

WIDEST RANGE OF **SOLAR PRODUCTS**

For your home & business



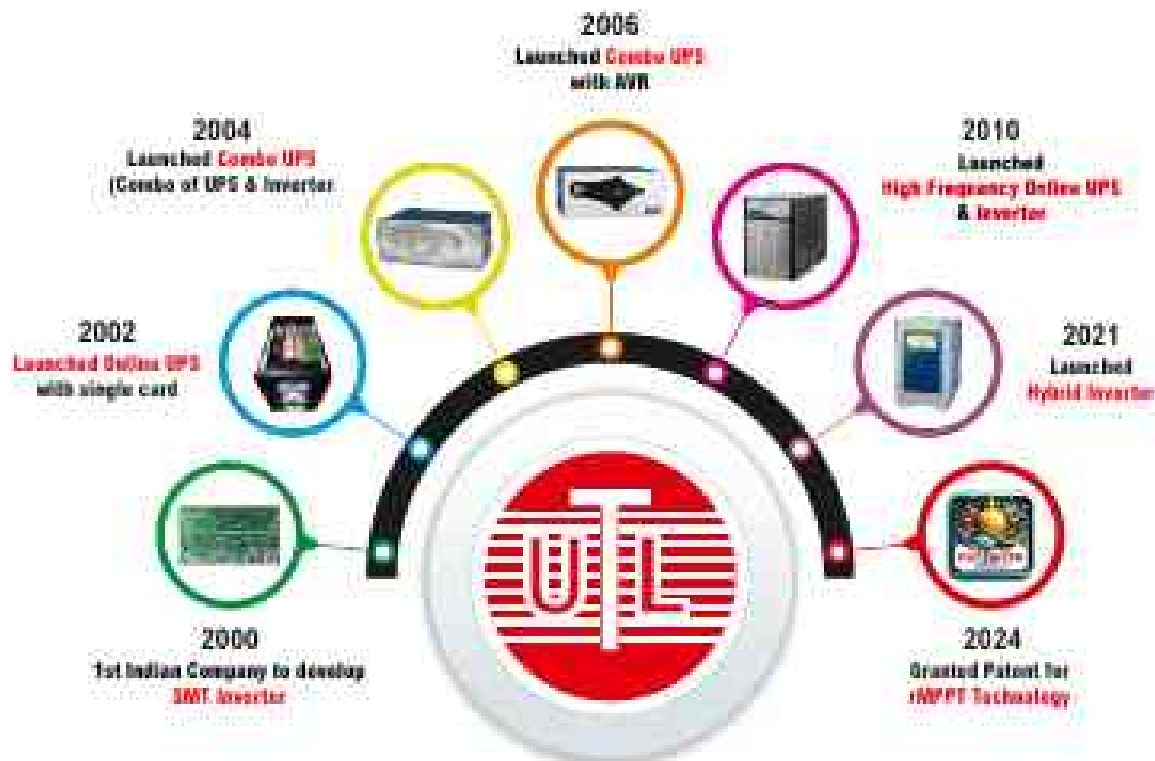
Inverters | Batteries | Solar PCUs | Online UPSs | EV Chargers |
Lithium Batteries | Solar Inverters | Solar Panels



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 65+ 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 2024-2025

4

Manufacturing Units

29

Years Old Brand

65+

Strong R&D Team

602+

India Wide Service Engineer

1100+

"Shoppes" Franchisee in INDIA

725+

Distributor in INDIA

5546+

Dealers in INDIA

5000000+

Satisfied UTL Consumers

15.4 Bn

UTL Turnover

* As on 30 June 2025

Manufacturing Energetic Excellence

SOLAR PANEL PLANT, NOIDA, UP



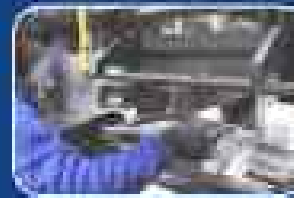
Scan and
View Plant Video



BATTERY PLANT, BAWAL, HARYANA



Scan and
View Plant Video



INVERTER PLANT, PARWANOO, HP



Scan and
View Plant Video



HELIAC (Solar Home PCU)

"Cost Effective PCU Compatible
with Tubular Batteries."

Model Available
HL1050 to HL4000



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, BH, S.Ckt, I/P HV & LV, OHT.
- Compatible with DG as an Input Source.
- Compatible with IT Load.
- Compatible with LITHIUM, Gel & Tubular Batteries.
- Priority Selection - PCU, Smart & Hybrid for Saving Energy and Money.



Inbuilt Solar
Charge Controller



Multicolor
LCD Display



Preference to
Solar Power
over Grid Power

SUN PLUS (Solar Home PCU)

"Affordable Yet, Very Reliable"

**Model Available
SP 960 to SP 1860**

**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, BH, S.Ckt, U/P HV& LV, OHT.
- 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.



**Inbuilt Solar
Charge Controller**



**Priority Mode Selection
as Solar PCU**



**Preference to
Solar Power
over Grid Power**



SUN PLUS (Solar Home PCU)

Parameters		Rating			
Model No.		SUN PLUS 800	SUN PLUS 800S	SUN PLUS 1400	SUN PLUS 1800
System Rating		6750W	8700W	10750W	14750W
Operating DC Voltage		12V			
Switching Element		MOSFET			
Charger Topology		Two-Stage			
Max. Battery Capacity		100Ah			
Operating Mode (SMA/MPPT/CCV/VRB)		MPPT/VRB			
Parameters (Grid)		Default Value			
Nominal Grid Voltage		230V/10			
Nominal Frequency		50Hz			
Battery Charging Method 4-Stage		6-Step Constant/Float/Equalize			
Grid - Battery Charging Voltage (TUB) (Default mode)	Buon	14.2V $\pm$ 0.2V (Each battery)			
	Float	13.8V $\pm$ 0.2V (Each battery)			
Grid - Battery Charging Voltage (SMF)	Buon	13.5V $\pm$ 0.2V (Each battery)			
	Float	13.2V $\pm$ 0.2V (Each battery)			
Grid - Battery Charging Voltage (Equalize)		After 30 days			
Grid - Charging Current	Default	Boost Mode			
	Normal Mode	0.5A/1A $\times$ 24			
	Boost Current	100A			
Grid Reconnect @ Battery Voltage		11.8V $\pm$ 0.2V (Each battery)			
Grid Low Cut Voltage		17.0V $\pm$ 10V			
Grid Low Cut Recovery		18.0V $\pm$ 10V			
Grid High C/L Voltage		20.0V $\pm$ 10V			
Grid High C/L Recovery		22.0V $\pm$ 10V			
Grid Low Cut Voltage		10.0V $\pm$ 10V			
Grid Low Cut Recovery		11.0V $\pm$ 10V			
Grid High Cut Voltage		20.0V $\pm$ 10V			
Grid High C/L Recovery		22.0V $\pm$ 10V			
Charge Over (Battery to Main)		None			
Charge Over (Main to Battery)		+15min			
Parameters (Inverter)		10			
Output Phase		Single Phase			
Nominal output voltage		240V $\pm$ 10% RMS			
Nominal Frequency		50Hz $\pm$ 1%			
Max. Output Current		2.5A	2.5A	2.5A	4.2A
Output waveform		Modified Sine wave			
Battery Low Support		11.8V $\pm$ 0.2V (Each battery)			
Battery Low Cut		11.2V $\pm$ 0.2V (Each battery)			
Battery High Cut		17.0 $\pm$ 0.2V (Each battery)			
Typical Efficiency		+92%	+93%	+93%	+93%
Over Load Capacity	IT Mode Charge	+100% After 10 min delay (Auto Alarm, 5 Time Auto Reset, 40 Time Shut Down)			
	IT Mode Discharge	+150% After 30 min delay (Auto Alarm) 1st Time Shut Down +100% Output (Auto Down)			
Protection		Overload, Battery Low, Battery High, Output Short-Circ, Battery Reverse (False Battery), Over Heating (90°C $\pm$ 10°C, 50V High), LP (LV, HP LV)			
LED Indication		System ON, IT Mode, SMPT118, Boost On, Grid On, Boost/Standby, Main Status, Overload, Grid off, Inverter ON, Battery Status, SPV On, Fault			
Shutdown		System ON, IT Mode, SMPT118, Boost On, Grid On (Tribe/Discharge)			
Parameters (Inverter)		NOT SET			
Switching Element		IGBT			
Type of Charger		PWM			
MPV Charging Voltage (TUB)	Buon	14.0V $\pm$ 0.2V (Each battery)			
	Float	13.6V $\pm$ 0.2V (Each battery)			
MPV Charging Voltage (SMF)	Buon	13.3V $\pm$ 0.2V (Each battery)			
	Float	13.0V $\pm$ 0.2V (Each battery)			
Max. SPV Current		25A	50A	50A	50A
Efficiency		+90%			
Input Voltage Range (Min-Max) Vdc		17V-25V			21V-48.0V
Maximum PV Power Recommended		(100W/180W/240W) (Parallel)	(100W/180W/240W) (Parallel)	(150W/180W/240W) (Parallel)	(150W/240W/300W/360W) (Parallel)
Parameters (Environment)					
Operating Temperature		-40°C			
Cooling		Fan			
Max. Relative Humidity @ 25°C (non-Condensing)		+95%			
Noise @ 1 meter		55dB			
Standby Consumption		80W			
Weight (kg)		7.75	6.8	11	14.2
Dimension (LxWxH)		278x275x130mm		304x274x180 mm	

