

UTL SOLAR

INDIA'S MOST PREFERRED
SOLAR INVERTER BRAND



Go Solar
With UTL Solar

Complete Range of
Solar rMPPT™ Solutions
1kVA - 120kVA



SOLAR
Product Catalogue

ISO
9001 : 2015

ISO
14001 : 2015

CE

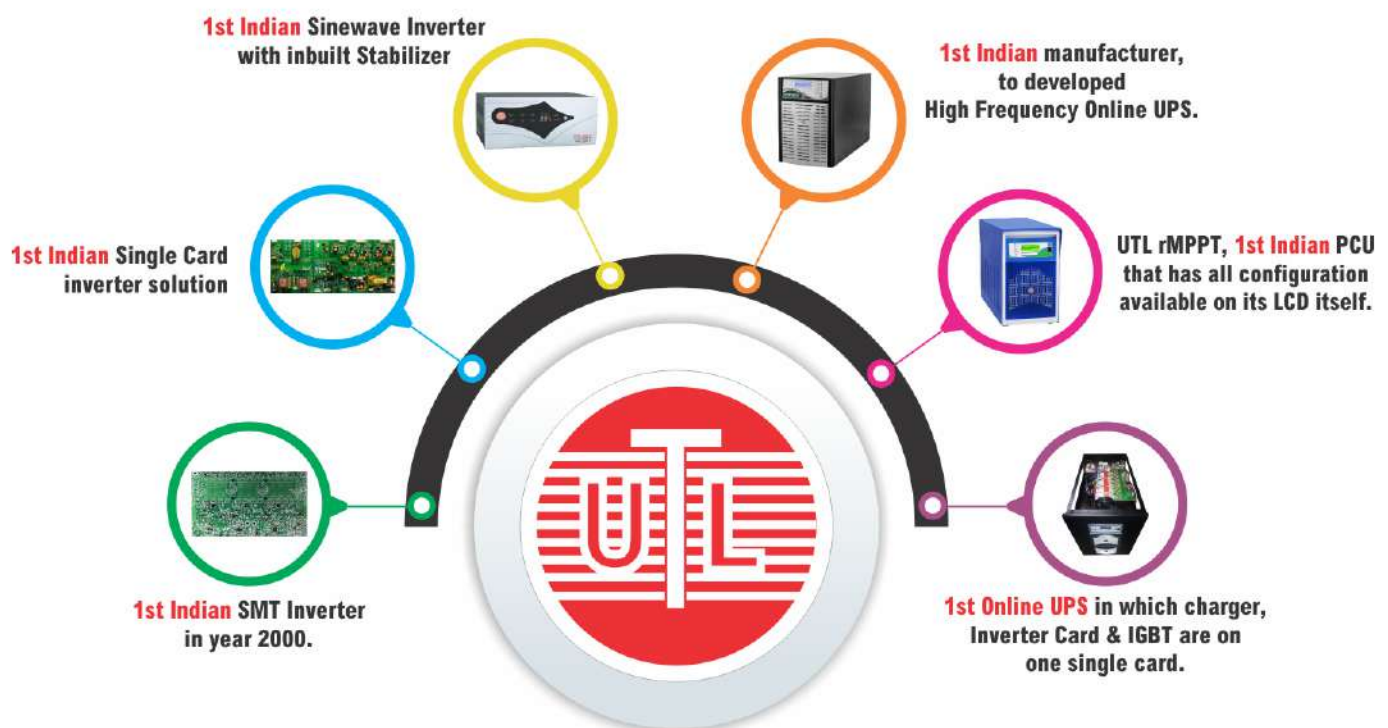
RoHS
compliant



ABOUT UTL

UTL was founded in the year 1996 by 2 proficient engineers **Mr Yogesh Dua** and **Mr Pawan Garg**. UTL is one of the leading brand in power back-up and power generation in India. UTL offers wide range of quality products, has 4 manufacturing units, strong network of distributors and dealers across the globe and highly motivated workforce. We are offering excellent R&D services through the team of more than 60 R&D professionals and exporting R&D services & UL Certified products to various countries including USA. As the company values long term relationship, our stakeholders and even customers have very long association with UTL.

Some remarkable milestones covered by UTL are...





UTL in 2018-2019

4

Manufacturing Units

23

Years Old Brand

60+

Strong R&D Team

120

kVA- We made upto 120kVA Capacity

1000+

Associated Employees

1100+

Per Day Production Capacity

10000+

Dealers in INDIA

5000000

Satisfied UTL Consumers

2.0 Bn

UTL Turnover

SUNPACK (Solar Home PCU)

“Reliable Solar Home PCU
from Last 4 Years”

Available in
800VA-3KVA



FEATURES

- ➔ Normal Inverter inbuilt with Solar Functionality.
- ➔ Sine Wave Output.
- ➔ Extensive electronic protections.
- ➔ Maintain Battery Health for Longer Life.
- ➔ Any battery option.
- ➔ Operated without Solar Panel also.
- ➔ Affordable and easy to install.
- ➔ Preference to Solar Power over Grid power.
- ➔ User Friendly Display & LED

SUNPACK (Solar Home PCU)

Model No.		SP-1025/15A-40A	SP-1625/15A-40A	SP-2525/40A	SP-3525/60A
DC Voltage		12VDC	24VDC	24VDC	48VDC
Operation Logic for Charging					
First Priority		Solar			
Second Priority		Solar + Grid			
Third Priority		Grid			
Operation Mode	Solar Max. Mode	Solar Priority (By Default)			
	Grid Max. Mode	Grid Priority			
Input Parameters					
Input Voltage		230Vac			
Input Voltage Range (Mode)		Wide Range	90-290V ± 10V		
		Narrow Range	170-270V ± 10V		
Input Frequency		50Hz			
Charging Topology		Boost Mosfet based			
Charging Current		upto 15A±1A			
Output Parameters					
Output Voltage		220Vac ± 8%			
Output Frequency on Battery		50Hz ± 0.05Hz			
Output Voltage Waveform		Pure Sine Wave			
Typical Efficiency		>85%			
Over Load Capacity		Wide Range	>110% : 3 times auto reset, 4th time shut down >200% Output goes down		
		Narrow Range	>110% : 1st time shut down >200% : Output goes down		
LED Indication		Mains ON, Battery ON, Battery Low, Battery Charging, Overload, Wide Range, Narrow Range, Battery High, Overheat, Short Circuit.			
LCD parameter		Mains Voltage, Mains Frequency, O/P Voltage, O/P frequency, Battery Voltage, Load%, Battery Status, Overload, Battery Low, Short Circuit			
Audible Alarm					
Battery low		Intermittent			
Overload		Continuous			
Mode Change		Single beep			
Safety Protection					
Protection		Battery Low, Overload, Short Circuit, Reverse Battery, Over Charging			
Solar Specifications					
Solar Voc		18-22.5V	30-45V	30-45V	60-90V
Max. PV Connected		300/600W	630/1260W	1260W	3150W
Charging current		Sharing		Grid+Solar	
Others					
Battery Start		Standard			
ChangeOver Time		Narrow Range	<8ms		
		Wide Range	<80ms		
Environmental					
Operating Temperature Range		0°C to 50°C			
Cooling		Forced Air			
Max. Humidity		5-95% (non condensed)			
Storage Temperature		-10°C to 70°C			
Degree of Protection		IP 20			

*Specification are subject to change without prior notice due to constant improvement in design & technology.

HELIAC (Solar Home PCU)

“Cost Effective PCU Compatible with SMF,
Gel and Tubular Batteries.”

Available in
800VA to 3kVA



FEATURES

- ➔ Inbuilt PWM Solar Charge Controller.
- ➔ Multi-Colour LCD Display.
- ➔ Freq.-Available 50 & 60Hz.
- ➔ Multi Charging Stage (Bulk, Absorption & Float) Auto Equalize in a month.
- ➔ Solar Priority for Load & Battery Charging.
- ➔ Preference to Solar Power over Grid Power.
- ➔ Pure Sine Wave Output.
- ➔ Protections : RBP, RSPV, OVL, BL, OBC, SC, IHV & ILV.
- ➔ Compatible with DG as an Input Source.
- ➔ Compatible with IT Load.
- ➔ Compatible with SMF, Gel & Tubular Batteries.
- ➔ Priority Selection - PCU, Smart & Hybrid for Saving Energy and Money.

HELIAC (Solar Home PCU)

Parameters			Rating					
System Rating			1050/50A	1200/50A	1650/50A	2050/50A	2550/70A	3550/60A
Capacity			800VA	1000VA	1500VA	2000VA	2200VA	3500VA
Operating DC Voltage			12V		24V			48V
Switching Element			Mosfet					
Charger Topology			Boost Mosfet					
Parameters (Grid)			Default Value			Variable Range		
Nominal Grid Voltage			230V					
Battery Low Buzzer			10.8V				Battery Low Cut +0.3V	
Battery Low Cut			10.5V				10V-11.5V	
Battery High Cut			16.5V				16.5V-17.5V	
SPV Charging Voltage (Boost)	SMF		13.7V				13.5V-14.5V	
	TUB		15V				14.2V-15.5V	
SPV Charging Voltage (Float)	SMF		13.7V				13.5V-13.7V	
	TUB		14.2V				13.8V-14.5V	
Grid Charging Voltage (Boost)	SMF		13.5V				13.5V-14.2V	
	TUB		14.5V				13.8V-15V	
Grid Charging Voltage (Float)	SMF		13.5V				NA	
	TUB		13.8V				13V-14.2V	
Grid Charging Voltage (Equalize)			After 30Days				NA	
Grid Charging Current			12A/15A				5A-20A	
Grid Reconnect @ Battery Voltage			11.8V				11V-12V	
Grid Low Cut Voltage	IT Mode Enable		170V±10V					
	IT Mode Disable		100V±10V					
Grid Low Cut Recovery	IT Mode Enable		180V±10V					
	IT Mode Disable		110V±10V					
Grid High Cut Voltage	IT Mode Enable		265V±10V					
	IT Mode Disable		290V±10V					
Grid High Cut Recovery	IT Mode Enable		255V±10V					
	IT Mode Disable		280V±10V					
Changeover (Batt. to Mains)	IT Mode Enable/Disable		<5ms					
Changeover (Mains to Batt.)	IT Mode Enable/Disable		<12ms					
Parameters (Inverter)								
Output Phase			1 Phase					
Nominal Output Voltage			220V±8%					
Max. Output Current		2.1A	2.9A	4.3A	5.5A	6.8A	10.0A	
Nominal Frequency		50Hz±1%					50-60Hz	
Output Waveform		Sinewave						
Typical Efficiency		≥82%	≥80%	≥85%	82%	≥80%	≥80%	
Voltage Harmonic		<3% (Linear Load)						
Over Load Capacity	IT Mode Disable	>110% 3Time Auto Reset, 4th Time Shut Down Note : Motor Load Run for 15min Only 2550 Model.						
	IT Mode Enable	>110% 1st Time Shut Down						
		>150% Output Goes Down						
Protection		Overload, Battery Low, Battery High, Output Short Ckt., Battery Reverse, Over Heat, Over frequency, Under Frequency, SPV High.						
LED Indication		System ON, (IT Mode, SMF/TUB, Boost Chg., DG Mode, Grid Chg.) Enable/Disable.						
Switches		Reset for System ON/OFF, UP, Down, Back, Enter(For LCD Calibration)						
Display		Battery Voltage, Charging Current, Grid Voltage, Grid Frequency, Output Voltage, Output Frequency, Load%, Battery Graph, Overheat, SPV Current, Working Mode(HYB/PCU/SMT).						
Parameters (Solar)								
Switching Element		Mosfet						
Controller		Yes						
Type of Charger		PWM						
Efficiency		≥95%						
Solar Current MAX.		50A				70A	60A	
Input Voltage Range (Min - Max)Voc		17V-25V		31V-45V			60V-90V	
Maximum PV Power Recommended		(150W/160W)x4	(150W/160W)x5	(315W/320W/325W)x4		(315W/320W/325W)x6	(315W/320W/325W)x10	
Parameters (Environment)								
Operating Temperature		0-50°C						
Cooling		Fan						
Max. Relative Humidity @25°C (non Condensing)		95%						
Noise @ 1meter		50dB						
Standard Compliance		IP20						
Weight (kg)		10	11	15	18	21	26.5	
Dimension L x W x H(mm)		300x275x128		300x300x165	450x340x300	300x330x310		

*Specification are subject to change without prior notice due to constant improvement in design & technology.

