



***GO GREEN, GO SOLAR***



## **SINGLE PHASE SOLAR CONTROLLER**

**CERTIFIED BY**











## **ABOUT US**

### **OUR DREAM IS TO UNLOCK THE POTENTIAL OF SOLAR ENERGY**

BY USING OUR TECHNOLOGY, EXPERIENCE, SYNERGY & TO DESIGN TO DELIVER PRODUCTS IN SOLAR CONTROLLERS THAT MAKE POSITIVE LIVELIHOOD CHANGES EVERYWHERE, WHERE SUN GOES.

## **WHO WE ARE**

Nimesh Sheth and Approva Bhatt founded Kisan Solar and developed 3rd Generation Solar Power Controller unit called SPCM(Sinusoidal Pump Controller with MPPT) for Solar Water Pumping. Since then this “Smart Controller” has already been recognized and awarded certificates of excellence by various agencies. Then they invented a Life changing Product called U&SPC (Universal & Single Phase Controller) for Irrigation as well as Domestic use & U&SPC is the only controller of its kind in the World which is Patented and Certified by MNRE accredited Labs.

**TAG Solar System LLP** (Global Distributor) is the Marketing & Distribution arm of Kisan Solar and working closely with many Big Names of the Industry and State Governments.

Coming from diverse backgrounds; our team members offer their unique experiences to collaborate in offering products and services using New Generation Technologies.

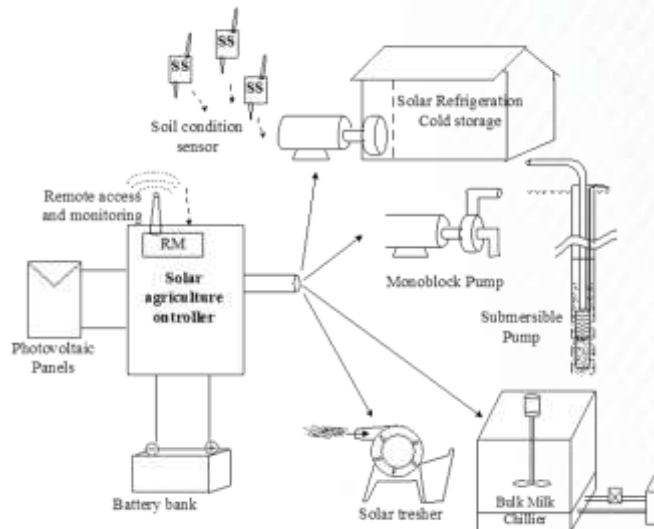
## WHAT WE DO

**TAG Solar System LLP** specializes in offering Solar Controllers using advanced technology that not only offers more Power to the Customers, with far lesser maintenance but also increase in Productivity & Income; Customers can manage and operate their systems independently and there is No need of dependency on Grid or Battery Bank. We do this by offering solutions based on their needs through components that offer best performance with least maintenance requirements.

## OUR VISION

Our vision "TO CHANGE LIVES FOR THE BETTER, FOREVER" arises from the belief that no one is fully empowered unless they have the ability to be independent. By providing energy solutions that are generated and consumed at the point. Which offers more Power and cleaner Energy. We see the Cleaner Energy as segment that needs to be developed for the sustainable growth of a nation. We can generate power whenever there is Sun.

The block diagram of Universal solar pump/agriculture controller: Fig. 1.







## WHY SPC...?



- Make Your Own Grid.
- No dependency on Government electricity Shut-Off or Battery-Inverter.
- Pure electricity generation to safeguard your home appliances & essentials.
- Easy to Install, Use & Maintain.
- Save thousands of your hard earned money with your own electricity generation.
- From Morning to Evening – No electricity cut-off.
- For the back-up in evening, one can charge Batteries also.