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

SUN PLUS PRO (Solar Home PCU)

"Affordable Yet, Very Reliable"

Model Available
SPP 920 to SPP 1420

**FEATURES**

- Inbuilt rMPPT Solar Charge Controller
- Support 12V & 24V Solar Panel with 12V System
- Battery Charging at Low Voltage (90V) Mains Input
- Compatible with IT Load
- Maintain battery health for longer life
- Modified Sine wave output
- Easy Installation & low maintenance
- Battery Charging with Multi stage (Bulk, Absorption & Float)
Auto Equalize in a month
- Protections : RBP, RSPV, OVL, BL, BH, S.Ckt, I/P HV & LV, OHT
- Priority Mode Selection- 1) Hybrid 2) Smart
For Saving Energy & Money
- Can Operated without Solar
- LED Display for Operation & Fault



Inbuilt Solar
Charge Controller



Affordable &
Easy to Install



Preference to
Solar Power
over Grid Power

SUN PLUS PRO (Solar Home PCU)

Parameter		Setting		
Product		SUN PLUS PRO SOLAR PCU		
Model No.		SUN PLUS PRO 920	SUN PLUS PRO 1000	SUN PLUS PRO 1432
System Rating		1000W	850W	1100W
Operating DC Voltage		12V		
Switching Element		MOSFET		
Charger Topology		BOOST MODE/PT		
Max. Battery Capacity		200AH		
Operating Mode (SMART/HYBRID)		HYBRID		
Parameters (Solar)		Default Value		
Switching Element		MOSFET		
Type of Charger		MPPT		
SPV Charging Voltage (TUB)	Boost	14.7V $\pm$ 0.2V (Each Battery)		
	Float	14.2V $\pm$ 0.2V (Each Battery)		
Solar Charging Current		25A $\pm$ 2A		
Maximum PV Power Recommended		1400W		
Solar PV Maximum Voltage		35-50VDC		
Efficiency		$\geq 95\%$		
Parameters (Grid)		Default Value		
Nominal Grid Voltage		230V 1 ϕ		
Nominal Frequency		50Hz		
Battery Charging Method & Stages		BULK/Absorption/T float/Equalize		
Grid - Battery Charging Voltage	Boost	14.5V $\pm$ 0.2V (Each battery)		
	Float	13.8V $\pm$ 0.2V (Each battery)		
Grid - Battery Charging Voltage (Equalize)		After 30 days		
Grid Charging Current	Normal/Boost	15A /10A/12A $\pm$ 2A		
Grid Reconnect @ Battery Voltage		11.8V $\pm$ 0.2V (Each battery)		
Grid Low Cut Voltage	IT MODE ENABLE	170V $\pm$ 10V		
Grid Low Cut Recovery		280V $\pm$ 10V		
Grid High Cut Voltage		260V $\pm$ 10V		
Grid High Cut Recovery		250V $\pm$ 10V		
Grid Low Cut Voltage	IT MODE DISABLE	80V $\pm$ 10V		
Grid Low Cut Recovery		90V $\pm$ 10V		
Grid High Cut Voltage		260V $\pm$ 10V		
Grid High Cut Recovery		270V $\pm$ 10V		
Change Over (Battery to Mains)	IT MODE ENABLE	<8ms		
Change Over (Mains to Battery)		<15ms		
Parameters (Inverter)		Default Value		
Output Phase		1 ϕ		
Nominal output voltage		120V $\pm$ 10% RMS		
Nominal Frequency		50 Hz $\pm$ 1%		
Max. Output Current		3.1A	3.6A	3.5A
Output Waveform		Modified Sinewave		
Battery Low Buffer		10.8V $\pm$ 0.2V (Each battery)		
Battery Low Cut		10.5V $\pm$ 0.2V (Each battery)		
Battery High Cut		14.5V $\pm$ 0.2V (Each battery)		
Typical Efficiency		$\geq 92\%$		
Over Load Capacity	IT Mode Enable	$\geq 100\%$ After 30 sec delay (with alarm) 3Time Auto Reset , 4th Time Shut Down		
	IT Mode Disable	$\geq 100\%$ After 30 sec delay (with alarm) 1st Time Shut Down		
Protection		Overload, Battery Low, Battery High, Output Short Ckt, Battery Reverse (fuse blown) , Over Heat @90°C $\pm$ 10°C , SPV High, SPV Reverse , UP /NO /OFF CV		
LED Indication		System ON, Grid Status, Over load/Heat , Grid chg , Batt. ON, SPV Chg, Batt. Status		
Switches		System ON, IT Mode, Hybrid , Boost Charging		
Parameters (Environment)		Default Value		
Operating Temperature		0-45°C		
Cooling		Fan		
Max. Relative Humidity @ 25°C (non Condensing)		90%		
Noise @ 1 meter		50dB		
Standard Compliance		IEB		
Weight (kg)		5.6	6.4	13.3
Dimension (LxWxH)		275X305X130mm		
		302*305*165 mm		

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SUNLION

Wall Mountable rMPPT Solar PCU
with Built-in LiFePO₄ Battery.

Model Available
SUNLION 1000 & SUNLION 1200



FEATURES

- Inbuilt rMPPT Solar Charge Controller
- Support 12V & 24V Solar Panel with 12V System
- Battery Charging at Low Voltage (90V) Mains Input
- Inbuilt Lithium LiFePo₄ Battery
- Compatible with IT Load
- Zero Battery Maintenance & Long Battery Life
- Modified Sine wave output
- Battery Charging with Multi stage (Bulk, Absorption & Float)
- Protections : RBP, RSPV, OVL, BL, BH, S.Ckt, I/P HV& LV, OHT
- Easy Installation & low maintenance
- Can Operated without Solar
- Multi Color LCD Display for Operation & Fault
- Priority Mode Selection- 1) Hybrid- 2) Smart For Saving Energy & Money



Inbuilt Solar
Charge Controller



Charging at
Low Voltage 90V



Support
12V & 24V Panels
in a 12V System

SUNLION 1000 & SUNLION 1200 (Wall Mounted rMPPT Solar PCU)