SHAMSI (Solar Home PCU)

“Affordable Yet, Very Reliable”

Available in
675VA to 1475VA



FEATURES

- ➔ Maintain battery health for longer life.
- ➔ Modified Sine wave output.
- ➔ Built-in IT mode.
- ➔ Easy Installation & low maintenance.
- ➔ Best Regulated output.
- ➔ Battery Charging with Multi stage (Bulk, Absorption & Float) Auto Equalize in a month.
- ➔ Protections : RBP, RSPV, OVL, BL, OBC, SC, IHV & ILV.
- ➔ Inbuilt PWM Solar Charge Controller.
- ➔ Priority Mode Selection
 - 1) PCU 2) Hybrid 3) SmartFor Saving Energy & Money.
- ➔ Can Operated without Solar.
- ➔ LED Display for Operation & Fault.

SHAMSI (Solar Home PCU)

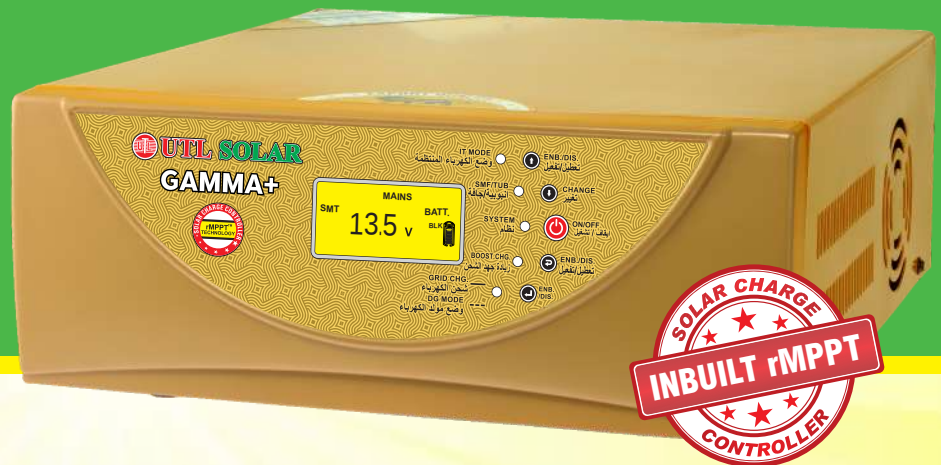
Parameters			Rating			
Model No			675/25A	875/50A	1075/50A	1475/50A
Operating DC Voltage			12V			24V
Switching Element			Mosfet			
Charger Topology			Boost Mosfet			
Parameters (Grid)			Default Value			
Nominal Grid Voltage			230V			
Battery Low Buzzer			10.8V			
Battery Low Cut			10.5V			
Battery High Cut			17V			
SPV Charging Voltage (Boost)	SMF	13.7V				
	TUB	15V				
SPV Charging Voltage (Float)	SMF	13.7V				
	TUB	14.2V				
SPV Current			50A			
Grid - Battery Charging Voltage (Boost)	SMF	13.5V				
	TUB	14.5V				
Grid - Battery Charging Voltage (Float)	SMF	13.5V				
	TUB	13.8V				
Grid - Battery Charging Voltage (Equalize)			After 30 Days			
Grid - Battery Charging Current			10A/12.5A			
Grid Reconnect @ Battery Voltage			11.8V			
Grid Low Cut Voltage	IT MODE ENABLE	170V±10V				
	IT MODE DISABLE	100V±10V				
Grid Low Cut Recovery	IT MODE ENABLE	180V±10V				
	IT MODE DISABLE	110V±10V				
Grid High Cut Voltage	IT MODE ENABLE	265V±10V				
	IT MODE DISABLE	290V±10V				
Grid High Cut Recovery	IT MODE ENABLE	255V±10V				
	IT MODE DISABLE	280V±10V				
Changeover (Battery to Mains)	IT MODE ENABLE/DISABLE	<5ms				
Changeover (Mains to Battery)	IT MODE ENABLE	<15ms				
	IT MODE DISABLE	<15ms				
Parameters (Inverter)						
Output Phase			1 Phase, 3Wire			
Nominal Output Voltage			240V±5%			
Nominal Frequency			50Hz±1%			
Output Waveform			Modified Sinewave			
Typical Efficiency			≥82%	≥80%	≥88%	
Over Load Capacity			>110% 3Time Auto Reset, 4th Time Shut Down			
			>150% Output Goes Down			
Protection			Overload, Battery Low, Battery High, Output Short Ckt., Battery Reverse, Phase Reverse, Over Heat, SPV High.			
LED Indication			System ON, (IT Mode, SMF/TUB, Boost Chg., Grid Chg.) Enable/Disable, Mains Status, Overload, Grid Chg., Inverter ON, Battery Status, SPV Chg., Fault.			
Switches			System ON, (IT Mode, SMF/TUB, Boost Chg., Grid Chg.) Enable/Disable			
Parameters (Solar)						
Switching Element			Mosfet			
Controller			Yes			
Type of Charger			PWM			
Efficiency			>95%			
Input Voltage Range (Min - Max)Voc			17V-25V		31V-45V	
Maximum PV Power Recommended			(150W/160W) x 4		(150W/160W) x 5	(315W/320W/325W) x 4
Parameters (Environment)						
Operating Temperature			0-50°C			
Cooling			Fan			
Max. Relative Humidity @25°C (non Condensing)			95%			
Noise @ 1meter			50db			
Standard Compliance			IP20			

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GAMMA⁺ (Solar Home PCU)

“Get Two Battery Back -up in Single Battery”

Available in
1kVA / 12V & 24V



FEATURES

- ➔ Controller based Design, Pure Sine Wave with 100% Tracking of Solar Panel, Built in rMPPT Charge Controller.
- ➔ Multi-Colour LCD Display.
- ➔ All Parameter Selected.
- ➔ Freq.:- Available - 50Hz & 60Hz.
- ➔ Multi Charging Stage (Bulk, Absorption & Float)
- ➔ Solar Priority of Load & Battery Charging.
- ➔ Preference to Solar Power Over Grid Power.
- ➔ Pure Sine Wave Output.
- ➔ Protections : RBP, RSPV, OVL, BL, OBC, SC, IHV & ILV.
- ➔ Compatible with DG as an Input Source.
- ➔ Compatible with IT Load.
- ➔ Compatible with SMF, Gel & Tubular Batteries.
- ➔ Priority Selection - PCU, Smart & Hybrid for Saving Energy and Money.

GAMMA⁺ (Solar Home PCU)

Parameters		Rating	
System Rating		1kVA	
Operating DC Voltage		12V/24V	
Switching Element		Mosfet	
Charger Topology		Boost Mosfet	
Grid		Setable Range	
Nominal Grid Voltage		230V	
Battery Low Buzzer		10.8V	Battery Low Cut - 0.3V
Battery Low Cut		10.5V	10-11.5V
Battery High Cut		16.5	16.5-17.5V
SPV Charging Current		18A	11-40A
SPV Charging Voltage Boost	SMF	13.7V	13.5-14.5V
	TUB	15V	14-15.5V
SPV Charging Voltage Floot	SMF	13.7V	13.5-14.5V
	TUB	14.2V	13.8-14.5V
Grid-Battery Charging Voltage Boost	SMF	13.5V	13.5-14.2V
	TUB	14.5V	13.5-15V
Grid-Battery Charging Voltage Float	SMF	13.5V	13.5-14.2V
	TUB	13.8V	13-14.2V
Grid-Battery Charging Current		10A/15A	3A-15A
Grid Reconnect @ Battery Voltage		11.8V	11-12V
Grid Low Cut Voltage	IT Mode Enable	170V±10V	
	IT Mode Disable	100V±10V	
Grid Low Cut Recovery	IT Mode Enable	180V±10V	
	IT Mode Disable	110V±10V	
Grid High Cut Voltage	IT Mode Enable	265V±10V	
	IT Mode Disable	290V±10V	
Grid High Cut Recovery	IT Mode Enable	255V±10V	
	IT Mode Disable	280V±10V	
Change Over (Battery to Mains)	IT Mode Enable/Disable	<5ms	
Change Over (Mains to Battery)	IT Mode Enable	<10ms	
	IT Mode Disable	<60ms	
Operating Mode		Smart/PCU/Hybrid, Default - SMT	
Inverter			
Output Phase		1 Phase,3 Wire	
Nominal Output Voltage		220 ±8%	
Nominal Frequency		50 ±1%	
Load Power Factor		0.8	
Output Waveform		Sinewave	
Typical Efficiency		>80%	
Voltage Harmonic		<3% (Liner Load)	
*Overload Capacity (IT Load Enable)%		100-110:10 Min 150-200:2 sec 110-120:2 Min 200-300:1Sec 120-150 :30sec >350:20ms	
* Overload Capacity (IT Load Disable)%		100-120 (3time auto reset):60 sec 250-350:1 sec 120-150 (3time auto reset) : 30 sec >350:20ms 150-200 : 2sec	
Protection		Overload, Battery Low, Battery High, Output Short Ckt, Battery Reverse, Phase reverse, Over Heat, Over frequency, Under frequency, SPV High, SPV Low, Solar Current High.	
LED Indication		System ON, (IT mode, SMF/TUB, Boost Chg, DG mode, Grid Chg.) Enable/Disable	
Switches		Reset for System ON/OFF, UP, Down, Back, Enter (For LCD Calibration)	
Display		Battery Voltage, Charging Current, Grid Voltage, Grid Frequency, Output Voltage, Output Frequency, Load %, Battery Graph, Overheat, SPV Current, SPV Voltage, Working Mode(HYB/PCU/SMT)	
Solar			
Switching Element		Mosfet	
Controller		Yes	
Type of Charger		MPPT with PWM	
Efficiency		>94%	
Input Voltage Range (Min - Max) Voc		15-45V(for 12V System) / 30-90V(for 24V System)	
Maximum PV Power Recommended		1000W	
Environment			
Operating Temperature		0-50°C	
Cooling		Fan	
Max. Relative Humidity @ 25°C (Non Condensing)		95%	
Noise @ 1meter		50dB	
Standard Compliance		IP20	
Dimension (LXWXH)mm		305.5 x 327.8 x 116	

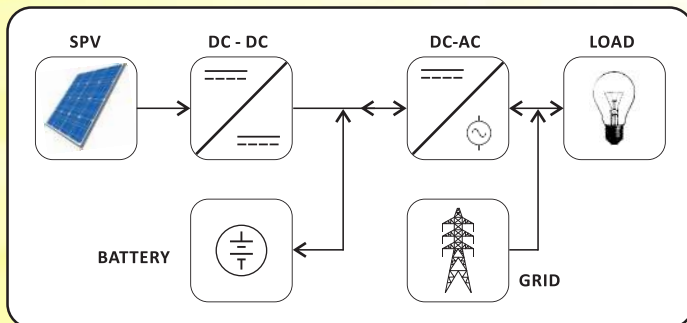
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GAMMA Solar PCU

rMPPT™ Offline Solar PCU 1Ph in 1Ph out

“Affordable Home rMPPT PCU”

Available in
2-5KVA



FEATURES

- ➔ Upto 30% more Efficient because of rMPPT Charge Controller.
- ➔ DSP/Controller based design Pure Sine Wave.
- ➔ Maximum preference to Solar Power.
- ➔ Robust design 21 years product life.
- ➔ Extensive Electronic Protection.
- ➔ Digital display.
- ➔ User Friendly :- NLSD, Grid Charging, IT Load, GENSET (Enable/Disable by LCD) & Operating Mode (Selectable).