# TAG SINGLE PHASE SOLAR CONTROLLER



## **EXCLUSIVE ADVANTAGE FOR BENEFICIARIES**

- **BATTERY-FREE OPERATION:** TAG SOLAR CONTROLLER CAN RUN WITHOUT BATTERIES, ELIMINATING THE NEED FOR BATTERY CONNECTIONS AND REDUCING SYSTEM COMPLEXITY.
- **PURE SINE WAVE OUTPUT:** IT PROVIDES A PURE SINE WAVE OUTPUT, ENSURING A CLEAN AND STABLE POWER SUPPLY TO CONNECTED DEVICES.
- **LOW HARMONIC DISTORTION:** TAG SOLAR CONTROLLER HAS A HARMONIC DISTORTION OF VOLTAGE OF LESS THAN 3%, MINIMIZING ELECTRICAL NOISE AND ENSURING EFFICIENT OPERATION OF SENSITIVE EQUIPMENT.
- **SHORTCUT PROTECTION:** IT OFFERS SHORTCUT PROTECTION, SAFEGUARDING HOME APPLICATIONS FROM ELECTRICAL FAULTS AND ENSURING THE SAFETY OF CONNECTED DEVICES.
- **EASY INSTALLATION:** SOLAR CONTROLLER IS DESIGNED FOR EASY INSTALLATION, ALLOWING FOR CONVENIENT SETUP AND INTEGRATION INTO EXISTING SYSTEMS.
- **BATTERY CHARGING CAPABILITY:** TAG SOLAR CONTROLLER CAN ALSO BE USED TO CHARGE HOUSE BATTERIES THROUGH A SEPARATE CHARGE CONTROLLER, PROVIDING ADDITIONAL FLEXIBILITY AND FUNCTIONALITY.