Parameter		Rating		
Product:		SUN LION SOLAR PCU		
Model No.		SUN LION 1000	SUN LION 1200	
System Rating :		800VA	1000 VA	
Operating DC Voltage		12.0V		
Switching Element		MOSFET		
Charger Topology		BOOST MOSFET		
Max. Battery Capacity (Initial LFP/Fe)		50AH / 60AH	100AH / 120Ah	
Operating Mode (SMART/HYBRID)		HYBRID		
Parameters (Solar)		Reference Ambient Range		
Switching Element :		MOSFET		
Type of Charge		MPPT		
SPV Charging Voltage :	Boost / Fast	13.0V $\pm$ 0.2V	13.0V - 14.2V	
Solar Charging Current		25A $\pm$ 2A		
Maximum PV Power Recommended		540W		
Solar PV Maximum Voltage		28V - 60V (VOC)		
Efficiency		98%		
Parameters (Grid)		Default Value		
Nominal Grid Voltage		230V 50		
Nominal Frequency :		50Hz		
Battery Charging Method 3 Stages		Bulk/Absorption/Float Equalize		
Grid - Battery Charging Voltage :	Boost/Fast	13.0V $\pm$ 0.2V	13.0V - 14.2V	
Grid Charging Current :	Normal/Boost	15A/18A $\pm$ 2A	14.0A	
Grid Recovered @ Battery Voltage		12.4V $\pm$ 0.2V	12V - 13V	
Grid Low Cut Voltage	IT MODE ENABLE	170V $\pm$ 10V		
Grid Low Cut Recovery		180V $\pm$ 10V		
Grid High Cut Voltage		200V $\pm$ 10V		
Grid High Cut Recovery		220V $\pm$ 10V		
Grid Low Cut Voltage	IT MODE DISABLE	80V $\pm$ 10V		
Grid Low Cut Recovery		90V $\pm$ 10V		
Grid High Cut Voltage		260V $\pm$ 10V		
Grid High Cut Recovery		270V $\pm$ 10V		
Charge Over (Battery to Mains)	IT MODE ENABLE	+8hrs		
Charge Over (Mains to Battery)		+15hrs		
Parameters (Inverter)				
Output Phase		1Ø		
Nominal output voltage		230V $\pm$ 10% RMS		
Nominal Frequency :		50 Hz $\pm$ 1%		
Max. Output Current		2.5A	3.1A	
Output Waveform		Modified SineWave		
Battery Low Battery		10.0V $\pm$ 0.2V	Battery Low Cut +0.3V	
Battery Low Cut		10.0V $\pm$ 0.2V	11V-12V	
Battery High Cut		14.0V $\pm$ 0.2V	14.0V - 15.0V	
Typical Efficiency		98%		
Over Load Capacity	IT Mode Disable	+100% After 30 sec delay (with Alarm) 3 Time Auto Reset ; 10th Time ShutDown		
	IT Mode Enable	+150% After 30 sec delay (with Alarm) 1st Time Shut Down		
Protection		Overload, Battery Low, Battery High, Output Short CM, Battery Reverse (DC Flow Block), Over Heat @60°C $\pm$ 10°C , SPV High, SPV Reverse , SPV LV, SPV LY		
LED Indicator		SYSTEM ON, IT MODE, HYBRID, BOOST CHG, DISABLED/ENABLE		
Switches (Mini)		System ON/OFF, UP, Down, Back, Battery LED Calibration		
Display / Multi-color		Battery Voltage, Charging Current, Grid Voltage, Grid Frequency, Output Voltage, Output Frequency, Load%, Battery Graph, BULK/ABSORB/FLT, SPV Current, Operating Mode (HYBRID)		
Parameters (Environment)				
Operating Temperature		-10-40°C		
Cooling		Fan		
Max. Relative Humidity @ 25°C (non Condensing)		95%		
Humidity @ 1 meter		5000		
Standard Compliance		PSE		
Weight (kg)		17	21.0	
Dimension (LxWxH)		180x125x107mm	180x125x107mm	

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GAMMA⁺ LION

Wall Mountable rMPPT Solar PCU
with Built-in LiFePO4 Battery.

Model Available
GAMMA⁺ 1200



FEATURES

- Inbuilt LiFePO4 Battery with Zero battery maintenance & Long battery life.
- Controller-based design Pure Sine Wave.
- Built-in rMPPT charge controller that supports 1kW panels.
- Compact design with Multi-colour LCD Display.
- Preference to Solar Power over Grid Power.
- Multi-functional smart Options Priority Selection - PCU, Smart & Hybrid for Saving Energy & Money
- 5 years warranty on both Inverter and battery



**FAST
CHARGING**



**2X
LONGER LIFE**



**ZERO
MAINTENANCE**



**5 YEARS
WARRANTY**

GAMMA+ LiON (Wall Mounted rMPPT Solar PCU)

Parameters			
Product		Solar PCU	
Model No.		Gamma+ LiON 1200	
System Rating		1000W	
Operating DC Voltage		32.6V	
Switching Element		MOSFET	
Max. Battery Capacity		88Ah, 1.28kWh (LiFePO4 (Built-in))	
Grid Charger Topology		Boost Charging Topology	
Operating Mode	SMART/PCU/MPPT	Smart mode (Default)	
Optional DG mode	Enable/Disable	Disable (Default)	
Solar Power Maximum		1000W	
Input Voltage Range (Min. - Max) Vdc		10V-100V	
Parameters (Grid)		Default Value	Variable settings Range (Each Item)
Minimal Grid Voltage		100V ±10%	
Minimal Frequency		50Hz	
Frequency Range		50-100Hz ±1Hz	
Battery Charging method / voltage		smart/constant/float	
Grid - Battery Charging Voltage	Boost/Float	11.0V±0.2V (Each Battery)	11.5V-11.8V
Grid Charging Current	Normal/Boost	11A/11A ±1A	1A -20A
Optional Grid charging	Enable/Disable	Enable	
Grid Disconnect @ Battery Voltage		13.4V ±0.2V (Each Battery)	13-13V
Grid Low Cut Voltage	IT mode Enable	170V ± 10V	
Grid Low Cut Recovery		180V ± 10V	
Grid High Cut Voltage		260V ± 10V	
Grid High Cut Recovery		220V ± 10V	
Grid Low Cut Voltage	IT mode Disable	100V ± 10V	
Grid Low Cut Recovery		110V ± 10V	
Grid High Cut Voltage		200V ± 10V	
Grid High Cut Recovery		200V ± 10V	
Charge Over (Battery to Main)	IT mode Enable/Disable	<1ms	
Charge Over (Main to Battery)	IT mode Enable	<1ms	
	IT mode Disable	<10ms	
Parameters (Inverter)			
Output Phase		1φ	
Minimal output voltage		120V	
Output voltage range		120V±8%	
Minimal Frequency		50 Hz±1%	
Max. Output Current		3.5A	
Battery Low Limit		11.0V±0.2V (Each Battery)	NA
Battery Low Cut		11.0V±0.2V (Each Battery)	13-12V
Battery High Cut		14.5±0.2V (Each Battery)	NA
Output Waveform		Sine wave	
Typical Efficiency		>82%	
Voltage Harmonic		<5% (Linear Load)	
Over Load Capacity	IT Mode Disable	>100% After 10 sec delay (with alarm) 3Time Auto Reset, 4th Time Shut Down	
	IT Mode Enable	>100% After 30 sec delay (with alarm) 1st Time Shut Down, Download, Battery Low, Battery High, Output Short Ckt, Battery Reverse (Through MOS), Over Heat @ 60°C ± 10°C, Over/Under frequency, 3/5 High, 1/3 Low, 50V High, 50V Low	
Protection		Overload, Battery Low, Battery High, Output Short Ckt, Battery Reverse (Through MOS), Over Heat @ 60°C ± 10°C, Over/Under frequency, 3/5 High, 1/3 Low, 50V High, 50V Low	
LED Indication		System Off, (IT mode, Boost-Chg., Dis mode, Grid Chg.) Enable/Disable	
Switcher (Micro)		System ON/OFF, Up, Down, Back, Enter (For LED Calibration)	
Display (Multi-color)		Battery Voltage, Charging Current, Load voltage, Load frequency, Output Voltage, Output Frequency, Load % , Battery Graph, Overheat, 50V Current, Operating Mode (HVS/PCU/SMART)	
Parameters (Solar)			
Switching Element		MOSFET	
50V Charging Voltage	Boost/Float	11.0V±0.2V (Each Battery)	11.5-11.8V
Solar Charging Current (Batteries)		10A±2A (Default)	11-22A
Battery Charging Method 3 Stages		Bulk/Absorption/Float	
Efficiency		>95%	
Parameters (Environment)			
Operating Temperature		0-50°C	
Cooling		Fan	
Max. Relative humidity @ 25°C (Non-Condensing)		95%	
Noise @ 1 meter		55dB	
Standard Compliance		IP20	
System Weight (kg)		23.5	
Dimension (LxWxH)mm		395 x 135 x 127.5	

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

GAMMA⁺ (Solar Home PCU)

"Get Two Battery Back-up in Single Battery"

Model Available
GPP1012-GPP3400

**FEATURES**

- Controller based design, Pure Sine Wave, Built in rMPPT Charge Controller.
- Multi-colour LCD Display.
- Freq:- Available - 50Hz & 60Hz.
- Charging Multi 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, BH, S.Ckt, I/P HV & LV, OHT.
- Compatible with DG as an Input Source.
- Compatible with IT Load.
- Compatible with Tubular Batteries (Lithium) .
- Priority Selection - PCU, Smart & Hybrid for Saving Energy and Money.
- Support IHP Motor in Model No 2600 and 3350.