PCU Mode Priority

Solar/Battery/Grid

Hybrid Mode Priority

For Load - Grid/Solar/Battery
For Charging - Solar/Grid

Smart Mode Priority

For Day Time - Solar/Battery/Grid
For Night Time - Grid/Battery

Application



GAMMA SOLAR PCU 1Ph in 1Ph out

Parameters		Units	Rating				
System Rating		KVA	2	2	3	5	5
Operating DC Voltage		V	24	48	48	48	96
Photovoltage Input							
Input Voltage Range (Min-Max)		VDC	45-90	80-230			160-450
Maximum PV Power Recommended		KW	2.0		3.0	5.0	
Number of Charge Controller			1				
Solar Charge Controller Rating		A	80	40	60	100	50
MPPT Based Charge Controller							
Switching Element			MOSFET	IGBT			
Controller			DSP				
Type of Charger			MPPT				
Efficiency		%	95				
Parameter			Default Value				
Battery Low Buzzer		V	10.2				
Battery Low Cut		V	10.0				
Battery High Cut		V	15.5				
Battery Charging Voltage by SPV		V	14.5				
Battery Charging Current by SPV		A	18				
Battery Charging Voltage by GRID		V	14.2				
Battery Charging Current by GRID		A	10				
Grid Low Cut Voltage (IT Load Disable/Enable)		V	120/175				
Grid High Cut Voltage (IT Load Disable/Enable)		V	280/260				
Output Voltage Low		V	185				
Output Voltage High		V	260				
Grid Disconnect (Solar Available)			@14.5 / Battery for 2 minutes OR 13.5/Battery-100% Current				
Grid Reconnect (PCU Mode/Smart Mode)		V	11.5				
No Load Shut Down		W	<10				
Grid Charger	Configurable		Enable / Disable, Default-Enable				
No Load Shut Down			Enable / Disable, Default-Disalbe				
IT Load			Enable / Disable, Default-Disalbe				
Operating Mode			SMART/PCU/HYBRID, Default-SMART				
Input Source			GRID/GENSET, Default-GRID				
Inverter							
Switching Element			MOSFET				
Control			PWM				
Nominal Output Voltage		VAC	230				
Output Supply Phase			1 phase, 3 wire				
Output Waveform			Pure Sine Wave				
Nominal Frequency		Hz	50.0				
Load Current		A	6.1	9.1	15.2		
Voltage Regulation (No Load to Full Load)		%	<1				
Output Voltage Distortion with 100% Linear Load		%	<3				
*Overload Capacity (IT LOAD ENABLE)		%	100-110 : 10 min 110-120 : 2 min 120-150 : 30 sec	150-250 : 2sec 250-350 : 1sec >350 : 20ms	(100-150 10 Min in Gamma 2kVA/48V)		
*Overload Capacity (IT LOAD DISABLE)		%	100-120(3time auto reset): 60sec 120-150(3time auto reset): 30sec 150-250 : 2sec	250-350 : 1sec >350 : 20ms	(100-150 10 Min in Gamma 2kVA/48V)		
Peak Efficiency		%	85	88			
Noise @ 1meter		dB	50				
Cooling			Temp Controlled, Fan				
Protections			Overload, Battery low, Battery high, Output low, Output high, Output Short Circuit, Overheat, Under Frequency, Over Frequency, Solar panel reverse				
Display Parameters			Battery Voltage, Charging Current, Discharging Current* Solar Voltage, Solar Current, Instantaneous Power, Grid Voltage, I/P Frequency Output Voltage, Output Load% O/P Frequency Grid, Inverter & SPV Charger Status				
Switches			Reset for System ON/OFF, up, Down, Back, Enter (for LCD Configuration)				
Indications			System ON, Inv. ON, SPV Charging, Grid Charging, Batt. Low/High, Overload, Overheat, Mains Low, Mains High, Under frequency, Over frequency, (IT Mode, Grid Charging, NLSD, Boost Chg.,DG Mode)Enable/Disable*, Fault				
Environment							
Operating Temperature		°C	0-50				
Max Relative Humidity @25°C (non condensing)		%	95				
Dimension (L X W X H)		Inch	18 X 10 X 17	15 X 11 X 14	18 X 10 X 17		
Weight		Kg.	30	27	39	55	

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ALFA⁺ Solar PCU

rMPPT™ Offline Solar PCU (1Ph in 1Ph out)

“Most Featureful Solar PCU”

Available in
1-15kVA



FEATURES

- ➔ Upto 30% more Efficient because of rMPPT Charge Controller.
- ➔ Advance DSP Based design Pure Sine Wave.
- ➔ NLSD & Grid Charging - Enable/Disable by LCD.
- ➔ Tested as per IEC 61683 and IEC 60068-2-(1,2,14,30) standards.
- ➔ USB/Ethernet*/GSM* based monitoring with 30 days data storage, DC and AC energy meter.
- ➔ User Configurable Parameters.
- ➔ Lightning, Surge Protection.
- ➔ Short Circuit Protection.
- ➔ Intelligent Charge Sharing.
- ➔ User Configurable:- Batt. Low/High, SPV Volt./Current, Grid Volt./Current, Grid Reconnect Setting.

PCU Mode Priority

Solar/Battery/Grid

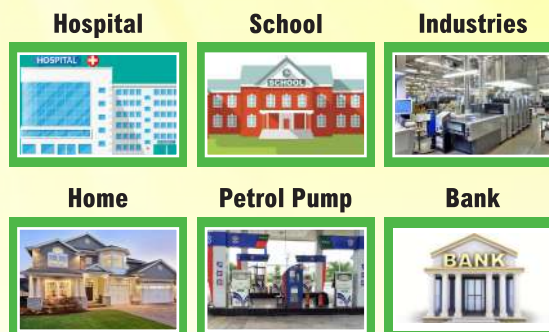
Hybrid Mode Priority

For Load - Grid/Solar/Battery
For Charging - Solar/Grid

Smart Mode Priority

For Day Time - Solar/Battery/Grid
For Night Time - Grid/Battery

Application



ALFA⁺ SOLAR PCU (1Ph in 1Ph out)

Parameters		Units		Rating											
System Rating		KVA	1	1	2	3	5	5	7.5	7.5	10	10	15		
Operating DC Voltage		V	24	48	48	48	48	96	96	120	120	180	240		
Photovoltaic Input															
Input Voltage Range (Min-Max)		VDC	45-90	80-230				160-450		200-550		300-625	400-750		
Maximum PV Power Recommended		KW	1.0	1.0	2.0	3.0	5.0		7.5		10		15		
Solar Charge Controller Rating		A	40	20	40	60	100	50	75	60	80	50	60		
MPPT Based Charging Controller															
Switching Element			Mosfet	IGBT											
Controller				DSP											
Type of Charger				MPPT											
Efficiency		%		95											
Parameter				Configurable									Default Value		
Battery Low Buzzer		V		Batt. Low Cut +0.2									11.2		
Battery Low Cut		V		10-11.7									11.0		
Battery High Cut (INV.)		V		SPV Present-SPV CHG. REF +1V for 15Sec, SPV CHG. REF +1.5V for 2Sec									16		
				SPV Absent-SPV CHG. REF for 15Sec, SPV CHG. REF +0.2V for 2Sec									14.7		
Battery Charging Voltage by SPV		V		13.5-16									14.5		
Battery Charging Current by SPV		A		12-60									18		
Battery Charging Voltage by Grid		V		13.0-15									14.2		
Battery Charging Current by Grid		A		6-15									10		
Grid Low Cut Voltage (IT Mode/Normal)		V		NA/120-200									175/120		
Grid High Cut Voltage (IT Mode/Normal)		V		NA/245-280									260/280		
Grid Charging				Enable/Disable									Enable		
IT Load				Enable/Disable									Disable		
Operating Mode				Smart/PCU/Hybrid									Smart		
Output Voltage Low		V		170-190									185		
Output Voltage High		V		250-260									260		
No Load Shut Down				Enable/Disable									Disable		
Input Source				Grid/Genset									Grid		
Battery															
Grid Disconnect (Solar Available) PCU/SMART				@14.5/Battery for 2minutes or 13.5/Battery-100% Current											
Grid Reconnect (PCU Mode/Smart Mode)		V		11-12									11.5		
Temp. Compensation				@3mV/cell/°C ; 18mV/Battery/°C											
Inverter															
Switching Element				Mosfet				IGBT	Mosfet	IGBT					
Control				PWM											
Nominal Output Voltage		VAC		220											
Output Supply Phase				1Phase, 3Wire											
Output Waveform				Pure Sine Wave											
Nominal Frequency		Hz		50.0											
Load Current		A	4.5	4.5	9	13.5	18	18	27	27	36	36	54		
Voltage Regulation		%		1											
Output Voltage Distortion with 100% Linear Load		%		<3											
Overload Capacity (IT LOAD DISABLE)		%	100-120(2time auto reset) : 60sec							200-300 : 1sec					
			120-150(2time auto reset) : 30sec							300-400 : 250ms					
			150-200 : 2sec							>400 : 20ms					
Overload Capacity (IT LOAD ENABLE)		%	100-110 : 10 Min							150-200 : 2Sec				>400 : 20ms	
			110-120 : 2 Min							200-300 : 1Sec					
			120-150 : 30sec							300-400 : 250ms					
Peak Efficiency		%	>82			>88									
Noise @ 1meter		dB	50												
Cooling			Temp Controlled, Fan												
Protections			Overload, Battery Low, Battery High, Output Low, Output High, Output Short Ckt., Overheat, Under Frequency, Over Frequency, Solar Panel Reverse												
Display Parameters			Battery Voltage, Charging Current, Discharging Current, Charging KWH, Discharging KWH, Solar Voltage, Solar Current, Instantaneous Power, Cumulative Power, Grid Voltage, Grid Current, Grid Frequency, Output Voltage, Output Current, Output Frequency NLSD En/Dn, IT Load En/Dn Grid Charger En/Dn, Operating Mode PCU/SMT/HYD												
Switches			Reset for System ON/OFF, UP, DOWN, BACK, ENTER (for LCD Configuration)												
Indications			System ON, Inverter ON, SPV Charging, Grid Charging, Battery Low/High, Overload, Overheat, Mains Low, Mains High, Under Frequency, Over Frequency, NLSD, Fault												
Environment															
Operating Temperature		C	0-50												
Max Relative Humidity @25°C(non condensing)		%	95												
Degree of Protection			IP21												
Data Logging			30 Day Data Storage												
Dimension (LxWxH)		Inch	18 X 10 X 18					24 X 13 X 23				24 X 13 X 26			
Weight (Approx)		Kg.	32	33	40	44	50	71	65	80	103		120		

*Specification are subject to change without prior notice due to constant improvement in design & technology.

SIGMA⁺ Grid Export Solar PCU

rMPPT™ Hybrid Solar PCU (1Ph in 1Ph out)

“A Smart PCU - Which Stores as well as Exports Electricity”

Available in
1-15KVA



FEATURES

- ➔ Grid Interactive.
- ➔ DSP based design built in rMPPT solar charge controller.
- ➔ USB/Ethernet based monitoring with 30 days data storage.
- ➔ Maximum preference to Solar Power.
- ➔ Priority based working modes:
Smart Mode - Solar, Battery, Grid (Day time)
Grid, Battery (Night time).
PCU Mode - Solar, Battery, Grid.
Hybrid Mode - Grid, Solar, Battery (Load)
Solar/Grid (Charging)
Grid Export Mode - Solar, Grid, Battery.
- ➔ User friendly & easily accessible LCD Display with all AC & DC parameter configurable from LCD:
AC- Input & Output Voltage.
DC- Battery charging voltage, Charging current, Low cut & High cut.
- ➔ Compatible with all PV arrays having different no of cells (36 cell/60 cell/72 cell) with 100% panel power rating.
- ➔ IEC 61683, 61727, 60529, 60068-2 (1,2,14,30) and 62116 standards approved from MNRE.

