

SOLAR HYBRID SYSTEMS OFFGRID USI SERIES (LKVA-LCD)

Elson

Solar Hybrid System (PCU-Offgrid) 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. Tasha has designed a superior computerized digital controller with these features:

CONVENIENCE

Solar Hybrid System use both Solar Power as well as A.C. Mains for charging the battery bank according to priority settings which provide 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/HC)
- ▶▶ Smart grid charging with Enable/Disable option.
- ▶▶ User selectable UPS and Normal Mode.
- ▶▶ Resettable AC circuit breaker which reduce service cells.
- ▶▶ 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 selections switches with LED indication on front panel.
- ▶▶ Battery charging even at low voltage.
- ▶▶ Grid bypass option available.



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



SOLAR HYBRID SYSTEMS OFFGRID USI SERIES (LKVA-LCD)

Model Name	Units	USI 450/915	USI 1215	USI 1415	USI 1500	USI 2000	USI 2500	USI 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 switch on front panel)							
	Vdc	14.4 ± 0.2							
Max Battery charging voltage by grid per battery		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)		<p>HC-Charging current = 20A ±1A Solar + Mains till battery boost voltage with maximum Solar Sharing. System will not be disconnect Grid in any case</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 <=11.8V/11.2V per Battery.</p> <p>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</p>							
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 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							
LCD Display parameters (LCD Models)		Tact switch Status							
Indication LEDs		0-50							
Operating Temperature range	°C	0 +65							
Storage Temperature range	°C	95							
Max RH	%	Display with tact switch							
Front panel details (MCB, Display, Selection switch etc)		O/P socket, fuse/Circuit breaker, mains & batt. Cable and fan							
Rear panel details (MCB, Terminals etc)		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 will be reseted to default value.									
Dimension (LxWxH) in mm		350*320*185	370*350*185	370*350*185	390*350*225	390*350*225	370*350*335	370*350*335	
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.

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