Pure Sine Wave
Output



up to 30% More
Efficient



Priority 3 Saving Mode
Selection



GAMMA⁺ (Solar Home PCU)

Parameters		GAMMA ⁺ PCU					Nominal System Voltage (Watt-Hour)			
Model Name		SPH1011	SPH1012	SPH1013	SPH1014	SPH1015				
System Rating		1000VA	1000VA	1000VA	2000VA	2000VA				
Operating Ch. Voltage		12V		24V						
Switching Method		MPPT-DC-DC								
Charger Voltage		12V/24V/48V								
Max. Battery Capacity		200AH								
Operating Mode		Smart mode (Default)								
Default LED Status		Indicator (Default)								
Input Voltage Range (Min. / Max. Vol)		0V-50V	0V-50V	0V-100V	0V-100V					
Max Power Maximum		1000W	1000W	1000W	2000W	2000W				
Solar Panel Recommended (Min)		100W (10V-18V) 200W (18V-24V) 300W (24V-36V)	100W (10V-18V) 200W (18V-24V) 300W (24V-36V)	100W (10V-18V) 200W (18V-24V) 300W (24V-36V)	200W (18V-24V) 400W (24V-36V) 600W (36V-48V)	200W (18V-24V) 400W (24V-36V) 600W (36V-48V)				
Parameters (Max)		Default Value					Nominal System Voltage (Watt-Hour)			
Charging and Voltage		12V / 24V								
Voltage Regulation		±0.5%								
Temperature Range		-20°C to +60°C								
Battery Charging Method & Voltage		Constant Voltage / Constant Current								
Constant charging mode		12V/24V/48V								
12V - Battery Charging Voltage (V)		Fixed 13.8V/14.4V	Fixed				12V/12V			
24V - Battery Charging Voltage (V)		Fixed	14.2V ± 0.2V				12V/12V			
48V - Battery Charging Voltage (V)		Fixed	14.6V ± 0.2V				12V/12V			
12V - Battery Charging Voltage (V)		Smart / Fixed	14.2V ± 0.2V				12V/12V			
Load Charging Current		Automatic	1000W ± 5%	1000W ± 5%	1000W ± 5%		1000W			
Constant load charging		Smart / Fixed	Smart							
Load Recharging (Battery Voltage (V))		11.8V ± 0.2V					11.8V			
Load Recharging (Battery Voltage (V))		12.8V ± 0.2V					12.8V			
Load Low Cut Voltage		12.5V ± 0.2V					12.5V			
Load Low Cut Recovery		17 Min. Cycle	12.5V ± 0.2V							
Load High Cut Voltage			13.5V ± 0.2V							
Load High Cut Recovery			13.5V ± 0.2V							
Load Low Cut Voltage			12.5V ± 0.2V							
Load Low Cut Recovery		17 Min. Cycle	12.5V ± 0.2V							
Load High Cut Voltage			13.5V ± 0.2V							
Load High Cut Recovery			13.5V ± 0.2V							
Load Low Cut Voltage			12.5V ± 0.2V							
Charge Over (Max. in Battery)		17 Min. Cycle	17 Min. Cycle							
Charge Over (Max. in Battery)		17 Min. Cycle	17 Min. Cycle							
Parameters (Default)		Default Value					Nominal System Voltage (Watt-Hour)			
Output Power		1000W								
Output Voltage Range		12V/24V/48V								
Output Voltage Range		12V/24V/48V								
Output Frequency		50Hz ± 1%					50Hz/60Hz			
Max. Output Current		10A	10A	10A	10A	10A				
Battery Low Voltage (V)		11.8V ± 0.2V (Smart Battery)					Battery Low 12V/12V			
Battery Low Voltage (V)		12.8V ± 0.2V (Smart Battery)					12V/12V			
Battery Low Voltage (V)		11.8V ± 0.2V (Smart Battery)					Battery Low 12V/12V			
Battery Low Voltage (V)		11.8V ± 0.2V (Smart Battery)					11.8V			
Battery High Voltage (V)		13.5V ± 0.2V (Smart Battery)					13.5V			
Battery High Voltage (V)		13.5V ± 0.2V (Smart Battery)					13.5V			
Output Frequency		50Hz								
Output Frequency		50Hz								
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ALFA PRO⁺ SOLAR PCU

"Most Featureful Solar PCU"

**Model Available
1kVA-20kVA**

**rMPPT™ Offgrid Solar PCU
(1Ph in 1Ph out)**



FEATURES

- DSPic based Pure Sine Wave Design.
- Inbuilt in rMPPT charge controller (upto 30% more efficient).
- Maximum preference to Solar Power.
- Wi-Fi based remote monitoring & Wifi freq. Bands 2.4GHz Support & (GSM Optional).
- Wi-Fi range : 3 - 5 meters in open air without obstacles.
- Comply with IEC 61683 and IEC 60068-2-(1,2,14,30) standards.
- Reverse AC Voltage Protection.
- User friendly & Easily accessible LCD Display with all AC & DC Parameter Configurable by Display Switches & Digital LCD (20X4).
- User Friendly Control :- Output Voltage, Chg. Voltage - SPV/Grid, Chg. Current - SPV/Grid, Grid Reconnect, Batt. Low.
- Priority based working modes - Smart/PCU/Hybrid (for saving energy & money).
- Grid Charging, IT Load - Enable/Disable by LCD.

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

Hospital



School



Industries



Home



Patrol Pump



Bank



ALFA PRO+ SOLAR PCU (1Ph in 1Ph out)