## **APPLICATIONS**

### **HOME APPLIANCES**

LIGHT, FAN, FRIDGE, TV,  
INVERTER AC, COMPUTER,  
MIXER, INDUCTION PLATE,  
COOLER, HEATER, ETC

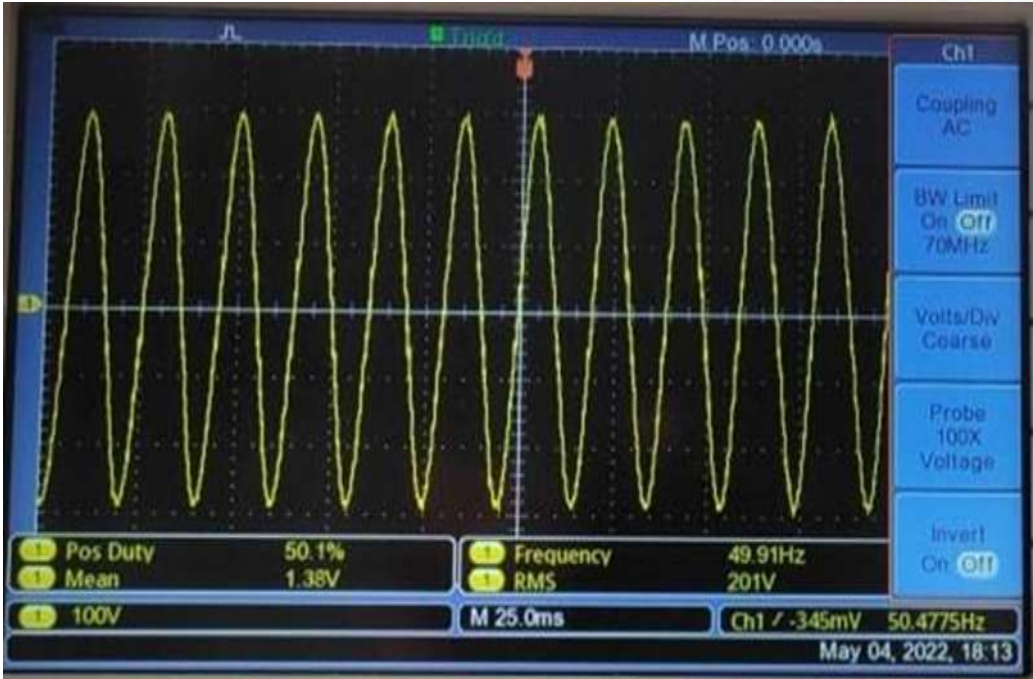
### **COMMERCIAL USES**

AERATOR,  
CHILLING PLANT,  
AIR COMPRESSOR,  
AND ANY OTHER  
SINGLE PHASE  
MACHINERIES





WAVEFORM COMPARISON BETWEEN SPC & VFD



TAG SPC VOLTAGE WAVEFORM

	Before installation	After installation
Reactor		
Sinusoidal Filter		

VFD VOLTAGE WAVEFORM



## Advantages of Sinewave over Squarewave



### **Pure Sine wave (PSW) (Sinusoidal wave)**

- PSW- ensures zero voltage spike during each cycle(50 cycles/second)-Provides very long life to the load device.
- PSW ensures years of maintenance free life of inverter & very long life of household equipment.
- PSW ensures zero stress on power module of the Inverter. Saves cost of maintenance of the inverter.

### **PWM – Square Wave**

- PWM is a square wave-For every cycle(50 Cycles/second) there is a severe voltage spike up to 1200 volts. It results in to faster wear & tear of the load device.
- Frequent maintenance of load and inverter - adding to the cost.
- PWM- signal is a cause of severe stress on power modules of the inverter. It results in very heavy maintenance cost as power module is the costliest part.





### **TAG SOLAR SPC**

- Any kind of electric load i.e. Resistive, Capacitive, light or heavy inductive – can be powered without any battery support for initial torque.
- Transformer less system based on high frequency switching that ensures efficiency upwards of 95%.
- SPC has a Live Short Circuit Protection.
- SPC has a pure Sine wave at the output.
- We can run heavy load machine like 1.5 Ton AC, Fridge, Heating Element and more.
- SPC protects human life and also ensures long life to household equipment.



### **VFD as SPC**

- No load can be powered without battery.
- OSPC has a transformer so efficiency is below 70%.
- OSPC has no live short circuit protection.
- OSPC has square wave at the output.
- OSPC can not run heavy load equipment like AC, Fridge, Heating Element.
- OSPC will frequently damage household equipment.

## LIST OF DIFFERENT LOAD

Load	Tesla Power USA SPC
Fan	On the Fly
100w Bulb	On the Fly
500w halogen	On the Fly
1000w halogen	On the Fly
600w Mixer	On the Fly
0.5hp motor	On the Fly
TV/Computer	On the Fly
Concentrator	On the Fly
1Hp Motor	On the Fly
1Ton inverter AC	On the Fly
1600w induction plate	On the Fly
1500w water heater coil	On the Fly
Up to 1.5hp Ac motor	On the Fly





# TAG SINGLE PHASE CONTROLLER DATASHEET



Controller Technical Datasheet					
		Single Phase Controller			
		MINIMA 1.1kVA	ULTIMA 2.2kVA	Maxima 3.3kVA	Maxima Plus 5kVA
PV Input					
Solar Panels	Watts	1500	3000	5000	8000
Min. Input Voltage	[Voc]	160	360	420	520
Max. Input Voltage	[Voc]	220	420	600	650
Max. Input Current	[A]	9	9	18	24
Output					
Phase		1 Phase	1 Phase	1 Phase	1 Phase
Voltage	[AC]	0-230V	0-230V	0-230V	0-230V
Frequency	[Hz]	5-50 Hz			
Current	[A]	5	10	14	18
Protection		Short Circuit, Open Circuit, Motor Jam, Dry Run, Low Power, Over Load			
Display & Communication					
Display Type		LED Indicators	16 x2 LCD		
Status Indicator		ON, OFF, Fault	ON, OFF, Fault with appropriate Massage		
Remote Monitoring	NO GSM/GPRS				
Other Info					
IP Degree of protection		IP 54		IP 65	
Weight	[kg]	6		24	35
Size (H)	mm	260		400	400
Size (W)	mm	270		360	360
Size (D)	mm	160		230	230



## 1.2 KW SPC



### KEY FEATURES

- Run domestic equipments such as Lights, Fan, Cooler etc. from 1.2 KW direct generation.
- 1.2 KW Single Phase output available for Domestic use.
- Get real time electricity without any Battery/Inverter.
- All Protection measures taken for Customer's Safety.

