8.5	9.5	10
Gross Weight		8	9.5	10.5	11



DPS Sine Wave Static UPS & INVERTERS - Eco Star Series (HKVA)

Most appliances like LED Bulb, Fans, motor based equipments like air conditioners and pump sets are designed to work at Sine Wave 50Hz frequency. Running such equipments on unregulated quasi sine wave-square wave based inverters poses a risk in regards with performance and durability. Lento DSP sine wave Static UPS and inverters are designed to provide stable 50Hz sine wave irrespective of load and battery voltage, making them the most suitable for inductive, capacitive and non-resistive loads. Importantly, our inverters and UPS are designed to deliver instantaneous high current during start up, especially in case of air conditioners and refrigerators, with safety cut out when battery voltage goes lower than a specified point to avoid brownouts and burning of motors.



2.5 KVA

3 KVA

3.5 KVA

5 KVA

7.5 KVA

10 KVA

12 KVA



Salient Features

- DSP Based Design with absolute and stable Sine Wave output voltage and frequency
- State of the art MOSFET based PWM technology with greater efficiency at lower cost with Dynamic Stability
- Over Temperature Protection
- Three stage solar charging (TSSC) suitable for all types of battery charging..
- Deep Discharge Battery charging from A.C. Mains.
- Monitoring/data logging feature for batter system information at user end through SNMP / GPRS (optional)
- Protection such as Mains MCB Trip, overload, short circuit, Battery low, over temperature indication with buzzer as well as display on LCD available.
- AC Mains available, battery charging /charged and its voltage indication provided on LCD display.
- Grid charging enable /disable options which makes it fully compatible with solar (Optional).
- Selectable battery charging current (High/Low).
- Fast change over in UPS mode makes computer compatible .
- Comprehensive LCD Display

Why Lento Static Ups Is Better Than Other Inverters ?

The OFF Line UPS above 1.5KVA are highly unreliable and not available with any brand.

The ON Line UPS always wastes 10-15% electricity. i.e. power Loss. About 40% Loss due to poor power Factor is additional to the above.

For the applications where the fully regulated voltage and frequency is not required, the Static UPS is the best solution. It provides the reliability of an ON Line UPS and with negligible power loss when Input Mains AC is present.

Applications

Major power Back up source in corporate offices as well as Call Centers

Computer & peripherals /office Equipment like, Scanners, Printers, Fax Machine etc.

Emergency & Mobile Power Systems

A.C and all Compressor based Applications

Petrol/Diesel Dispensing (Filling) Machines

Tread Mills & other Health Equipment in Homes/Gyms

Water Pumps and similar Motor Based Applications

All types of clinical equipments

Also
Available in
SNMP & GPRS
(Simple Network
Management
Protocol)

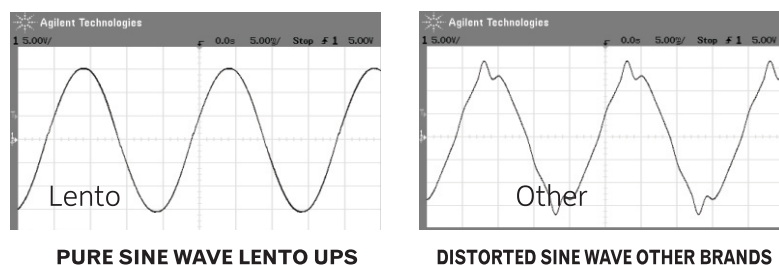


Applications

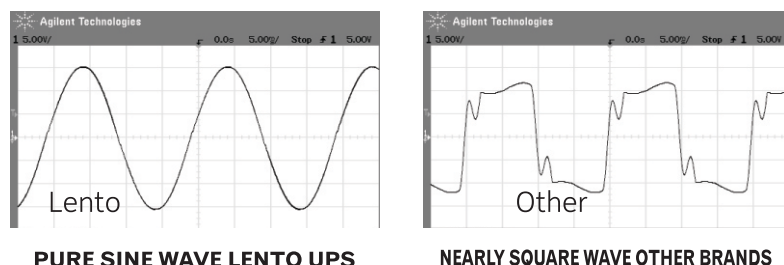
- Power Back-up for House hold as well as the computer, Small shops, Small offices etc.
- Small water pumps and all motor based small applications
- TV Sets, Fans, Tube Lights, computers etc.