Parameter		Units		Rating													
Model No.(WVF)				0324	0348	2148	0348	0096	0096	7096	8120	10120	10160	11380	12348	20240	
System Rating	KVA			1	2	3.75	5	5	7.5	10	11	12	15	18	18	20	
Operating DC Voltage	V			24	48			96		120		160		192		240	
Photovoltaic Input																	
Input Voltage Range (Min/Max)	VDC			45-60	90-120			180-240		220-400		220-400		300-500		410-600	
Maximum PV Power Factor	PF			1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Solar Charge Controller Rating	A			40	40	12	100	20	75	80	80	80	120	80	80	80	
MPPT Based Charging Controller																	
Switching Element				Mosfet				IGBT									
Controller								SDP									
Type of Charger								MPPT									
Efficiency	%							95									
Configurable																	
Battery Low Source	V							Bat. Low Cut +0.2								11.0	
Battery Low Cut**	V							10-11.5								11.0	
Battery High Cut (RM)	V							SPV Based-SPV CHG REF + 0.1V for 15Sec, SPV CHG REF +1.5V for 25Sec								16	
								SPV Based-SPV CHG REF for 15Sec, SPV CHG REF +0.2V for 25Sec								14.7	
Battery Charging Voltage by SPV	V							12.5-16								14.3	
Battery Charging Current by SPV	A							10-60								18	
Battery Charging Voltage by Grid	V							12.5-15.5								16	
Battery Charging Current by Grid	A							5-11								10	
Grid Low Cut Voltage	IT Mode: V, Smart: V							NA/120-200								175/120	
Grid High Cut Voltage	IT Mode: V, Smart: V							NA/245-280								265/260	
Grid Charging								Enable/Disable								Enable	
IT Load								Enable/Disable								Disable	
Operating Mode								Grid/PCU/Invert								Smart	
Output Voltage Low	V							170-180								180	
Output Voltage High	V							255-260								255	
No Load Drop Down								Enable/Disable								Disable	
Input Source								Grid/Genet								Grid	
Main Parameter																	
No. of Cells				8	16	32	64	128	256	512	1024	2048	4096	8192	16384		
Battery Low Source	V			24.4	48.8	48.75	48.75	97.5	195.0	195.0	195.0	195.0	195.0	195.0	195.0	228.75	
Battery Low Cut**	V			23.6	47.2	44.25	44.25	88.5	177.0	177.0	177.0	177.0	177.0	177.0	177.0	221.25	
Battery Charging Voltage by SPV	V			24	30	33.25	33.25	66.5	133.0	133.0	133.0	133.0	133.0	133.0	133.0	258.25	
Battery Charging Current by SPV	A			20	20	20	20	20	20	20	20	20	20	20	20	20	
Battery Charging Voltage by Grid	V			27.5	35.5	38.5	38.5	77.0	154.0	154.0	154.0	154.0	154.0	154.0	154.0	262.5	
Battery Charging Current by Grid	A			10	10	10	10	10	10	10	10	10	10	10	10	10	
Battery																	
Q ₉ (Dis. rate when PCU/BMS)				Either Battery cng voltage of need. Or battery cng current of need for the 2 reasons													
Disch Rate (PCU/Model Based Mode)	V			11-12													11.5
General																	
Switching Element				Mosfet				IGBT									
Control				PWM													
Rated Output Voltage	VAC			220, 1Phase, 3Wire Plus One Wire													
Rated Frequency	Hz			50/60													
Load Current	A			4.0	8	13.3	16	18	27	27	36	36	36	36	36		
Voltage Regulation	%			1													
Output Voltage Deviation @ 100% Load	%			+4													
Overload Capacity (1/10000 hrs)				100-1200Wrs auto reset) 15Sec (120-1500Wrs auto reset) 30Sec (150-200 : 2Sec (200-300 : 1Sec (300-400 : 250ms) +400 : 20ms													
Overload Capacity (1/10000 hrs)	%			100-110 : 10 Sec (110-120 : 2 Sec (120-200 : 20Sec (200-300 : 15Sec (300-400 : 200ms) +400 : 30ms													
Peak Efficiency	%			+92		+98											
Power @ 100Hz	20			93													
Coating				Temp Conducted, Pvc													
Protection				Overload, Battery Low, Battery High, Output Low, Output High, Output Short Cut, Overheat, Under Frequency, Over Frequency, Solar Panel Reverse													
Display Parameters				Battery Voltage, Charging Current, Discharging Current, Charging Rate, Discharging Rate, Solar Voltage, Solar Current, Instantaneous Power, Available Power, Grid Voltage, Grid Current, Grid Frequency, Output Voltage, Output Current, Output Frequency, IT Load, Grid, Grid Charger Status, Operating Mode, PCU/BMS/VD													
Switches				Reset for System On/Off, UP/DOWN, BACK, ENTER for LCD Configuration													
Indicators				System ON, Inverter ON, SPV Charging, Grid Charging, Battery Low/High, Overload, Overheat, Main Line, Main High, Under Frequency, Over Frequency, Fault													
Performance																	
Operating Temperature	C			0-50													
Max Relative Humidity (55°C max condensing)	%			95													
Degree of Protection				IP20													
Data Logger	Volt			30 Day Data Storage													
Dimension LxWxH	mm			18.8 X 10.8 X 18				24.8 X 13 X 23				24.8 X 13 X 26				32 X 40 X 23	
Weight (Approx)				32	42	44	50	51	55	60		100		100		100	

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

**Once Battery Gel Full Charge then Bat. Low cut as per specification otherwise battery may trigger IT 2V Per Bat. & Bat low cut 11.2V Per Bat.

SIGMA PRO Grid Export Solar PCU

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

A SMART PCU

Which Stores as well as Exports Electricity



Model Available
1kVA-15KVA

FEATURES

- DSPIC based Pure Sine Wave Design.
- Inbuilt in rMPPT charge controller (upto 30% more efficient).
- Grid Interactive.
- Maximum Preference to Solar Power.
- Wi-Fi based remote monitoring & Wifi freq. Bands 2.4GHz Support & (GSM Optional).
- Wi-Fi range : 3 - 5 meters in open air without obstacles.
- Certified* as per IS 16169: 2014/IEC 62116: 2008, IS 16221 (Part 2): 2015/IEC 62109-2: 2011/IS 16169: 2014/IEC 62116: 2008, IS 16221 (Part 2): 2015/IEC 62109-2: 2011 upto 1KVA-5KVA.
- Certified by IEC 61683, 61727, 60529, 60968-2 (1,2,14,30) & 62116 standards*.
- Robust Design-20 years product life, 5 yrs of warranty.
- User Friendly & Easily accessible LCD Display with all AC and DC Parameter: Configurable by Display Switches & Digital LCD (20X4).
- User Friendly Control :- Output Voltage, Chg. Voltage - SPV/Grid, Chg. Current - SPV/Grid, Grid Reconnect, Batt. Lim.
- Reverse AC Voltage Protection.
- Priority based working modes - Smart/PCU/Hybrid (for saving energy & money).
- Grid Export Mode, Grid Charging & IT Load - Enable/Disable by Display Switch.

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



**SIGMA PRO Grid Export SOLAR PCU (1Ph in 1Ph out)**

* Battery is not fully charged. Battery is 11.5 Volts. If battery is 5.0 Volts, remove battery, insert battery in fully charged battery.

ZETA PRO SOLAR PCU

"A Smart PCU - Which Stores as well as Exports Electricity"

**Model Available in
7.5kVA-50KVA**

**rMPPT™ Hybrid Solar PCU
(3Ph in 3Ph out)**



FEATURES

- DSPIC based Pure Sine Wave Design.
- Inbuilt in rMPPT charge controller (upto 30% more efficient*).
- Grid Interactive.
- Maximum Preference to Solar Power.
- 31 days data logs inbuilt and AC & DC energy meter inbuilt.
- Wi-Fi Based Monitoring & RS485 Communication
- Robust Design-20 years product life, 5 yrs of warranty.
- User Friendly & Easily accessible LCD Display with all AC and DC Parameter Configurable by Display Switches & Digital LCD (20X4).
- User Friendly Control :- Output Voltage, Chg. Voltage - SPV/Grid, Chg. Current - SPV/Grid, Grid Reconnect, Batt. Low.
- Reverse AC Voltage Protection.
- Priority based working modes - Smart/PCU/Hybrid (for saving energy & money).
- Grid Export Mode, Grid Charging & IT Load - Enable/ Disable by Display Switch.
- Phase Sequence Protection.

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



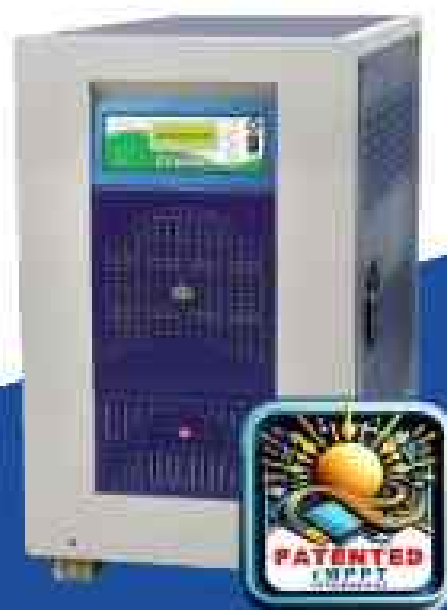
*As Compared With PWM

MARS Online Solar PCU

"3 Phase with Zero Changeover Time"

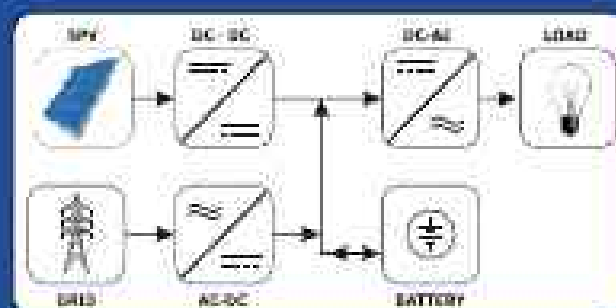
**Available in
5-20KVA (3 in - 1 Out)**

rMPPT™ Online Solar PCU



FEATURES

- DSPIC based design Pure Sine wave, inbuilt rMPPT charge controller.
- Thermal Protection.
- Maximum Preference to Solar Power.
- 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 Surge Capability (up to 300%) for starting heavy load.
- High Efficiency & High Reliability.



