SOLAR HYBRID SYSTEMS
ECO-SMART SERIES (LKVA-LCD)

SPEQTA POWER

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 provids 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

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Technical Specifications

SPEQTA POWER

Model Name	Units	Eco-Smart 450/915	Eco-Smart 1215	Eco-Smart 1415	Eco-Smart 1600	Eco-Smart 2000	Eco-Smart 2500	Eco-Smart 3000
System rating	VA	300/700	900	1100	1450	1600	2100	2500
Operating DC voltage	Volts	12	12	12	24	24	24	24
Maximum Solar Pv Power	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 swich on front panel)						
Max Battery charging voltage by grid per battery	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						
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						
Selection of Operating Mode (LCD Models)		HC-Charging current = 20A ±1A Solar + Mains till battery boost voltage with maximum Solar Sharing. System 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 <=11.8V/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	2.8
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.								
Dimension (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.