PCU Mode Priority

Solar/Battery/Grid

Hybrid Mode Priority

For Load - Grid/Solar/Battery
For Charging - Solar/Grid

Smart Mode Priority

For Day Time - Solar/Battery/Grid
For Night Time - Grid/Battery

Grid Export Mode

Solar/Grid/Battery

Application

Hospital



School



Industries



Home



Petrol Pump



Bank



SIGMA⁺ Grid Export SOLAR PCU (1Ph in 1Ph out)

Parameters		Units				Rating						
System Rating		KVA	1	1	2	3	4	5	7.5	10	10	15
Operating DC Voltage		V	24	48	48	48	48	96	120	120	180	240
Photovoltaic Input												
Input Voltage range(Min.-Max.)		V _{oc}	45-90	80-230	80-230	80-230	80-230	160-450	200-550	200-550	300-625	400-750
Maximum PV power recommended		kW	1	1	2	3	4	5	7.5	10	10	15
Solar Charge Controller Rating		A	40	20	40	60	80	50	60	80	50	60
MPPT Based Charge Controller												
Switching Element			MOSFET				IGBT					
Controller			DSP									
Type of Charger			MPPT									
Efficiency		%	95									
Parameters		Configurable						Default Value				
Battery Low Buzzer		V	Batt. Low Cut +0.2									11.2
Battery Low cut		V	10-11.7									11
Battery High cut (INV.)		V	SPV Present-SPV CHG. REF +1V for 15Sec, SPV CHG. REF +1.5V for 2Sec									16
			SPV Absent-SPV CHG. REF for 15Sec, SPV CHG. REF +0.2V for 2Sec									14.7
Battery Charging Voltage with SPV		V	13.5-16									14.5
Battery Charging Current with SPV		A	2-60 (Optional) / 2-23 (Regular)									18
Battery Charging Voltage with Grid		V	13-15.5									14.2
Battery Charging Current with Grid		A	1-16									10
Grid low cut voltage(IT Load Enb/Dis)		V	NA/120-200									175/120
Grid high cut voltage(IT Load Enb/Dis)		V	NA/245-280									260/280
Grid Charging		V	Enable/Disable									Enable
IT Load			Enable/Disable									Enable
Operating mode			Smart/PCU/Hybrid/Grid Export									Smart Mode
Input Source			Grid/Genset(for Genset, Grid Export Mode must be Disable)									Grid
Output voltage low		V	170-190									185
Output voltage high		V	250-260									255
No load shutdown			Enable/Disable									Disable
Grid Export Mode Enable												
Grid Low/recover		V	185/195									
Grid High/recover		V	280/275									
Synchronization voltage range		V	185-280V									
Synchronization frequency range		HZ	47 to 53									
maximum charging current from grid (import)		A	1-16A									10
Battery												
Grid Disconnect (Solar Available) PCU/SMART			@14.5V/Battery for 2 minutes OR 13.5V/Battery-100% Current (if Grid Chg. Volt. Ref. set to 14.2V)									
Grid Reconnect (PCU Mode / Smart Mode), Import ON (Grid Export mode)		V	11-12									11.5
Temp. Compensation			@ 3mV/cell/°C; 18mV/Battery/°C									
Inverter												
Switching Element			MOSFET					IGBT				
Control			PWM									
Nominal Output voltage			220									
Output supply phase			1Phase, 3 Wire									
Output waveform			Pure Sine Wave									
Nominal frequency		Hz	50									
Load Current		A	4.5	4.5	9	13.5	14.2	18	27	36	36	54
Voltage regulation		%	1									
Output voltage distortion with 100% linear load		%	<3									
Overload capacity		%	IT Load Disable 100 - 120%(3TAR) :60sec; 200 - 300%:1 sec; 120 - 150%(3TAR) :30sec; 300 - 400%:250msec; 150 - 200%:2sec; >400%:20msec;					IT Load Enable 100 - 110%:10min; 150 - 200%:2sec; 110 - 120%:2min; 200 - 300%:1sec; 120 -150%:30sec; 300 - 400%:250msec; >400%(20msec - 30msec)			Grid Tie ON Over Load Indication @>200% >200 - 300% : 10min >300 - 400% : 1min >400% : 250ms	
Peak efficiency		%	>85									
Noise @ 1 meter		dB	50									
Cooling			Temp. Controlled Fan									
Protections			Overload, Battery Low, Battery High, Output Low, Output High, Input Low, Input High, SPV Low, SPV High, Output Short Ckt., Input Short Ckt., Over Temp., Under Frequency, Over Frequency, Solar Panel Reverse, Anti-islanding, Surge Protection, Grid/Solar Charger Open Circuit.									
Display Parameters			Battery Voltage, Charging Current, Discharging Current, charging KWH and discharging KWH									
			Solar Voltage, Solar Current, Instantaneous Power, Cumulative Energy									
			Grid Voltage, Grid Current, Frequency, Import Power, Import Energy ,									
			Export Power, Export Energy									
			Output Voltage, Output Current, Frequency, Instantaneous Power & Commutative Energy									
			Grid, Inverter & SPV Charger Status									
Switches			System Info : NLSD-EN, Grid CHG-EN, IT Load-EN, Input Source-Grid, Operation Mode-Smart									
Indications			Reset for System ON/OFF, UP, DOWN, BACK, ENTER (for LCD Configuration)									
			System ON, Inv. ON, SPV Charging, Grid Charging, Grid Tie ON, Battery Low/High/NLSD, Overload / Overheat, Mains Low / Mains High, Under frequency/Over frequency, Operating modes (smart, Hybrid, PCU and Gridexport), Fault, HOE									
Environment												
Operating temperature		°C	0-50									
Max. Relative Humidity @ 25 C (non condensing)		%	95									
Degree of Protection			IP-21									
Data Logging			30 Days Data Storage									
Dimension (LxWxH)		Inch	15x16x15	18 x 10 x 20				23 x 13 x 26		26 x 13 x 26		30 x 16 x 27
Weight (Approx)		kg	30	35	43	50	52	70	78	103	120	

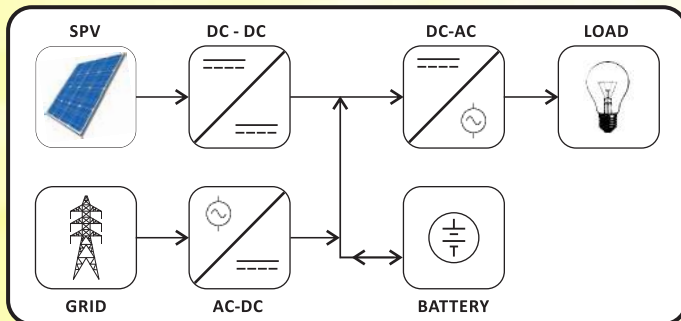
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ALFA Online Solar PCU

rMPPT™ Online Solar PCU (1Ph in 1Ph out)

“Zero Changeover Suitable for
Banks & IT Companies”

Available in
5-10KVA



FEATURES

- ➔ Upto 30% more Efficient because of rMPPT Charge Controller.
- ➔ Advance DSP Based design Pure Sine Wave.
- ➔ NLSD & Grid Charging - Enable/Disable by LCD.
- ➔ USB based monitoring with 30 days data storage, DC and AC energy meter.
- ➔ User Configurable Parameters.
- ➔ Lightning, Surge Protection.
- ➔ Short Circuit Protection.
- ➔ Intelligent Charge Sharing.

Working Mode

Solar/Grid/Battery
or
Solar/Battery/Grid

Application



ALFA ONLINE SOLAR PCU (1Ph in 1Ph out)

Parameters	Units	Rating			
System Rating	KVA	5	6	7.5	10
Operating DC Voltage	V	96	120	120	180
Photovoltage Input					
Input Voltage Range (Min-Max)	VOC	144 - 360	180-450		270-660
Maximum PV Power Recommended	KW	5.0	6.0	7.5	10
Number of Charge Controller		1			
MPPT Based Charge Controller					
Switching Element		IGBT			
Controller		DSP			
Type of Charger		PWM with MPPT			
Priority		Solar/Grid/Battery			
Efficiency		95			
Configurable Parameters					Default Value
Battery Low Buzzer	V	Battery Low Cut + 0.2			11.2
Battery Low Cut	V	10-11.7			11.0
Battery High Cut	V	15-17			15.5
Battery Charging Voltage by SPV	V	13.5-16			14.5
Battery Charging Current by SPV	A	12-50			18
Battery Charging Voltage by Grid	V	12.8-14.5			13.3
Battery Charging Current by Grid	A	5-15			5
Grid Low Cut Voltage	V	N/A			160
Grid High Cut Voltage	V	N/A			280
Output Voltage Low	V	170-190			185
Output Voltage High	V	250-260			260
Battery					
Temp. Compensation		@ 3mV/cell; 18mV/Battery			
Grid Disconnect (Solar Available)	V	13-14.5 & 20%-90% of Solar Charging Current			13.5V & 50%
Grid Reconnect	V	10.5-12.5			11.5
Inverter					
Switching Element		IGBT			
Control		PWM			
Nominal Output Voltage	VAC	220			
Output Supply Phase		1 Phase, 3 Wire			
Output Waveform		Sinewave			
Nominal Frequency	Hz	50.0			
Load Current	A	18	21.8	27.2	36.3
Voltage Regulation	%	1.00			
Output Voltage Distortion with 100% Linear Load	%	<3			
Overload Capacity	%	100-110 : 10 Minutes 110-120 : 2 Minutes 120-150 : 30 sec	150-200 : 2sec 200-300 : 1sec 300-400 : 250msec	>400 : 20msec	
Peak Efficiency	%	86			
Noise @ 1 meter	dB	55			
Cooling		Temp. Controlled Fan			
Protections		Overload, Battery Low, Battery High, Output Low, Output High, Output Short Ckt., Overload, Under Frequency, Over Frequency, Solar Panel Reverse			
Display Parameters		Battery Voltage, Charging Current, Discharging Current, Charging KWH, Discharging KWH, Battery Status Bar Graph			
		Solar Voltage, Solar Current, Instantaneous Power, Cumulative Power			
		Grid Voltage, Grid Current, Cumulative Power, Instantaneous Power, Grid Frequency			
		Output Voltage, Output Current, Cumulative Power, Instantaneous Power, Output Frequency			
Switches		Reset for System ON/OFF, UP, Down, Back, Enter (for LCD Configuration)			
Indications		System ON, Inverter ON, SPV Charging, Grid Charging, Battery Low/High, Overload, Overheat, Mains Low, Mains High, Under Frequency, Over Frequency			
Environment					
Operating Temperature	°C	0-50			
Max Relative Humudity @25°C (non Condensing)	%	95			
Degree of Protection		IP21			
Data Logging		30 Days Data Storage			
Dimension(LxWxH)	Inch	24X13X23			26X13X26
Weight	Kg.	65	70	80	94

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MARS Online Solar PCU

rMPPT™ Online Solar PCU

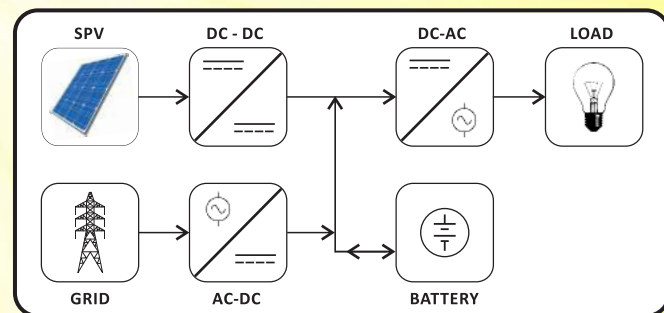
“3 Phase, Zero Changeover
Suitable for All Resistive Loads”

Available in
5-20KVA



FEATURES

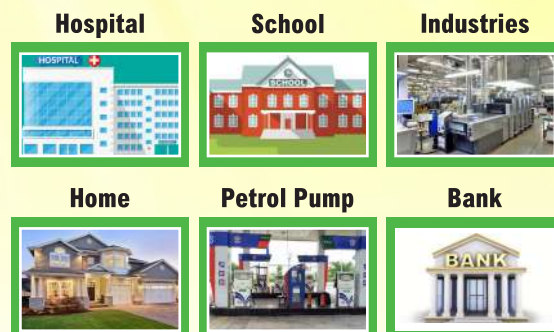
- ➔ DSP based design Pure Sine wave, Built in rMPPT charge controller.
- ➔ Thermal Protection.
- ➔ Maximum Preference to Solar Power.
- ➔ Ethernet based monitoring.
- ➔ Noiseless in Operation.
- ➔ Robust Design - 20 years Product life.
- ➔ Configurable Priority.
 - a) Solar/Battery/Grid
 - b) Solar/Grid/Battery
- ➔ AC and DC Parameter Configurable from LCD.
- ➔ AC-Output Voltage.
- ➔ DC- Charging Voltage Battery Charging Current, Battery Low Cut/High Cut.
- ➔ High Surg Capability (up to 300%) for starting heavy load.
- ➔ High Efficiency & High Reliability.