Why Lento UPS is better than other Home UPS / Inverter?

A.) Output Waveform Of Inverter With Load Of 15 Tubelights



B) Output Waveform Of Inverter Withload Of 35 Cfls Or Energy Saving Lamps



Lento DSP Based Home UPS/Inverter provides Pure Sine Wave output, whereas output of Home UPS of other brands gets badly distorted especially on normal loads like Compact Fluorescent Lamp, Tube Lights, Motors, Coolers & Computers etc.. this type of Distorted Waveform is very Harmful for all your Sophisticated Electronic Appliances.

Hence, Lento DSP based Home UPS is the preferred choice. It delivers Pure power, with Reliable Performance and at a Reasonable Price.



DPS SINE WAVE STATIC UPS & INVERTERS - ECO STAR SERIES (HKVA)

Technical Specifications

Model Name	Eco-Star 3000	Eco-Star 3500	Eco-Star 4000	Eco-Star 6000	Eco-Star 6000	Eco-Star 8500	Eco-Star 12000	Eco-Star 15000
INVERTER MODEL	2.5/36V & 48V	3KVA/36V & 48V	3.5KVA 48V	5KVA 48V	5KVA 96V	7.5KVA/96 & 120V	10KVA/120 & 180V	12KVA/192V
No. Load battery Current	≤ 2.2A							
Max. O/P No. Load Voltage	220V ± 5V				230V ± 5V			
Max. Full Load Voltage	220V ± 7%				230V ± 10%			
Max. Load Battery Current Max.	<63 & 46Amp.	<63 & 54Amp.	<63Amp.	<106Amp.	<49Amp.	<71 & 65Amp.	<76 & 53Amp.	<62Amp.
Full Load O/P Current	8.5±0.7Amp.	9.5±0.7Amp.	10.5±0.7Amp.	17±0.5Amp.	17±0.5Amp.	27±0.5Amp.	34±0.5Amp.	38±0.5Amp.
Overload Retry	6 Times							
Output Frequency (Inverter Mode)	50.0±1.0Hz							
Batt Low Voltage Alarm	10.5V±0.2V/Batt.							
Batt Low Voltage Cut	10.0V±0.2V/Batt.							
MAINS MODE								
Mains Low Cut	115V±10V							
Recovery	100V±10V		125V±10V			125V±10V		
Mains High Cut	110V±10V			280V±10V	135V±10V			
Recovery	275V±10V							
Change Over time (Mains to Inverter)	<50 ms.							
Change Over time (Inverter to Mains)	<10 ms.							
Battery Low Retry	4 Times							
Short Circuit, Retry	OK, 1 Time							
Permanent Short Circuit Protection	Yes							
UPS MODE								
Mains Low Cut	180V±5V							
Recovery	190V±5V							
Mains High Cut	260V±5V							
Recovery	255V±5V							
Change Over time (Mains to UPS)	<=10 ms.							
Change Over time (Inverter to UPS)	<10 ms.							
MAINS MODE								
Max. Charging Current	20V±2Amp.			25V±1Amp.	20±2Amp.			
Boost Charging Voltage	14.2V / Batt.							
WEIGHT AND DIMENSTIONS								
With Packaging LxWxH in mm	490x420x560	490x420x560	490x420x560	520x480x670	500x495x660	600x500x740	600x500x740	600x500x740
With Out Packaging LxWxH in mm	310x290x450	310x290x450	310x290x450	350x300x540	350x300x540	550x350x660	550x350x660	550x350x660
Net Weight	29	32	32	54	54	78	89	104
Gross Weight	36	39	39	58	58	89	100	115



DSP Sine Wave Online UPS

Lento DSP sine wave online ups feature a wealth of advanced features. Designed for use with expensive critical electronic instrumentation, these UPS systems have a host of safety controls to ensure your devices are always protected. Lento DSP online UPS performs very well in case of mains failure, sensing of voltage fluctuations and automatic switchover, lightning guard, electrostatic protection, overvoltage and overload protection, short circuit protection and low battery protection. Lento DSP UPS are configured to be always active when power fails. At the same time the batteries are kept constantly charged through a monitoring circuit to ensure their longevity. DSP sine wave online UPS are preferred especially when they are Lento with guaranteed frequency and voltage control along with inbuilt protection features.

