



***GO GREEN, GO SOLAR***  
***USPC Technology by KISAN SOLAR***

**SINGLE PHASE SOLAR CONTROLLER/INVERTER**

**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

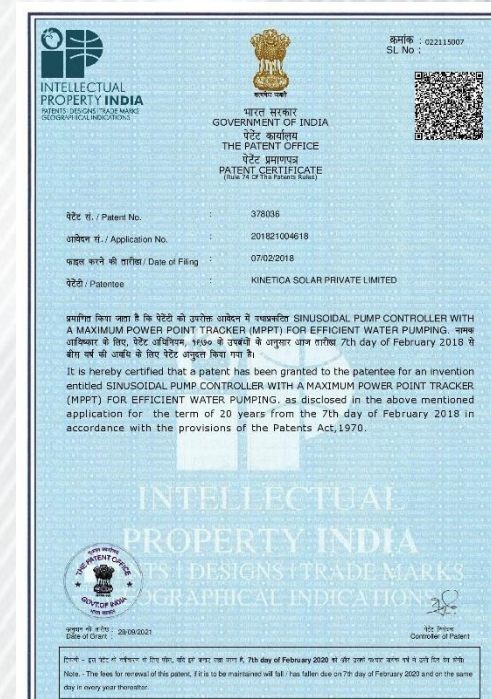
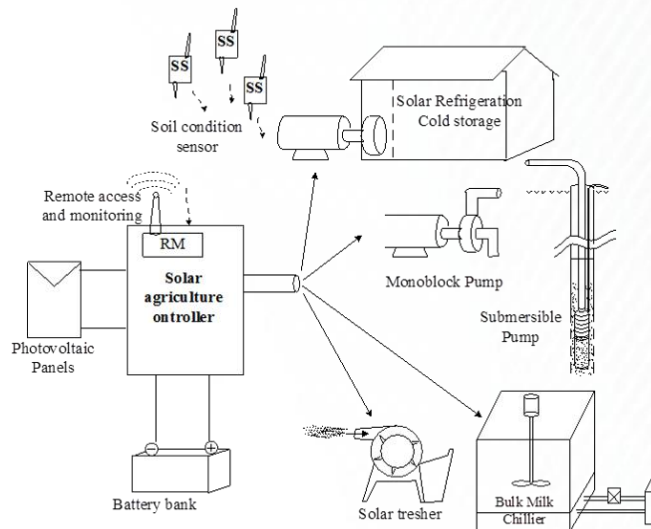
**TAG Solar System LLP** specializes in offering Solar Controllers using advanced technology that not only offers more Power to the Customers, with far lesser maintenance but also increase in Productivity & Income; Customers can manage and operate their systems independently and there is No need of dependency 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.







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## WHY Single Phase Controller/Inverter...?