Working Mode

Solar/Grid/Battery
or
Solar/Battery/Grid

Application



MARS ONLINE SOLAR PCU (3Ph in 1Ph out)

Input	Power Rating	5kVA/240V	7.5kVA/240V	10kVA/240V	15kVA/240V	20kVA/240V
	Voltage Range	400V±20% Three phase four wire				
	Frequency	50Hz±20%				
	Power Factor	>0.92				
	Charger Topology	Buck				
	Connection Type	Terminal Block				
Solar	K Watt	5KW	7.5KW	10KW	15KW	20KW
	Voc (min-max)	400V - 740V				
	Vmp	288V - 660V				
	Configurable (72 Cell)	16 panel in series *1 string	12 panel in series *2 string	16 panel in series *2 string	12 panel in series *4 string	16 panel in series *4 string
	Switching Devices	IGBT				
	Switching Freq.	16KHz				
	No. of Charger Controller	One				
	Charger Topology	Buck				
	Type of Charger	PWM with MPPT				
	Peak Efficiency (DC - DC)	96%				
	Parameter	Configurable			Default	
	Battery Low Buzzer	Batt Low Cut + 0.2			10.7V	
	Battery Low Cut	10-11.7V			10.5V	
	Battery High Cut (Charger)	Batt Volt By SPV + 0.7			14.5	
	Batt. CHG. Volt. by Grid	13-14.5V			13.3V	
	Batt. CHG. Current. by Grid	3-12A			10A	
	Batt. CHG. Volt. by SPV	13.5-15V			13.8V	
	Batt. CHG. Current. by SPV	5-24V			18V	
	Grid Charger Reconnect	Enable /Disable			Disable	
	Output Voltage Low Cut	170-190V			180V	
	Output Voltage High Cut	250-260V			255V	
	Output	Voltage	220V/230V/240V±1% (1phase 2 wire)			
Load Current		17.4A	26.08A	34.78A	52.17A	69.56A
Efficiency (AC - AC)		>90%@Full Load				
Frequency		50Hz				
Waveform		Pure Sine Wave				
Transient Response		<8 (10%~90% Linear Load)				
Voltage Harmonics		<3% Linear Load				
Overload Capacity		100 to 110%-10 Min., 110 to 120%-2 Min.; 120 to 150%-30 Sec; 150 to 200%-2 Sec; 200 to 300%-1sec.; 300 to 400%-250msec., >400%-20-30msec				
Crest Factor		3:1				
Voltage Harmonics		±1%				
Frequency Regulation		±0.05Hz				
Connection Type		Terminal Block				
Alarm		Battery Low, battery High, Overload				
LED Indication		#UPS ON #Mains CHG. #Overload #Output High/Low #Battery High/Low, #Bypass #SPVCG. ON #SPV High/Low #CHG. OVERHEAT #AC Input High/Low R,Y,B #fault				
LCD (20*4) Display		#Input Voltage & Freq. R,Y,B #Output Voltage, Freq. & Load% # Battery Voltage #Charging Current #Solar Voltage, Solar Current, Solar Watt, #Working Status				
Protections		#Output Overvoltage/Undervoltage, #Overload, #Output Shortcircuit, #Battery Overvoltage/ undervoltage #SPV Under Voltage/ Over Voltage #Input Under Voltage/Over Voltage				
Miscella- neous	Transfer Time	0 msec				
	Extended Battery Charging	Optional				
	Caster Wheels	Yes				
Environ- mental	Operating Environment	0-50° C				
	Operating Relative Humidity	(5%-95%) Non-condensed				
	Storage Environment	0-75°C				
	Storage Relative Humidity	0-95%				
	Degree of Protection	IP20				
	Remote Monitoring	Ethernet (Optional)				
	Dimension (LXWXH) Inch	23x13x26		30x16x27		38x26x35

*Specification are subject to change without prior notice due to constant improvement in design & technology.

MARS ONLINE SOLAR PCU (3Ph in 3Ph out)

Input	Power Rating	5kVA/240V		7.5kVA/240V		10kVA/240V		15kVA/240V		20kVA/240V	
	Voltage Range	400V±20% Three phase four wire									
	Frequency	50Hz±20%									
	Power Factor	>0.92									
	Charger Topology	Buck									
	Connection Type	Terminal Block									
Solar	K Watt	5KW		7.5KW		10KW		15KW		20KW	
	Voc (min-max)	400V - 740V									
	Vmp	288V - 660V									
	Configurable (72 Cell)	16 panel in series *1 string		12 panel in series *2 string		16 panel in series *2 string		12 panel in series *4 string		16 panel in series *4 string	
	Switching Devices	IGBT									
	Switching Freq.	16KHz									
	No. of Charger Controller	One									
	Charger Topology	Buck									
	Type of Charger	PWM with MPPT									
	Peak Efficiency (DC - DC)	96%									
	Parameter	Configurable						Default			
	Battery Low Buzzer	Batt Low Cut + 0.2						10.7V			
	Battery Low Cut	10-11.7V						10.5V			
	Battery High Cut (Charger)	Batt Volt By SPV + 0.7						14.5			
	Batt. CHG. Volt. by Grid	13-14.5V						13.3V			
	Batt. CHG. Current. by Grid	3-12A						10A			
	Batt. CHG. Volt. by SPV	13.5-15V						13.8V			
	Batt. CHG. Current. by SPV	5-24V						18V			
	Grid Charger Reconnect	Enable /Disable						Disable			
	Output Voltage Low Cut	170-190V						180V			
	Output Voltage High Cut	250-260V						255V			
Output	Voltage	380V/400V/415V ±1% (3phase 4 wire)									
	Load Current	5.8A		8.7A		11.6A		17.4A		23.2A	
	Efficiency (AC - AC)	>90%@Full Load									
	Frequency	50Hz									
	Waveform	Pure Sine Wave									
	Transient Response	<8 (10%~90% Linear Load)									
	Voltage Harmonics	<3% Linear Load									
	Overload Capacity	100 to 110%-10 Min., 110 to 120%-2 Min.; 120 to 150%-30 Sec; 150 to 200%-2 Sec; 200 to 300%-1sec.; 300 to 400%-250msec., >400%-20-30msec.									
	Crest Factor	3:1									
	Voltage Harmonics	±1%									
	Frequency Regulation	±0.05Hz									
	Connection Type	Terminal Block									
	Alarm	Battery Low, battery High, Overload									
	Indication	LED	#UPS ON #Mains CHG. #Overload R,Y,B #Output High/Low R,Y,B #Battery High/Low #SPVCHG. ON #SPV High/Low #CHG. OVERHEAT #AC Input High/Low R,Y,B #FAULT.								
LCD (20*4)		#Input Voltage & Freq. R,Y,B #Output Voltage, Freq. & Load% R,Y,B # Battery Voltage #Charging Current #Solar voltage, Solar Current, Solar Watt, #Working & Fault Status.									
Protection	Parameters	#Output Overvoltage/Undervoltage, #Overload, #Output Shortcircuit, #Battery Overvoltage/undervoltage #SPV Under Voltage/ Over Voltage #Input Under Voltage/Over Voltage.									
Miscellaneous	Transfer Time	0 msec									
	Extended Battery Charging	Yes									
	Caster Wheels	Yes									
Environmental	Operating Environment	0-50° C									
	Operating Relative Humidity	(5%-95%) Non-condensed									
	Storage Environment	0-75°C									
	Storage Relative Humidity	0-95%									
	Degree of Protection	IP20									
	Remote Monitoring	Ethernet (Optional)									
	Dimension (LXWXH) Inch	23x13x26				30x16x27				38x26x35	

*Specification are subject to change without prior notice due to constant improvement in design & technology.

MARS ONLINE SOLAR PCU (3Ph in 3Ph out)

Input	Power Rating	5kVA/360V		10kVA/360V	15kVA/360V	20kVA/360V
	Voltage Range	400V±20% Three phase four wire				
	Frequency	50Hz±20%				
	Power Factor	>0.92				
	Charger Topology	Buck				
	Connection Type	Terminal Block				
Solar	K Watt	5KW	10KW	15KW	20KW	
	Voc (min-max)	(540V - 810V)				
	Vmp	(430V - 730V)				
	Configurable (72 Cell)	16 panel in series *1 string	16 panel in series *2 string	16 panel in series *3 string	16 panel in series *4 string	
	Switching Devices	IGBT				
	Switching Freq.	16KHz				
	No. of Charger Controller	One				
	Charger Topology	Buck				
	Type of Charger	PWM with MPPT				
	Peak Efficiency (DC - DC)	96%				
	Parameter	Configurable				Default
	Battery Low Buzzer	Batt Low Cut + 0.2				10.7V
	Battery Low Cut	10-11.7V				10.5V
	Battery High Cut (Charger)	Batt Volt By SPV + 0.7				14.5
	Batt. CHG. Volt. by Grid	13-14.5V				13.3V
	Batt. CHG. Current. by Grid	3-12A				10A
	Batt. CHG. Volt. by SPV	13.5-15V				13.8V
	Batt. CHG. Current. by SPV	5-24V				18V
	Grid Charger Reconnect	Enable /Disable				Disable
	Output Voltage Low Cut	170-190V				180V
	Output Voltage High Cut	250-260V				255V
Output	Voltage (Ph-Ph)	380V/400V ±1% (3phase 4 wire)				
	Load Current	5.8A	11.6A	17.4A	23.2A	
	Efficiency (AC - AC)	>90%@Full Load				
	Frequency	50Hz				
	Waveform	Pure Sine Wave				
	Transient Response	<8 (10%~90% Linear Load)				
	Voltage Harmonics	<3% Linear Load				
	Overload Capacity	100 to 110%-10 Min., 110 to 120%-2 Min.; 120 to 150%-30 Sec; 150 to 200%-2 Sec; 200 to 300%-1sec.; 300 to 400%-250msec., >400%-20-30msec				
	Crest Factor	3:1				
	Voltage Harmonics	±1%				
	Frequency Regulation	±0.05Hz				
	Connection Type	Terminal Block				
	Alarm	Battery Low, battery High, Overload				
Indication	LED	#UPS ON #Mains Chg. #Overload R,Y,B #Output High/Low R,Y,B #Battery High/Low #SPV Chg. ON #SPV High/Low #Chg. Overheat #AC Input High/Low R,Y,B #FAULT				
	LCD (20*4)	#Input Voltage & Freq. R,Y,B #Output Voltage, Freq. & Load% R,Y,B # Battery Voltage #Charging Current #Solar voltage, Solar Current, Solar Watt, #Working & Fault Status				
Protect ions	Parameters	#Output Overvoltage/Undervoltage, #Overload, #Output Shortcircuit, #Battery Overvoltage/undervoltage #SPV Under Voltage/ Over Voltage #Input Under Voltage/Over Voltage				
Miscellane ous	Transfer Time	0 msec				
	Extended Battery Charging	Optional				
	Caster Wheels	Yes				
Environ mental	Operating Environment	0-50° C				
	Operating Relative Humidity	(5%-95%) Non-condensed				
	Storage Environment	0-75°C				
	Storage Relative Humidity	0-95%				
	Degree of Protection	IP20				
	Remote Monitoring	Ethernet (Optional)				
	Dimension (LXWXH) Inch	23x13x26	30x16x27		38x26x35	

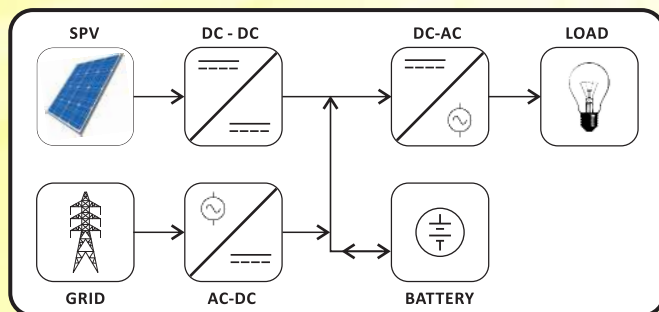
*Specification are subject to change without prior notice due to constant improvement in design & technology.