Lento low frequency series online UPS meets critical industry standards with its state of art digital intelligent online UPS technologies with the best power factor rating and consistently reliable performance day in and day out.

We are recognized as the foremost manufacturer, exporter and supplier of an exclusive quality array of DSP based UPS Series. Specially designed for small data centres and critical load appliances, this range is manufactured using optimum quality factor inputs. Moreover, it is made by experts that rigorously inspect this range on various parameters of quality. Available in various technical specifications this product can also be customized in accordance with performances laid by our patrons.

Applications

- Major Power back up source in corporate offices as well as call centers.
- Banks & ATMs.
- Life saving medical equipments and diagnostic labs.
- Photography and colour labs.
- Emergency Devices (Lights/Alarms)
- Fire Devices.
- Telecommunication Devices.
- Industrial Applications.
- Vital real time & process control equipment in industries.
- Aviation and broadcasting.

Also
Available in
SNMP & GPRS
(Simple Network
Management
Protocol)

**Above then 60 KVA online UPS
are available with power factor control
along with advance technology are
available on specific requiremens.**

1 KVA
2KVA
3KVA
5KVA
7.5 KVA
10KVA
15KVA
20KVA
25KVA
30KVA
35 KVA
40 KVA
50 KVA
60 KVA

Salient Features

- DSP Based double conversion topology with enhanced control over the voltage and frequency.
- In-Built requisite safety & protections like short circuit, over temp, battery Low/ High. Etc. With comprehensive display.
- Wide Input Voltage and frequency range.
- Pure Sine wave output.
- Generator Compatibility.
- (Remote) Monitoring and Auto- Shutdown software.
- Extremely Low Total harmonics distortion (<3%)
- Web, SNMP & GSM based monitoring (optional)
- Cold Start.
- LCD Display
- Ability to handle 100% phase imbalance on output while maintaining perfect balance on the input phases.

DSP SINE WAVE ONLINE UPS

Technical Specifications

	SinglePhase					3PhaseIn-1PhaseOut					3PhaseIn-3PhaseOut					
Model Name	1KVA HF	2KVA HF	3KVA HF	5KVA	7.5KVA	10KVA	7.5KVA	10KVA	15KVA	20KVA	7.5KVA	10KVA	15KVA 30KVA	40KVA 60KVA		
Output Wave From	Pure Sine wave															
nominal Battery Voltage	36V DC	96V DC	180V DC	192V DC	360V DC											
Output Power Factor	0.8															
No Load battery Current	1.1A±0.2A															
Total harmonic Distortion	< 3%															
No Load O/P Voltage (L-N)	230±1%					230 AC±1%										
No Load O/P Voltage (L-L)	N/A		N/A			N/A					415±1%					
O/P Frequency	50 Hz±0.5Hz															
Full Load O/P Voltage (N-L)	230V AC±1%				230V AC ± 1%										230±1%	
Full Load O/P Voltage (L-L)	N/A			N/A											415±1%	
low Battery Cut Off	10.4V±0.2V DC Per Battery (12V DC Battery)															
Low battery indication	10.6±0.2V DC Per Battery (12V DC Battery)															

MAINS MODE

Input Voltage Range (N-L)	140V-280V±5V AC	170V to 270V±5V AC
Input Voltage Range (L-L)	N/A	
Input Frequency Range	40Hz to 60HZ	
input Power factor Lagging	0.9	N/A
Charging Current	5A to 10±A	1.5A to 8A±1A
Boost Charging Voltage	13.9V±0.2V DC Per Battery (12V DC Battery)	

PROTECTION

Protection	Output Not Ok, battery Voltage Low, Over Load Battery Over Charge, Over Temperature, Short Circuit, Mains MCB Tripped
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DISPLAY

Displays	Welcome Massage, Capacity, output Voltage, Output frequency. Load Percentage Input Voltage & Frequency, Battery Charging, Battery Voltage, All Protections
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ENVIRONMENTAL PARAMETERS

Operating Temperature	0 Deg- 45 Deg
Acoustic Noise at 1 Mtr	< 45 dB
Relative Humidity	Max. 95% non - Condensing
Thermal Management	Integrated Cooling (Fan & Heat Sink)