Working Mode

Solar/Grid/Battery
or
Solar/Battery/Grid

Application

Hospital

School

Industries



Home

Petrol Pump

Bank





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

Input	Power Rating		3kVA/240V		7.5kVA/240V		10kVA/240V		15kVA/240V		20kVA/380V	
	Voltage Range		400V±20% Three phase four wire									
	Frequency		50Hz ±3%									
	Power Factor		>0.92									
	Charger Topology		Buck									
	Connection Type		Terminal Block									
Solar	K Watt		5kW		7.5kW		10kW		15kW		20kW	
	Voc (min-max)		400V - 720V									
	Vmp		288V - 600V									
	Panel Configuration (S SERIES, MONOCRYSTALLINE)	540W	96 X 1P		146 X 1P		105 X 2P		166 X 3P		136 X 3P	
		550W	96 X 1P		126 X 1P		95 X 2P		95 X 3P		128X3P OR 135X3P	
	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		Bat Low Cut + 0.2								10.7V	
	Battery Low Cut		10-11.7V								10.0V	
	Battery High Cut (Charger)		Bat Volt By SPV + 0.7								14.8	
	Bat. CHG. Volt. by Grid		13-14.5V								13.3V	
	Bat. CHG. Current. by Grid		3-12A								10A	
	Bat. CHG. Volt. by SPV		13.5-15V								13.8V	
	Bat. 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% (1 phase 2 wire)									
	Load Current		17.4A		26.08A		34.76A		52.17A		69.6A	
	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		#0P/S ON #Mains CHG. #Overload #Output High/Low #Battery High/Low, #Bypass #SPV/OC ON #SPV High/Low #CHG. OVERHEAT #AC Input High/Low R/Y/B #Fault									
	LCD (30°) Display		#Input Voltage & Freq. #V/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									
Miscellaneous	Transfer Time		0 msec									
	Extended Battery Charging		Optional									
Environmental	Caster/Wheels		Yes									
	Operating Environment		0-50° C									
	Operating Relative Humidity		(5%-95%) Non-condensed									
	Storage Environment		-5-75° C									
	Operational Logic		SOLAR BATTERY GRID SOLAR GRID BATTERY									
	Storage Relative Humidity		5-95%									
	Degree of Protection		IP20									
	Remote Monitoring		Ethernet (Optional)									
Dimension (LxWxH) inch		30x16x27										

*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	30kVA/240V		7.5kVA/240V		10kVA/240V		15kVA/240V	
	Voltage Range	400V $\pm$ 20% Three phase four wire							
	Frequency	50Hz $\pm$ 2%							
	Power Factor	>0.92							
	Charger Topology	Buck							
	Connection Type	Terminal Block							
Solar	K Watt	5KW	7.5KW		10KW		15KW		
	Voc (min-max)	400V - 720V							
	Vmp	265V - 650V							
	Panel Configuration (60cells x 1m6x1.2m)	540W	9S X 1P	14S X 1P		10S X 2P		10S X 3P	
		550W	9S X 1P	12S X 1P		9S X 2P		9S X 3P	
	Switching Device	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	Bat Low Cut + 0.2						10.7V	
	Battery Low Cut	10-11.7V						10.5V	
	Battery High Cut (Charger)	Bat Volt By SPV + 0.7						14.5	
	Bat. CHG. Volt. by Grid	13-14.5V						13.3V	
	Bat. CHG. Current by Grid	1-12A						10A	
	Bat. CHG. Volt. by SPV	13.5-15V						13.8V	
	Bat. CHG. Current by SPV	5-24V						15V	
Grid Charger Reconnect	Enable /Disable						Disable		
Output Voltage Low Cut	170-180V						180V		
Output Voltage High Cut	250-260V						265V		
Output	Voltage	380V/400V/415V $\pm$ 1% (3phase 4 wire)							
	Load Current	5.8A	8.7A		11.6A		17.4A		
	Efficiency (AC - AC)	>90% Full Load							
	Frequency	50Hz							
	Waveform	Pure Sine Wave							
	Transient response	50 (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	1.1							
	Voltage Harmonics	$\pm$ 1%							
	Frequency Regulation	$\pm$ 0.05Hz							
	Connection Type	Terminal Block							
	Alarm	Battery Low, battery High, Overvoltage							
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's 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	0%-95% (Non-condensed)							
	Storage Environment	0-25° C							
	Storage Relative Humidity	0-95%							
	Degree of Protection	IP20							
	Remote Monitoring	Ethernet (Optional)							
Dimension (LxWxH) Inch	23x13x28					30x16x27			

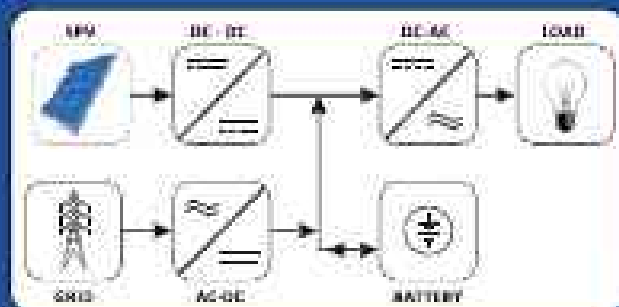
*Specification are subject to change without prior notice due to constant involvement in design & technology.

STAR Online Solar PCU

"3 Phase with Zero Changeover Time for Heavy Loads"

**Available in
20-120kVA**

Online Solar PCU



FEATURES

- Upto 30% more Efficient because of rMPPT Charge Controller.
- Short Circuit, Input Under/Over Voltage Protection.
- Advanced DSPic based Design Pure Sine Wave.
- User Configurable Parameters.
- Lightening, Surge Protection by SPD.
- Ethernet based Monitoring with Solar Data logs.
- Intelligent Charge Sharing.
- Inbuilt Solar Energy Meter with 31 days data logs, with Configurable (Optional)

Working Mode

Solar/Grid/Battery
or
Solar/Battery/Grid

Application

Hospital

School

Industries



Home

Petrol Pump

Bank



STAR ONLINE PCU 20-40KVA (3Ph in 1Ph out)

Power Rating		20kVA/360V	25kVA/240V	25kVA/360V	30kVA/360V	40kVA/360V
Input						
Voltage Range		400V± 20% Three phase four wire				
Frequency		50 Hz ±3Hz				
Power Factor		0.94				
Charger Topology		Buck				
Connection Type		Terminal Block				
Solar						
K watt		20	25		30	40
Voc (min-max)		360-720	360-720	540-810		
Vmp		320-680	430-730			
Panel Configuration (S-SERIES, P-PARALLEL)	336W	12Sx5P	15Sx5P	15Sx5P	15Sx8P	15Sx8P
	440W	12Sx4P	13Sx5P	14Sx4P	14Sx5P	15Sx6P
	540W	12Sx3P	12Sx4P	12Sx4P	14Sx4P	15Sx5P
	560W	12Sx3P	14Sx3P	12Sx4P	13Sx4P	14Sx5P
switching device		IGBT				
switching freq.		16KHZ				
charge controller		One				
Charger Topology		Buck				
Type of Charger		rMPPT				
Output						
Voltage		220V/230V/240V Default 230V± 1%				
Load Current		69.6A	66.9A		104.3A	139A
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		39X28X35				34X34X43