STAR Online Solar PCU

Online Solar PCU

“3 Phase, Zero Changeover
for Heavy Loads”

Available in
25-120kVA



FEATURES

- ➔ Upto 30% more Efficient because of rMPPT Charge Controller.
- ➔ Short Circuit, Input Under/Over Voltage Protection.
- ➔ Advance DSP based Design Pure Sine Wave.
- ➔ User Configurable Parameters.
- ➔ Lightning, Surge Protection by SPD.
- ➔ Ethernet based Monitoring.
- ➔ Intelligent Charge Sharing.

Working Mode

Solar/Grid/Battery
or
Solar/Battery/Grid

Application

Hospital



School



Industries



Home



Petrol Pump



Bank



STAR ONLINE PCU 25-40KVA (3Ph in 1Ph out)

Power Rating	25kVA/360V	30kVA/360V	40kVA/360V
Input			
Voltage Range	400V± 20% Three phase four wire		
Frequency	50 Hz ± 10%		
Power Factor	0.94		
Charger Topology	Buck		
Connection Type	Terminal Block		
Solar			
K watt	25	30	40
Voc (min-max)	540-810		
Vmp	430-730		
Configuration 72 Cell	5 string of 16 panel	6 string of 16 panel	8 string of 16 panel
switching devices	IGBT		
switching freq.	16KHZ		
charge controller	One		
Charger Topology	Buck		
Type of Charger	PWM with MPPT		
Output			
Voltage	220V/ 230V ± 1%		
Load Current	86.9A	104.3A	145A
Efficiency(AC to AC)	>90% @ Full Load		
Frequency	50 Hz		
Waveform	Pure Sine Wave		
Transient Response	<8 (10%~90% Linear Load)		
Voltage Harmonics	< 3 % (Linear load)		
Overload Capacity	100- 110%@10 Min, 110 -120%@2 Min; 120-150%@30s; 150- 200%@ 2s; 200- 300% @1s; 300-400%@250ms; >400%@20ms		
Crest Factor	3:1		
Voltage Regulation	± 1%		
Frequency Regulation	± 0.05 Hz		
Connection Type	Terminal Block		
Audible warning			
Alarm	Battery Low, Battery High, Overload		
Indications			
LED	UPS ON # CHG ON # Input R,Y,B High / low # Output Low-High # Overload # Fault # Batt. Low/High # SPV Low/High # SPV CHG ON #		
LCD (20*4)	Output Voltage, Load & Freq. # Battery Voltage # Charging Current # Input Voltage, Freq R,Y,B # Solar Voltage # Solar Current # Solar Watt # Working Status		
Protections			
Parameters	# Output Overvoltage/Undervoltage # Overload # Output Short Circuit # Battery Overvoltage/Undervoltage #Input Overvoltage/Undervoltage		
Miscellaneous			
Transfer Time	0 msec		
Extended Battery Charging	Optional		
Caster wheels	Yes		
Environmental			
Operating Environment	0-50 °C		
Operating Relative Humidity	5 - 95 % (Non-condensed)		
Storage Environment	0-75 °C		
Storage Relative Humidity	0-95%		
Degree of Protection	IP 20		
Remote Monitoring	Ethernet (Optional)		
Dimension (LXWXH) Inch	38X26X35		33X34X43

*Specification are subject to change without prior notice due to constant improvement in design & technology.

STAR ONLINE PCU 30-120KVA (3Ph in 3Ph out)

Power Rating	30kVA/360V	40kVA/360V	50kVA/360V	60kVA/360V	80kVA/360V	100kVA/360V	120kVA/360V
Input							
Voltage Range	400V± 20% Three phase four wire						
Frequency	50 Hz ± 10%						
Power Factor	0.95						
Charger Topology	Buck						
Connection Type	Terminal Block						
Solar							
K watt	30	40	50	60	80	100	120
Voc (min-max)	540-810						
Vmp	430-730						
Configuration 72 Cell	6 string of 16 panel	8 string of 16 panel	10 string of 16 panel	12 string of 16 panel	16 string of 16 panel	20 string of 16 panel	24 string of 16 panel
Switching devices	IGBT						
Switching freq.	16KHZ						
No. of Charge Controller	One						
Charger Topology	Buck						
Type of Charger	PWM with MPPT						
Peak Efficiency(DC to DC)	96%						
Output							
Voltage (Ph-Ph)	380/ 400V/415V ± 1% Configurable by LCD Display						
Load Current Per Phase	34.8A	46.3A	57.9A	69.5A	92.75A	115.9A	139A
Efficiency(AC to AC)	>88% @ Full Load				>90% @ Full Load		
Frequency	50 Hz						
Waveform	Pure Sine Wave						
Transient Response	<8 (10%~90% Linear Load)						
Voltage Harmonics	< 3 % (Linear load)						
Overload Capacity	100- 110%@10 Min, 110 -120%@2 Min; 120-150%@30s; 150- 200%@ 2s; 200- 300% @1s; 300-400%@250ms; >400%@20ms						
Crest Factor	3:1						
Voltage Regulation	± 1%						
Frequency Regulation	± 0.05 Hz						
Connection Type	Terminal Block						
Audible warning							
Alarm	Battery Low, Battery High, Overload						
Indications							
LED	UPS On #Mains Chg. # Battery High / Low # Overload R,Y,B # Output High/Low R,Y,B # AC Input High / Low R,Y,B # SPV Charging ON # CHG. Overheat # SPV High/ Low						
LCD (20*4)	#Input Voltage & Freq. R,Y,B # Output Voltage, Freq. & Load % R,Y,B # Battery Voltage # Charging Current # Solar Voltage, Solar Current, Solar Watt # Working Status						
Protections							
Parameters	#Input Overvoltage/Undervoltage # Overload # Output Short Circuit # Battery Overvoltage #Input Overvoltage/Undervoltage.						
Miscellaneous							
Transfer Time	0 msec						
Extended Battery Charging	Optional						
Caster wheels	Yes						
Environmental							
Operating Environment	0-50 °C						
Operating Relative Humidity	5 - 95 % (Non-condensed)						
Storage Environment	0-75 °C						
Storage Relative Humidity	0-95%						
Degree of Protection	IP 20						
Remote Monitoring	Ethernet (Optional)						
Dimension (LXWXH) Inch	38X26X35	33X34X43			49X34X69		

*Specification are subject to change without prior notice due to constant improvement in design & technology.

rMPPT™ SOLAR CHARGE CONTROLLER

“Convert your Higher Rating Inverter
into Solar Inverter”

Available in
12V/10A to 240V/60A



FEATURES

- ➔ Save Money with UTL rMPPT Technology.
- ➔ Protection from Battery Over Voltage and Current.
- ➔ Protection from load short circuit to keep your system safe in lower rating.
- ➔ Multiple charging stages to maintain battery gravity.
- ➔ Remove build-up sulphate to increase battery life.
- ➔ Run DC Load with UTL Solar Charge Controller in lower rating only.
- ➔ Protection from reverse flow of current from battery to panel.
- ➔ Lightning and surge protections.

rMPPT SOLAR CHARGE CONTROLLER

Electrical	Technology		MPPT/PWM		
	Precise Control		Micro Controller Based		
	Switching Device		MOSFET		
	Efficiency		93%		
	Features		Dusk to Dawn / Parallel Load		
	Model		MSCC 1210	MSCC 1220	MSCC 2410
	Solar (SPV)	SPV (Pmax)	150W	120W II 120W	250W
		SPVmax (Voc)	22.5V	22.5V	45V
		Operating Range	18V-22V	18V-22V	36V-44V
		Low Cut	12V±1V	12V±1V	24V±1V
		Low Cut Recovery	17±1V	17±1V	34±1V
	Battery	Battery Nominal Voltage	12V	12V	24V
		Bulk/Boost Voltage	14.5V±0.2V	14.5V±0.2V	29V±0.2V
		Float/Trickle Voltage	13.5V±0.2V	13.5V±0.2V	27V±0.2V
		Equalize Voltage	15V±0.2V	15V±0.2V	30V±0.2V
		Equalize Period	28 Days	28 Days	28 Days
		Charging Current	10A	20A	10A
		Battery Low Alarm	<11.2V±0.2V	<11.2V±0.2V	<22.4V±0.2V
	Load	Max. Load Current	10A	10A	10A
		Battery Low Load Disconnect	10.8V±0.2V	10.8V±0.2V	21.6V±0.2V
		Battery Low Load Reconnect	12.6V±0.2V	12.6V±0.2V	25.2V±0.2V
		Battery High Load Disconnect	15.5V±0.2V	15.5V±0.2V	31V±0.2V
		Battery High Load Reconnect	14.5V±0.2V	14.5V±0.2V	29V±0.2V
	Dusk to Dawn (Optional)	DC Load ON	≤ 0.9V of SPV	≤ 0.9V of SPV	≤ 1.8V of SPV
		DC Load OFF	≥ 1.9V of SPV	≥ 1.9V of SPV	≥ 3.8V of SPV
Protections	Over Charging Current		Provided		
	Over Charging Voltage		Provided		
	SPV Reverse Polarity		Provided		
	Battery Reverse Polarity		Provided		
	Output Short Circuit		Provided		
	Overload		Provided		
	Reverse Current Flow at Night		Provided		
Indications & Alarms	LED Parameters	SPV ON	Green		
		Charge ON	Green		
		Battery Full	Green		
		Battery Medium	Yellow		
		Battery Low	Red		
		Over Load	Red		
	Buzzer/Alarm		Battery Low Load Disconnect		
Overload Conditions	Load %	100%	Continuous		
		101% - 120%	1min. OFF / 10min. ON		
		121% - 150%	1min. OFF / 30 Sec. ON		
		151% - 200%	1min. OFF / 2 Sec. ON		
		>200%	1min. OFF / 0.5 Sec. ON		
Physical	Cabinet Type		Metallic		
	Cabinet Dimension, L x W x H		135X130X75 (mm)		
	Weight		0.55Kg		
	Cabinet Color		Gray		
	Placement		Wall Mounted		
Environmental			Indoor		
	Operation Temperature		0°C to 50°C		
	Storage Temperature		-10°C to 70°C		
	Max. Relative Humidity (Non Conditioning)		5% to 95%		
		Ingress Protection	IP-20		