WEIGHT AND DIMENSIONS

With Packaging LXWXH in mm	400x420x135			600x500x730			700x500x950			860x630x950		700x500x780		860x630x950		1020x860x1450	
Without Packaging LXWXH in mm	350x320x90			400x350x600			550x350x670			700x460x830		550x350x670		700x460x830		810x580x1310	
Net Weight	6.5Kg	8.5Kg	8.5Kg	70Kg	92Kg	107Kg	95Kg	110Kg	150Kg	180Kg	105kg	121Kg			
Gross Weight	7.1Kg	9.1Kg	9.1Kg	79Kg	104Kg	119Kg	107Kg	122Kg	167Kg	195Kg	120Kg	141Kg			

** Both External & Internal Battery Models are Available

Technical Specifications can be changed without prior notice.



DSP Sine Wave Three Phase Inverters (ALBS) Series

Lento DSP sine Wave Automotive Lift Backup System (ALBS) is specifically designed to address the requirements of running lift motors with high torque. These ALBS output 3 phase supply that is similar to the 4 wire mains 3 phase supply and can be effortlessly switched in with a simple electronics changeover in case of power failure to power lifts and elevators. The same ALBS can be used as a power source for staircase, parking, compound and common lighting as well as a power source for security systems. Lento ALBS feature DSP based three phase sine wave output inverter module, battery charger, electronic change over and extra heavy duty components to handle high starting torque currents drawn by lift motors, pump sets and air conditioners.

Applications

- For Providing reliable power back-up for Life/Elevators
- As a major power supply source for water Pumps, Fire pumps & other 3phase critical motorized equipment
- Petro/Diesel Dispensing (Filling) Machines
- Tread mills & other Health Equipment in Home/Gyms
- Major Power back Up source in corporate Offices as well as Call Centres
- Computers & peripherals/ Office Equipment like Scanners, Printers, and Fax Machines etc.
- Emergency & Mobile Power Systems
- Air Conditioners and all compressor Based applications like Water Cooler, Bottle Coolers, Ice Cream Parlours etc.



10 KVA

12 KVA

15 KVA

20 KVA

25 KVA

30 KVA

40 KVA

DSP SINE WAVE THREE PHASE INVERTERS (ALBS)

Technical Specifications

Model Name		10KVA/180V-360V	15KVA/180-360V	20KVA/240V	20KVA/360V	25KVA/360V	30KVA/360V	40KVA/360V
No Load Battery Current (NLC)		0.9±0.2A	0.9±0.2A	0.9±0.2A	0.9±0.2A	0.9±0.2A	0.9±0.2A	0.9±0.2A
O/P No Load Voltage	R	230±5V	230±5V	230±5V	230±5V	230±5V	230±5V	230±5V
	Y	230±5V	230±5V	230±5V	230±5V	230±5V	230±5V	230±5V
	B	230±5V	230±5V	230±5V	230±5V	230±5V	230±5V	230±5V
O/P Full Load Voltage	R	230±7%	230±7%	230±7%	230±7%	230±7%	230±7%	230±7%
	Y	230±7%	230±7%	230±7%	230±7%	230±7%	230±7%	230±7%
	B	230±7%	230±7%	230±7%	230±7%	230±7%	230±7%	230±7%
Full Load Battery Current	A	25±2A	37±2A	70±2A	49±2A	60±2A	106±2A	72±2A
Full Load O/P Current	R	11.6±0.5A	17.5±0.5A	23±0.5A	23±0.5A	29±0.5A	34.5±0.5A	46.5±0.5A
	Y	11.6±0.5A	17.5±0.5A	23±0.5A	23±0.5A	29±0.5A	34.5±0.5A	46.5±0.5A
	B	11.6±0.5A	17.5±0.5A	23±0.5A	23±0.5A	29±0.5A	34.5±0.5A	46.5±0.5A
Overload Retry		6Times	6Times	6Times	6Times	6Times	6Times	6Times
OutPut Frequency (Inverter Mode)	R	50.0 ± 0.5 Hz	50.0 ± 0.5 Hz	50.0 ± 0.5 Hz	50.0 ± 0.5 Hz	50.0 ± 0.5 Hz	50.0 ± 0.5 Hz	50.0 ± 0.5 Hz
	Y	50.0 ± 0.5 Hz	50.0 ± 0.5 Hz	50.0 ± 0.5 Hz	50.0 ± 0.5 Hz	50.0 ± 0.5 Hz	50.0 ± 0.5 Hz	50.0 ± 0.5 Hz
	B	50.0 ± 0.5 Hz	50.0 ± 0.5 Hz	50.0 ± 0.5 Hz	50.0 ± 0.5 Hz	50.0 ± 0.5 Hz	50.0 ± 0.5 Hz	50.0 ± 0.5 Hz
OutPut Sine Wave (Inverter)	R	Should be OK	Should be OK	Should be OK	Should be OK	Should be OK	Should be OK	Should be OK