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

STAR ONLINE PCU 20-120KVA (3Ph in 3Ph out)

Power Rating		20KVA/240V	30KVA/240V	40KVA/240V	50KVA/240V	60KVA/240V	80KVA/240V	100KVA/240V	120KVA/240V	
Input										
Voltage Range		400V±20% Three-phase four wire								
Frequency		50 Hz ± 3Hz								
Power Factor		0.95								
Charger Topology		Buck								
Connection Type		Terminal Block								
Solar										
Kwatt		20		30	40	50	60	80	100	120
Voc (min/max)		400-720	540-810	600-720	840-870					
Panel Configuration (series, parallel)	330W	120x6P	135x6P	150x6P	165x6P	180x6P	195x6P	210x6P	225x6P	240x6P
	440W	120x8P	135x8P	150x8P	165x8P	180x8P	195x8P	210x8P	225x8P	240x8P
	540W	120x10P	135x10P	150x10P	165x10P	180x10P	195x10P	210x10P	225x10P	240x10P
Switching device		IGBT								
Switching freq.		16KHz								
No. of Charge Controller		One								
Charger Topology		Buck								
Type of Charger		MPPT								
Peak Efficiency(DC to AC)		98%								
Output										
Voltage (P-S-PH)		380/400V±10V ± 1% Configurable by LCD Display								
Load Current Per Phase		25A	35A	46.6A	58.3A	69.9A	93.3A	116.6A	140A	
Efficiency(AC to AC)		~98% @ Full Load						~99% @ Full Load		
Frequency		50 Hz								
Waveform		Pure Sine Wave								
Transient Response		40 (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., 300-500% @ 200ms., ~400% @ 50ms.								
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		L1/L2 On Means 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. Overload & SPV High/Low								
LCD (opt.)		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) mm		300x300x30				340x340x40				

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

PWM (Solar Charge Controller)

**Available in
10A & 20A**



FEATURES

- Controller Based PWM Technology.
- Works Efficiently.
- LED/LCD Indication.
- Over Charging Current Protection.
- Over Charging Voltage Protection.
- Battery Reverse Protection.
- Overload Protection.
- SPV Reverse Polarity Protection.
- Reverse current flow from Battery Solar Array Protection.

PWM (Solar Charge Controller)

General				
Model	PWM1224/10A LED		PWM1224/20A LCD	
DC Voltage	12V	24V	12V	24V
Protect Control	Micro controller			
Operating Temperature	0-50°C			
Storage Temperature	-20° to 70°C			
Battery Type	Tubular			
Battery Capacity	200 AH Max.			
Battery Charging Regulation Mode	PWM			
Operating Solar Input Voltage (Voc) Max	25V	48.5V	25V	48.5V
Solar Module Size(Max)	165W*1	300W*1	165W*2 (Parallel)	300W*2 (Parallel)
Electrical				
Nominal Battery voltage	12/24V DC (Auto Setting)			
SPV Chg. Voltage Boost	14.5V	28V	15.5V	31V
Solar Current (max)	10A		20A	
Load Current Max	10A		20A	
Charge Controller Efficiency	>95%			
Idle Consumption	<30mA			
Min. Solar Input Voltage(Voc) @ Startup	17V±0V	35V±0V	17V±0V	35V±0V
Load Condition				
USB Port	5V / 2A			
Battery Low Voltage Load Disconnect	10.8V±0.2V	21.6V±0.4V	10.8V±0.2V	21.6V±0.4V
Battery Low Voltage Load Recovery	12.8V±0.2V	25.2V±0.4V	12.8V±0.2V	25.2V±0.4V
Battery High Voltage Load Disconnect	15.0V±0.2V	30.0V±0.4V	15.0V±0.2V	30.0V±0.4V
Battery High Voltage Load Recovery	14.0V±0.2V	28.0V±0.4V	15.5V±0.2V	31.0V±0.4V
LED Indication				
Solar ON	Green		NA	
Solar Over Load	Red		NA	
Batt. High	Green		NA	
Batt. Low	Red		NA	
Load ON	Green		NA	
Over Load	Red		NA	
Display Parameter				
Batt. Voltage, Batt. Current	NA		Yes	
Solar Status, Absent, Charging OFF, Overload	NA		Yes	
Load Current	NA		Yes	
Charge ON	NA		Yes	
Overload				
100%	Continuous			
101%-120%	10 Min ON/1 Min OFF		30 Sec. ON/1 Min OFF	
121%-150%	30 Sec. ON/1 Min. OFF		1 Sec. ON/1 Min. OFF	
150%-200%	2 Sec. ON/1Min. OFF		250mSec. ON/1Min. OFF	
>200%	250mSec. ON 1 Min. OFF			
Protections				
Battery Voltage (High/Low)	Available			
Battery Reverse	Available			
SPV Reverse	Available			
SPV Current (High/Low)	Available			
Reverse Current Flow from Battery to Solar Panel Array	Available			
Load short Circuit through DC Fuse	Available			
Physical				
Weight	130gm		300gm	
Dimension (LxWxH) mm	75x132x36 mm		100x161x50 mm	

Protect Solar Charge Controller from direct Sunlight & Water.

Panel open circuit voltage should not to do be more than specified voltage.

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

SMU (PWM) Solar Management Unit

"Convert your Home Inverter into Solar Inverter"



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	SMU122450
Operating Temperature	0°C to 50°C
Storage Temperature	-10°C to 60°C
System Operating Voltage	12V/24V DC
Battery Type	Tubular/SMF
Battery Capacity Max.	200AH
Battery Charging Regulation Method	4 Stage PWM (Bulk/Absorption/Float/Equalize)
Maximum Solar Power	12V : 800W, 24V : 1700W
Max. Solar Panels Recommended	12V, 25A:150W/165W *3 (Parallel)
	12V, 50A:150W/165W *6 (Parallel)
	24V, 25A:250W/315W/325W*3 (Parallel
	24V, 50A : 250W*6 : 315W/325W*6, 350W/400W/425W*4 (Parallel)

Electrical

Nominal Grid Voltage	230V AC 1 ϕ
Grid Low Cut	90V $\pm$ 10V
Grid High Cut	290V $\pm$ 10V
Charging Current (Solar)	50A/25A
Charge Controller Efficiency	>95%
Idle Consumption	<20mA
Max. Solar input Voltage (Voc)	170V-35V (12V Batt.) 31V-49.5V (24V Batt.)
Min. Solar input voltage (Voc) @ Start-up	15V/30V $\pm$ 2%
Solar Panel Recovery Voltage	17V/34V $\pm$ 2%
Max. Solar Current	50A By Default
Efficiency	>95%
Battery Set Points @ 25°C	
Bulk Voltage Tubular Battery	14.6V/28.2V $\pm$ 2%
Absorption Voltage Tubular Battery	14.2V/28.4V $\pm$ 2%
Float Voltage Tubular Battery	14V/28V $\pm$ 2%
Bulk Voltage SMF Battery	13.7V/27.4V $\pm$ 2%
Float Voltage SMF Battery	13.5V/27.0V $\pm$ 2%
Absorption Duration	3Hr
Equalize Voltage	14.9V/29.8V $\pm$ 2%
Equalize Duration	3Hr
Equalize calendar	20 days
Mains reconnect when Solar not present	At any Batt. Voltage
Mains reconnect when insufficient Solar Power	<11.8V/23.6V $\pm$ 2%
Mains disconnect when sufficient Solar Power For Tubular	>13.8V/27.6V $\pm$ 2%
Mains disconnect when sufficient Solar Power For SMF	13.7V/27.4V $\pm$ 2%

Display Parameters

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 @ SPV : >55A/25A
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)	2.33
Dimension (LxWxH) inch	5.6 X 6.9 X 4.9

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SMU (rMPPT) Solar Management Unit

"Convert your Home Inverter into Solar Inverter"



FEATURES

- High speed and high performance micro-controller.
- High reliability with longer operational life.
- Inbuilt protection to avoid battery undercharge & over-charge.
- Inbuilt rMPPT Technology Charge Controller.
- 3 Stage Charging BLK, ABS, FLT.
- Automatic Voltage selection for 12V or 24V.
- Solar Prioritization.
- Compact design with Wall Mounting.
- Eco friendly.
- Transient and Surge Protection.
- Over Temperature Protection.