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rMPPT SOLAR CHARGE CONTROLLER

Technology		MPPT/PWM						
Precise Control		Micro Controller Based						
Switching Device		Power MOSFET						
Electrical								
Model		MSCC 1230	MSCC 1240	MSCC 2420	MSCC 2430	MSCC 2440	MSCC 4810	MSCC 4820
Solar (SPV)	SPV (Pmax)	400W	500W	500W	750W	1KW	500W	1KW
	SPVmax (Voc)	22.5V	22.5V	45V	45V	45V	90V	90V
	Operating Range	18V-22V	18V-22V	31V-44V	31V-44V	31V-44V	72V-89V	72V-89V
	Low Cut	12.3V±0.2V	12.3V±0.2V	22.5V±0.2V	22.5V±0.2V	22.5V±0.2V	49.2V±0.2V	49.2V±0.2V
	Low Cut Recovery	17V±0.2V	17V±0.2V	30V±0.2V	30V±0.2V	30V±0.2V	68V±0.2V	68V±0.2V
Battery	Nominal Voltage	12V	12V	24V	24V	24V	48V	48V
	Bulk/Boost	14.5V±0.2V	14.5V±0.2V	29V±0.2V	29V±0.2V	29V±0.2V	58V±0.2V	58V±0.2V
	Float/Trickel	13.5V±0.2V	13.5V±0.2V	27V±0.2V	27V±0.2V	27V±0.2V	54V±0.2V	54V±0.2V
	Equalize Voltage	15V±0.2V	15V±0.2V	30V±0.2V	30V±0.2V	30V±0.2V	60V±0.2V	60V±0.2V
	Equalize Period	28Days	28Days	28Days	28Days	28Days	28Days	28Days
	Charging Current	30A	40A	20A	30A	40A	10A	20A
		Protections						
Over Charging Current		Provided						
Over Charging Voltage		Provided						
SPV Reverse Polarity		Provided						
Reverse Current Flow at Night		Provided						
		Display & Indication						
LED Parameters	SPV ON	Green						
	Charger ON	Green						
	Battery Full	Green						
	Battery Low	RED						
LCD Parameters (*Optional*)		SPV Voltage						
		SPV Current						
		Battery Voltage						
		Battery Current						
		Physical						
LCD		N/A	16x1(Optional)	N/A	16x1(Optional)	16x1(Optional)	16x1(Optional)	16x1(Optional)
Cabinet Type		Plastic	Metallic	Plastic	Metallic	Metallic	Metallic	Metallic
Dimension (L x W x H) (mm)		180x220x85	220x240x150	180x220x85	220x240x150	220x240x150	220x240x150	220x240x150
Weight		2Kg	3.5Kg	2Kg	3.5Kg	3.5Kg	3.5Kg	3.5Kg
Cabinet Color		N/A	Seimens Gray	N/A	Seimens Gray	Seimens Gray	Seimens Gray	Seimens Gray
Placement		Horizontal						
		Indoor						
		Environmental						
Operating Temperature		0°C to 50°C						
Storage Temperature		-10°C to 70°C						
Max. Relative Humidity (Non Cond.)		5% to 95%						
Ingress Protection		IP-20						

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rMPPT SOLAR CHARGE CONTROLLER

Technology		MPPT/PWM											
Precise Control		Micro Controller Based											
Switching Device		IGBT											
Efficiency		>95%											
Electrical													
Model		MSCC 4830	MSCC 4840	MSCC 4850	MSCC 4860	MSCC 9630	MSCC 9640	MSCC 9650	MSCC 9660	MSCC 12030	MSCC 12040	MSCC 12050	MSCC 12060
Solar (SPV)	SPV (Pmax)	1.5KW	2KW	2.5KW	3KW	3KW	4KW	5KW	6KW	3.5KW	5KW	6KW	7.5KW
	SPVmax (Voc)	180V	180V	180V	180V	360V	360V	360V	360V	450V	450V	450V	450V
	Operating Range	68V-176V	68V-176V	68V-176V	68V-176V	136V-352V	136V-352V	136V-352V	136V-352V	170V-440V	170V-440V	170V-440V	170V-440V
	Low Cut	48V±1V	48V±1V	48V±1V	48V±1V	96V±1V	96V±1V	96V±1V	96V±1V	120V±1V	120V±1V	120V±1V	120V±1V
	Low Cut Recovery	68V±1V	68V±1V	68V±1V	68V±1V	136V±1V	136V±1V	136V±1V	136V±1V	170V±1V	170V±1V	170V±1V	170V±1V
	High Cut	180V±1V	180V±1V	180V±1V	180V±1V	360V±1V	360V±1V	360V±1V	360V±1V	450V±1V	450V±1V	450V±1V	450V±1V
	High Cut Recovery	176V±1V	176V±1V	176V±1V	176V±1V	352V±1V	352V±1V	352V±1V	352V±1V	440V±1V	440V±1V	440V±1V	440V±1V
Battery	Nominal Voltage	48V	48V	48V	48V	96V	96V	96V	96V	120V	120V	120V	120V
	Charging Current	30A	40A	50A	60A	30A	40A	50A	60A	30A	40A	50A	60A
	Bulk/Boost Voltage	58V±1V	58V±1V	58V±1V	58V±1V	116V±1V	116V±1V	116V±1V	116V±1V	145V±1V	145V±1V	145V±1V	145V±1V
	Absorption Voltage	57.6V±1V	57.6V±1V	57.6V±1V	57.6V±1V	115.2V±1V	115.2V±1V	115.2V±1V	115.2V±1V	144V±1V	144V±1V	144V±1V	144V±1V
	Float/Trickel	54V±1V	54V±1V	54V±1V	54V±1V	108V±1V	108V±1V	108V±1V	108V±1V	135V±1V	135V±1V	135V±1V	135V±1V
	Equalize Voltage	60V±1V	60V±1V	60V±1V	60V±1V	120V±1V	120V±1V	120V±1V	120V±1V	150V±1V	150V±1V	150V±1V	150V±1V
	Equalize Period	28Days	28Days	28Days	28Days	28Days	28Days	28Days	28Days	28Days	28Days	28Days	28Days
Protection													
Over Charging Current		Provided											
Over Charging Voltage		Provided											
SPV High Cut		Provided											
Reverse Current Flow at Night		Provided											
Lightening / Surge Protection		Provided											
Display & Indication													
LED Parameters	SPV ON	GREEN											
	Charger ON	GREEN											
	Battery Full	GREEN											
	Battery Low	RED											
	SPV(Low/High) Cut	RED											
LCD Parameters		SPV Voltage											
		SPV Current											
		Battery Voltage											
		Battery Current											
Physical													
LCD		16x1											
Cabinet Type		Metallic											
Dimension (L x W x H) (mm)		355 x 332 x 230											
Weight		8.7Kg											
Cabinet Color		Black											
Placement		Horizontal											
		Indoor											
Environmental													
Operating Temperature		0°C to 50°C											
Storage Temperature		-10°C to 70°C											
Max. Relative Humidity (Non Cond.)		5% to 95%											
Ingress Protection		IP-21											

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rMPPT SOLAR CHARGE CONTROLLER

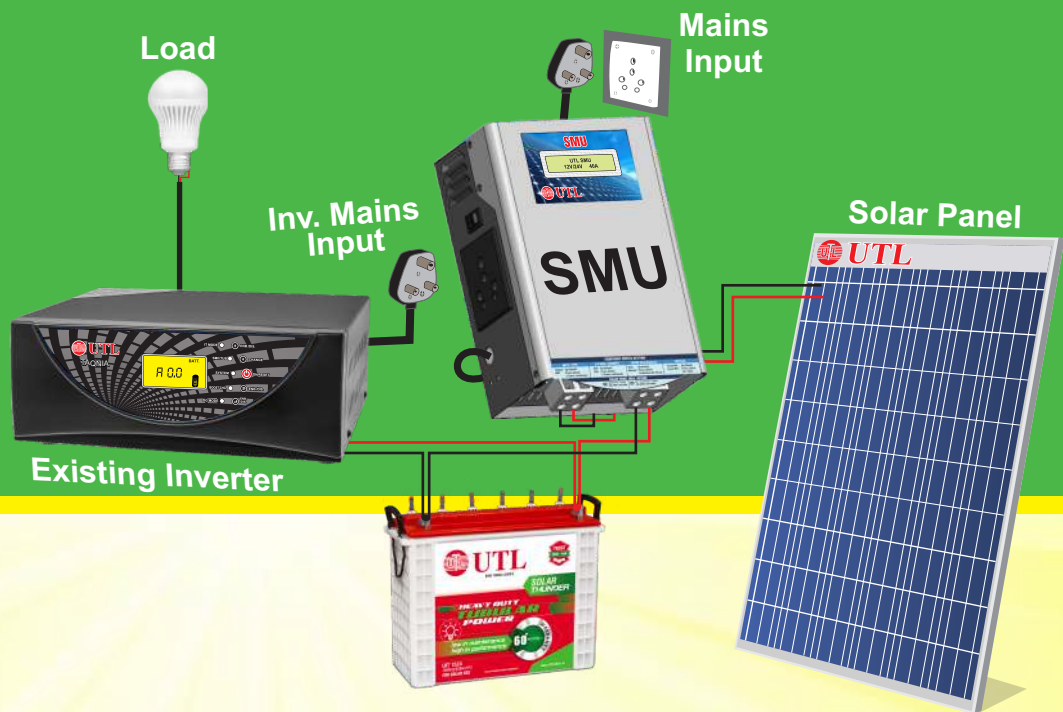
Technology		MPPT/PWM											
Precise Control		Micro Controller Based											
Switching Device		IGBT											
Efficiency		>95%											
Electrical													
Model		MSCC 18030	MSCC 18040	MSCC 18050	MSCC 18060	MSCC 19230	MSCC 19240	MSCC 19250	MSCC 19260	MSCC 24030	MSCC 24040	MSCC 24050	MSCC 24060
Solar (SPV)	SPV (Pmax)	5.5KW	7.5KW	9KW	11KW	6KW	8KW	10KW	12KW	7.5KW	10KW	12KW	15KW
	SPVmax (Voc)	450V	450V	450V	450V	450V	450V	450V	450V	450V	450V	450V	450V
	Operating Range	255V-449V	255V-449V	255V-449V	255V-449V	272V-449V	272V-449V	272V-449V	272V-449V	340V-449V	340V-449V	340V-449V	340V-449V
	Low Cut	180V±1V	180V±1V	180V±1V	180V±1V	192V±1V	192V±1V	192V±1V	192V±1V	240V±1V	240V±1V	240V±1V	240V±1V
	Low Cut Recovery	255V±1V	255V±1V	255V±1V	255V±1V	272V±1V	272V±1V	272V±1V	272V±1V	340V±1V	340V±1V	340V±1V	340V±1V
	High Cut	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	High Cut Recovery	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Battery	Nominal Voltage	180V	180V	180V	180V	192V	192V	192V	192V	240V	240V	240V	240V
	Charging Current	30A	40A	50A	60A	30A	40A	50A	60A	30A	40A	50A	60A
	Bulk/Boost Voltage	217.5V±1V	217.5V±1V	217.5V±1V	217.5V±1V	232V±1V	232V±1V	232V±1V	232V±1V	290V±1V	290V±1V	290V±1V	290V±1V
	Absorption Voltage	216V±1V	216V±1V	216V±1V	216V±1V	230.4V±1V	230.4V±1V	230.4V±1V	230.4V±1V	288V±1V	288V±1V	288V±1V	288V±1V
	Float/Trickel	202.5V±1V	202.5V±1V	202.5V±1V	202.5V±1V	216V±1V	216V±1V	216V±1V	216V±1V	270V±1V	270V±1V	270V±1V	270V±1V
	Equalize Voltage	225V±1V	225V±1V	225V±1V	225V±1V	240V±1V	240V±1V	240V±1V	240V±1V	300V±1V	300V±1V	300V±1V	300V±1V
	Equalize Period	28 Days	28 Days	28 Days	28 Days	28 Days	28 Days	28 Days	28 Days	28 Days	28 Days	28 Days	28 Days
Protection													
Over Charging Current		Provided											
Over Charging Voltage		Provided											
SPV Reverse Polarity		Provided											
Reverse Current Flow at Night		Provided											
Lightening / Surge Protection		Provided											
Display & Indication													
LED Parameters	SPV ON	GREEN											
	Charger ON	GREEN											
	Battery Full	GREEN											
	Battery Low	RED											
	SPV(Low/High) Cut	RED											
LCD Parameters		SPV Voltage											
		SPV Current											
		Battery Voltage											
		Battery Current											
Physical													
LCD		16x1											
Cabinet Type		Metallic											
Dimension (L x W x H) (mm)		355 x 332 x 230											
Weight		8.7Kg										10Kg	
Cabinet Color		Black											
Placement		Horizontal											
		Indoor											
Environmental													
Operating Temperature		0°C to 50°C											
Storage Temperature		-10°C to 70°C											
Max. Relative Humidity (Non Cond.)		5% to 95%											
Ingress Protection		IP-21											

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SOLAR MANAGEMENT UNIT

“Convert your Home Inverter into Solar Inverter”

Available in
12V/24V/40A



FEATURES

- ➔ High speed and high performance micro-controller.
- ➔ High reliability with longer operational life.
- ➔ Inbuilt protection to avoid battery undercharge and over-charge.
- ➔ Inbuilt PWM Technology Charge Controller.
- ➔ Automatic voltage selection for 12V or 24V.
- ➔ Solar Prioritization.
- ➔ Compact design with wall mounting.
- ➔ Eco friendly.