Single Phase Controller 1.2 KW			
UNITS GENERATION	TOTAL UNITS	Average UNIT COST	SAVINGS
PER DAY	7.5	8	60
PER MONTH	7.5X30=225	8	1800
PER YEAR	225X12=2,700	8	21,600
FOR 25 YEARS	2700X25=67,500	13	8,77,500
Electricity cost will increase many folds in coming times, so the avarage is calucated at Rs.13 over spread of 25 years.			
wood/ diesel / kerosen / coal are other expenses that consumer is saving on above the electricity cost, because of the amount of power generation which is sufficient for entire house hold load.			





## 2.2 KW SPC



### KEY FEATURES

- Run 2.2 KW Single phase domestic applications such as Lights, Fans, 1 Ton inverter AC, etc.
- Easy to Install and Maintain.
- Make your Own Grid.
- Battery Charging facility is also available.

Single Phase Controller 2.2KW			
UNITS GENERATION	TOTAL UNITS	Average UNIT COST	SAVINGS
PER DAY	15	8	120
PER MONTH	15X30=450	8	3600
PER YEAR	450X12=5400	8	43,200
FOR 25 YEARS	5400X25=135000	13	17,55,000
Electricity cost will increase many folds in coming times, so the avarage is calucated at Rs.13 over spread of 25 years.			
wood/ Diesel / kerosen / coal are other expenses that consumer is saving on above the electricity cost, because of the amount of power generation which is sufficient for entire house hold load.			



# 3 KW SPC



### KEY FEATURES

- Beneficiary can run 3 KW Single phase domestic applications such as 1 Ton inverter AC, 2 HP Single Phase induction Motor etc.
- Toggle Push button available for emergency.
- LCD Display given for all Live Information
- More than 16 Protections provided for the safety of Beneficiary & his/her equipments.
- Pure sign wave electricity generation to increase the life of your domestic appliances.

Single Phase Controller 3 KW			
UNITS GENERATION	TOTAL UNITS	Average UNIT COST	SAVINGS
PER DAY	22.5	8	180
PER MONTH	22.5X30=675	8	5400
PER YEAR	675X12=8100	8	64,800
FOR 25 YEARS	8100X25=2,02,500	13	26,32,500
Electricity cost will increase many folds in coming times, so the avarage is calucated at Rs.13 over spread of 25 years.			
wood/ Diesel / kerosen / coal are other expenses that consumer is saving on above the electricity cost, because of the amount of power generation which is sufficient for entire house hold load.			





## 5 KW SPC



### KEY FEATURES

- Beneficiary can run 5 KW Single phase domestic applications such as 1.5 Ton inverter AC, 3 HP Single Phase induction Motor etc.
- From morning to evening, Make Your Own Grid.
- No need to worry about Grid Cut-Off or dependency on Battery-Inverter.
- Cook your meals on Hot Plate and save money expense of Gas connection or woods firing.
- Battery Charging Facility available

Single Phase Controller 5 KW			
UNITS GENERATION	TOTAL UNITS	Average UNIT COST	SAVINGS
PER DAY	37.5	8	300
PER MONTH	37.5X30=1125	8	9000
PER YEAR	1125X12=13,500	8	1,08,000
FOR 25 YEARS	13,500X25=3,37,500	13	43,87,500
Electricity cost will increase many folds in coming times, so the average is calculated at Rs.13 over spread of 25 years.			
wood/ Diesel / kerosen / coal are other expenses that consumer is saving on above the electricity cost, because of the amount of power generation which is sufficient for entire house hold load.			



**THANK YOU**