SOLAR MANAGEMENT UNIT

General		
Model	SMUMPPT122440	
Nominal System Voltage	12V DC	24V DC
Battery Capacity Max.	200AH	
Battery Type	Tubular/SMF	
Battery Charging Regulation Method	3-Stage (Bulk/Absorption/Float)	
Solar Charger Type	MPPT	
Solar Power (Max.)	600W	1200W
Max. Solar Panel (Recommended)	150W/165W X2 (Series) X 2 (Parallel) 315W/325W/330W/335W X 2 (Parallel) 390WX1	315W/325W/330W/335WX4 (Parallel) 390W/425WX3, 540WX2 (Parallel) 315W/325W/330W/335WX 2 (Series) X 2 (Parallel)
Max. Solar input Voltage(Voc)	15V-49.5V	30V-99V
Idle Consumption	<20mA	
Efficiency	>95%	
Battery set points		
Tubular	Boost Voltage : > 14.5V $\pm$ 0.2V	Boost Voltage : > 29.0V $\pm$ 0.2V
	Float voltage : > 14V $\pm$ 0.2V	Float voltage : > 28V $\pm$ 0.2V
	Bulk Absorption : 14.8V $\pm$ 0.2V	Bulk Absorption : 29.6V $\pm$ 0.2V
SMF	Boost/Float Voltage : 13.8V $\pm$ 0.2V	Boost/Float Voltage : 27.6V $\pm$ 0.2V
	Bulk Absorption : 14.1V $\pm$ 0.2V	Bulk Absorption : 28.2V $\pm$ 0.2V
Battery Current Max.	40A	
Grid		
Mains Low cut /Recovery	90V/100V $\pm$ 10V	
Mains high cut /Recovery	290V/280V $\pm$ 10V	
Mains reconnect when Solar not present	At any Batt. Voltage	
Mains Disconnect	If Battery reaches boost level then after <5 min, Mains will be disconnected.	
Mains Reconnect	Battery volt. : 11.8V	Battery volt. : 23.6V
Display Parameters		
Display Type	LCD	
Display Parameters	Batt. Voltage, Batt. Current, Batt. Type(TUB/SMF), Solar Voltage, Solar Current, Solar Saving- KWh, Mode Selection (Auto/Manual), Mains Present, Absent.	
Protections		
Protections	Battery Reverse Polarity (Fuse blown), Batt. Reverse Current, SPV Over Current, Solar High Voltage, SPV Reverse Polarity, Over Temperature, Mains High Cut, Mains Low Cut	
Operating Temperature	0°C to 50°C	
Storage Temperature	0°C to 60°C	
Ingress Protection	IP-20	
Fixing	Wall Mounted	
Weight (Kg)	2.8	
Dimension (LXWXXH) inch	9.25 x 9 x 4.15	

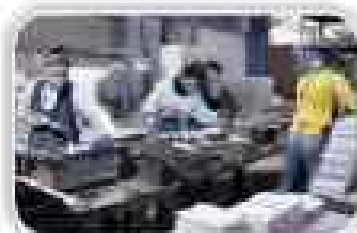
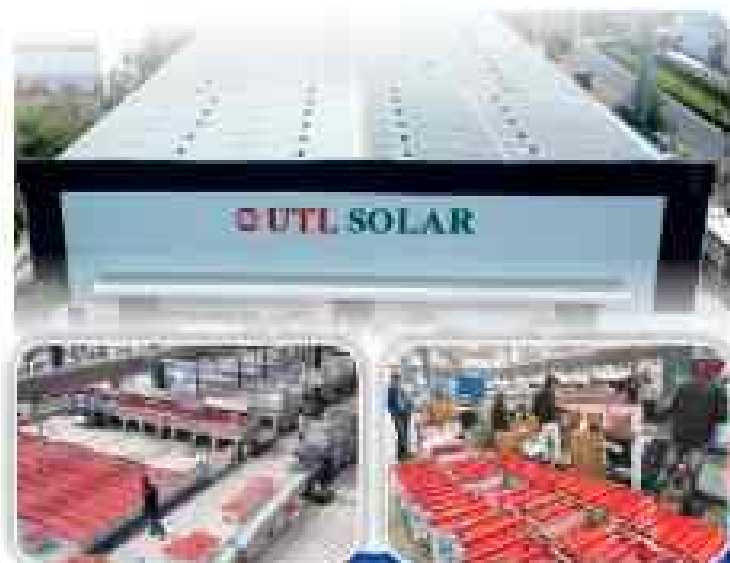
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HEAVY DUTY BATTERY

Range Available - 40Ah to 325Ah



Model - UIT

SOLAR BATTERY RANGE

Model	Nominal Voltage	Capacity @ C20 at 27°C	Warranty*	Dimensions L x W x H ±3 mm	Container	Plate Combination	Filled Weight** ± 3%	Gross Weight** ± 3%
	V	AH	Months				Kg	Kg
UIT 1430	12	120	30 + 30*	503x190x385	IT 400	2+3	47.00	48.5
UIT 1530	12	150	30 + 30*	503x190x410	IT 500	2+3	54.70	56.50
UIT 1536	12	150	36 + 36*	503x190x410	IT 500	2+3	55.40	57.20
UIT 2030	12	200	36 + 36*	503x190x410	IT 500	3+4	62.70	64.40
UIT 2530	12	250	36 + 36*	503x190x410	IT 500	3+4	68.30	70.20
UIT 3030	12	300	36 + 36*	503x205x410	IT 700	4+5	81.20	82.70
UIT 3542	12	325	42 + 42*	512x198x460	IT 800	4+5	82.70	85.0

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* Pro-Rata Warranty.

Model - UST

SOLAR BATTERY RANGE

Model	Nominal Voltage	Capacity @ C10 at 27°C	Warranty*	Dimensions L x W x H ±3 mm	Container	Plate Combination	Filled Weight** ± 3%	Gross Weight** ± 3%
	V	AH	Months				Kg	Kg
UST 4030	12	40	36	410x172x235	N-100	2+3	22.50	24.10
UST 1030	12	105	36	503x190x410	IT 500	3+4	62.90	64.70
UST 1500	12	150	50	503x190x410	IT 500	3+4	63.40	65.20
UST 2030	12	200	36	503x190x410	IT 500	3+4	67.70	69.50
UST 2000	12	200	60	503x190x410	IT 500	3+4	70.40	72.20

** Specifications are subject to change without prior notice due to constant improvements in design & technology.

* Warranty will be applicable in India.

Model - UTT

INVERTER BATTERY RANGE

Model	Nominal Voltage	Capacity @ C20 at 27°C	Warranty*	Dimensions L x W x H ±3 mm	Container	Plate Combination	Filled Weight** ± 3%	Gross Weight** ± 3%
	V	AH	Months				Kg	Kg
UTT 1530	12	150	30+30*	503x190x410	IT 500	2+3	55.00	56.80
UTT 1572	12	150	36+36*	503x190x410	IT 500	2+3	55.70	57.50
UTT 2072	12	200	36+36*	503x190x410	IT 500	3+4	62.90	64.70

* Specifications are subject to change without prior notice due to constant improvements in design & technology.

* Pro-Rata Warranty.

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Himanchal Pradesh	Orange	West Bengal	Green
Punjab	Orange	Assam	Green
Haryana	Yellow	Mizoram	Yellow
Delhi	Yellow	Maharashtra	Orange
Uttarakhand	Pink	Goa	Yellow
Uttar Pradesh	Pink	Odisha	Pink
Bihar	Cyan	Telangana	Green
Rajasthan	Cyan	Andhra Pradesh	Cyan
Gujarat	Yellow	Karnataka	Green
Madhya Pradesh	Green	Kerala	Pink
Chhattisgarh	Yellow	Tamil Nadu	Yellow

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