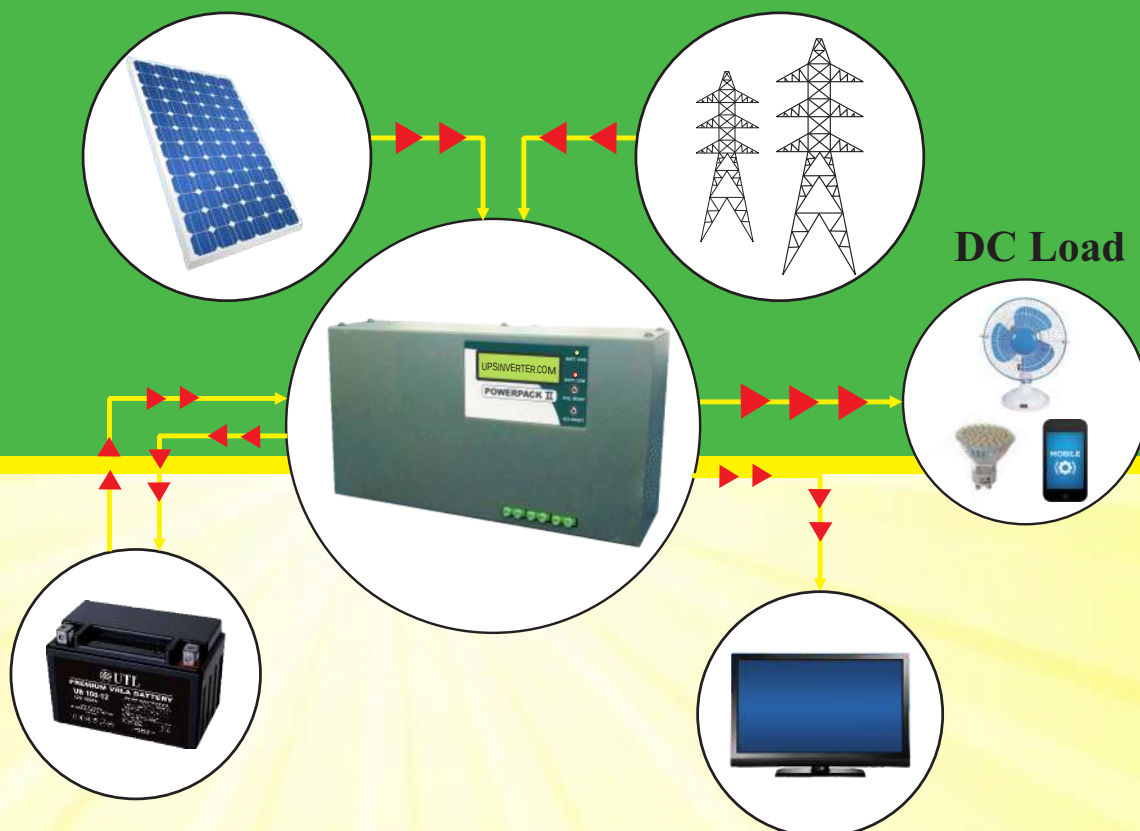
SOLAR MANAGEMENT UNIT

General	
Model	SMU122440
Operating temperature	0°C to 60°C
Storage temperature	-20°C to 60°C
Battery Type	Tubular/SMF, Battery 12V/24V
Battery (Ah)	100Ah - 180Ah
Battery charging regulation method	4 Stage PWM (Bulk/Absorption/Float/Equalize)
Solar Module size (Max)	12V, 20A : Upto 300 W
	24V, 20A : Upto 500 W
	12V, 40A : Upto 500 W
	24V, 40A : Upto 1000 W
Electrical	
Nominal system Voltage	12/24V DC
Charging current (Solar)	40A/20A
Charge controller efficiency	>95%
Idle consumption	<20mA
Operating Solar input Voltage(Voc)	22.5V/45V
Max. Solar input Voltage(Voc)±2V	25V/45V
Min. Solar input Voltage(Voc) @ start-up	15V/30V ± 2%
Solar panel recovery Voltage	17V/31V ± 2%
Max. Solar Current	40A By Default
Efficiency	> 95%
Battery set points @ 25°C	
Absorption voltage Tubular Battery	14.2V/28.4V ± 2%
Absorption voltage SMF Battery	13.7V/27.4V ± 2%
Absorption Duration	3hr
Float Voltage Tubular Battery	14V/28V ± 2%
Float Voltage SMF Battery	13.5V/27.0V ± 2%
Bulk Voltage Tubular Battery	14.6V/29.2V ± 2%
Equalize Voltage	14.9V/29.8V ± 2%
Equalize Duration	3hr
Equalize calendar	28 days
Mains reconnect when Solar not Present	At any Batt. Voltage
Mains reconnect when insufficient Solar Power	≤ 11.8V/23.6V ± 2%
Mains disconnect when sufficient Solar Power For Tubular	≥ 13.8V/27.6V ± 2%
Mains disconnect when sufficient Solar Power For SMF	13.7V/27.4V ± 2%
Display Parameters	Protections
1. Batt. Voltage, Batt. Current, Batt. Type	1. Battery Reverse Polarity
2. Solar Voltage, Solar Current	2. Batt. Reverse Current
3. Mode Selection	3. Over Current of SPV
4. Solar Status: High, Low, Overload, Overheat	4. Solar High Voltage
5. Saving- kWh	5. SPV Reverse Polarity
6. Mains Present, low, High, Absent	6. Load Short Circuit through AC Fuse
7. Max. PV Current	7. Solar Low Voltage
	8. Over Temperature
Physical	
Ingress Protection	IP-20
Fixing	Wall Mounted
Weight (Kg)	1.5
Dimension (LXWXH) Inch	9X6X3

*Specification are subject to change without prior notice due to constant improvement in design & technology.

SOLAR POWERPACK-II

DC Home Lighting System



FEATURES

- ➔ PV charging efficiency >90%.
- ➔ Self consumption of system <20mA.
- ➔ Temperature compensation for charging/discharging.
- ➔ Deep discharge protection.
- ➔ Solar priority over grid power.
- ➔ Sleep mode feature.
- ➔ Visual display metering.

SOLAR POWERPACK-II

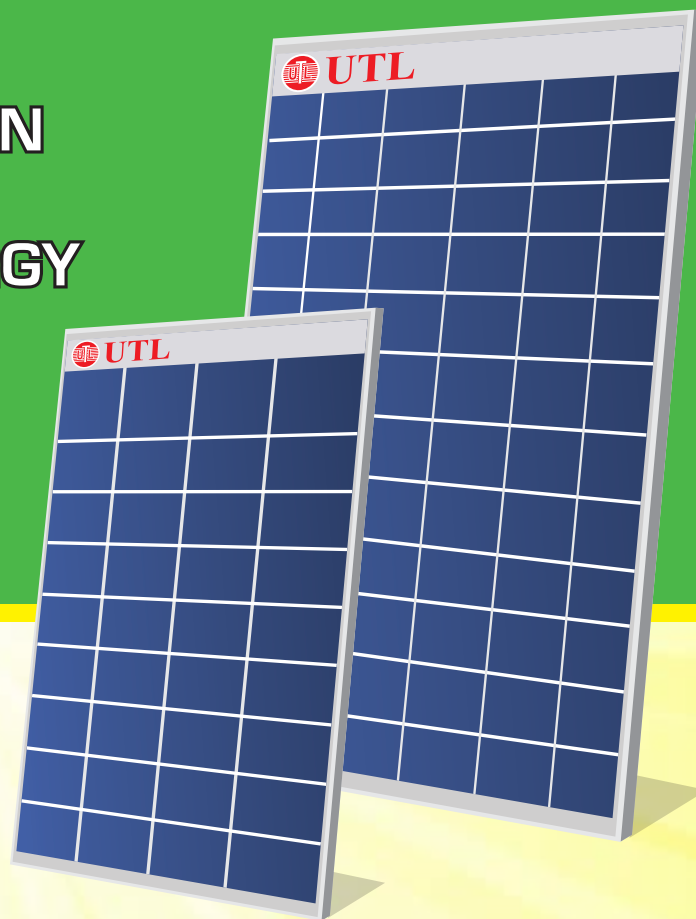
INPUT	Solar	Voc max	25V
		MPPT Volt., Vmp	16.4V
		Max. Panel Wattage	150W
	Mains	AC I/P Volt.	220V+/-10%
		Max. Power	150W
OUTPUT	Battery	Nominal Batt Volt.	12V
		Batt. Charging Current(Max)	10A
		Ripple Volt.	50mv
	Load	Load volt	12V
		Max. load current	3.8A
	Mobile charger	Voltage	5V
		Current	1A
Visual Display on LCD	Solar Voltage, Solar Current		
	Battery Voltage, Battery Percentage (%), Battery Current, Load Voltage, Load Current, Mains Status, Charging Stage with Solar, Load Status.		
Temperature Compensation	Battery Charging		Yes
Load Feature	LVD, LVR, HVD, HVR		Yes
Data Logging	By USB		USB Interface (Optional)
Protections	Battery Reverse		Yes
	Batt. high volt. and high current		Yes
	Solar high voltage		Yes
	Solar Reverse Polarity		Yes
	Deep discharge		Yes
	Protection against battery (night time leakage current from PV)		Yes
	Solar Charging Current limit		Yes
	Load short circuit and overload		Yes
LED status	LED1(Charging ON)	Glow Solid(GREEN)	
	LED2(Battery Low)	Glow Solid(RED)	
Transient and Surge protection			Yes
Withstand Volt.			1.5KV
Efficiency(at full Load)			>90%
Working Temperature			-10°C to 50°C
Control algorithm			MPPT

*Specification are subject to change without prior notice due to constant improvement in design & technology.

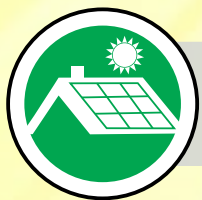
SOLAR PANEL

**CLEAN, GREEN
&
INFINITE ENERGY**

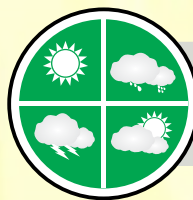
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