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MAINS MODE

OutPut Sine Wave (Mains)	V	Should be OK	Should be OK	Should be OK	Should be OK	Should be OK	Should be OK	Should be OK
Mains Low Cut	V	180±10V	180±10V	180±10V	180±10V	180±10V	180±10V	180±10V
Recovery	R	190±10V	190±10V	190±10V	190±10V	190±10V	190±10V	190±10V
Mains High Cut	R	280±10V	280±10V	280±10V	280±10V	280±10V	280±10V	280±10V
Recovery	R	270±10V	270±10V	270±10V	270±10V	270±10V	270±10V	270±10V
Change Over Time (Mains to Inverter)		< 40ms	< 40ms	< 40ms	< 40ms	< 40ms	< 40ms	< 40ms
Change Over Time (Inverter to Mains)		<10ms	<10ms	<10ms	<10ms	<10ms	<10ms	<10ms
Batt Low Buzzer (V/Batt)		10.8V ±0.2V	10.8V ±0.2V	10.8V ±0.2V	10.8V ±0.2V	10.8V ±0.2V	10.8V ±0.2V	10.8V ±0.2V
Batt Low Cut (V/Batt)		10.10V ±0.2V	10.10V ±0.2V	10.10V ±0.2V	10.10V ±0.2V	10.10V ±0.2V	10.10V ±0.2V	10.10V ±0.2V
Batt Low Retry		4times	4times	4times	4times	4times	4times	4times
Short Circuit, Retry		NO	NO	NO	NO	NO	NO	NO
Permanent Short Circuit Protection		Should be OK	Should be OK	Should be OK	Should be OK	Should be OK	Should be OK	Should be OK
Max. Charging Current		10±2A	10±2A	10±2A	10±2A	10±2A	10±2A	10±2A
Boost Charging Voltage ±0.2V/Batt		14.2±0.2V/Batt	14.2±0.2V/Batt	14.2±0.2V/Batt	14.2±0.2V/Batt	14.2±0.2V/Batt	14.2±0.2V/Batt	14.2±0.2V/Batt
Trickle Charging Voltage ±0.2V/Batt		13.6±0.2V/Batt	13.6±0.2V/Batt	13.6±0.2V/Batt	13.6±0.2V/Batt	13.6±0.2V/Batt	13.6±0.2V/Batt	13.6±0.2V/Batt
Protection	Output Not Ok ,Battery Voltage Low, Over Load ,Battery Over Charge ,Over Temparture , Short Circuit ,Mains MCB Trip							
Displays	Welcome Message ,Capacity ,Output Voltgae ,Output Frequency,Load Percentage ,input Volatge& Frequency ,battery Charging ,Battery volatage, All Protection							

ENVIRONMENTAL PARAMETERS

Opreting Temperature	0 Deg. - 45 Deg.
Acoustic Noise at 1Mtr	< 45 DB
Relative Humidity	Max 95% Non -Condensing
Thermal Management	Integrated Cooling Fan & Heat Sink

* Charging Current Change on Custmer Dimand

Note: Specification subject to change without prior notice.



ENTO

House of Green Energy

Our Business Verticals

- International Business
- OEM Business
- Institutional & Corporate Business
- Domestic Distribution Business
- Turnkey Projects
- New Products Development Through R & D



Our upcoming Future Products range

- Water pumping solutions
- Voltage Surge protectors
- Distribution Box and Control Panels
- Wires and MCBs





We have been very active in domestic and international markets. We are doing considerable business in major part of Africa, Latin America. Middle East and SAARC Nations. We are having strong presence in all States of Indian domestic markets.



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