- **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/INVERTER



## 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

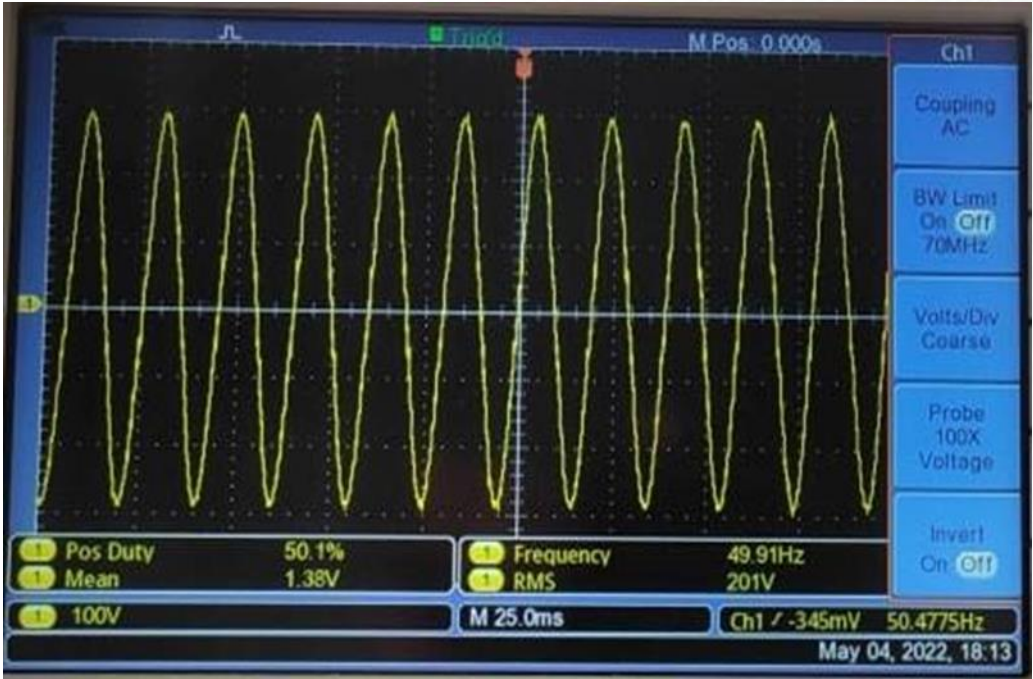




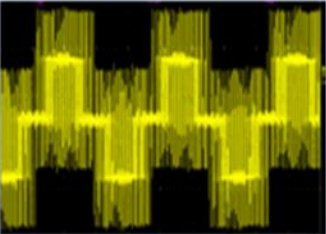
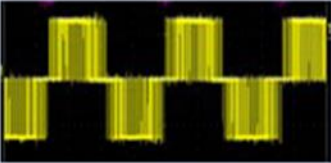
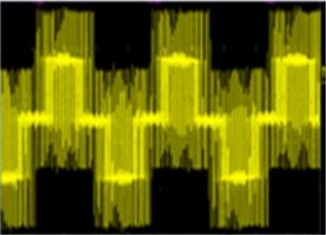
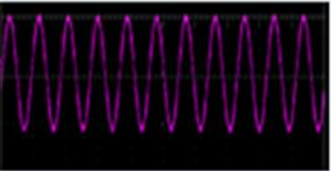
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**WAVEFORM COMPARISION BETWEEN SPC & VFD**



**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.







## Price List

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## World's ONLY Technology, Made in India

				Single Phase Controller									
		Minimum Required Panels		MINIMA 1.1kVA	Minimum Required Panels		ULTIMA 2.2kVA	Minimum Required Panels		Maxima 3.3kVA	Minimum Required Panels		Maxima Plus 5kVA
		Poly 335 WP	Mono 535 Wp		Poly 335 WP	Mono 535 Wp		Poly 335 WP	Mono 535 Wp		Poly 335 WP	Mono 535 Wp	
Solar Panels	Watts			1440 Wp			2600 Wp			4440 Wp			6000 Wp
PV Input													
Min. Input Voltage	[Voc]	4 Nos.	4 Nos.	160	9 Nos.	7 Nos.	360	10 Nos.	8 Nos.	420	13Nos.	11 Nos.	520
Nom. Input Voltage	[Voc]	6 Nos.	5 Nos.	220	10 Nos.	8 Nos.	420	14 Nos.	12 Nos.	580	16Nos.	13 Nos.	650
Max. Input Voltage	[Voc]	6 Nos.	5 Nos.	230	10 Nos.	8 Nos.	420	15 Nos.	12 Nos.	600	16Nos.	13 Nos.	650
Max. Input Current	[A]			9			9			18			18

### For Hot Profile Days(Summer)

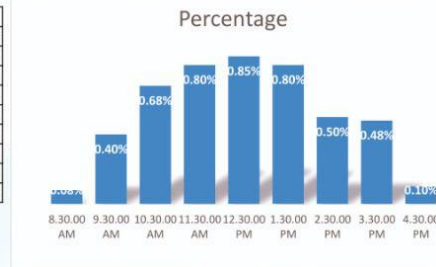
Timing	Percentage
8.30.00 AM	0.28%
9.30.00 AM	0.50%
10.30.00 AM	0.62%
11.30.00 AM	0.70%
12.30.00 PM	0.72%
1.30.00 PM	0.70%
2.30.00 PM	0.58%
3.30.00 PM	0.45%
4.30.00 PM	0.25%
5.30.00 PM	0.10%



Condition:-  
No Clouds  
Clean Panels  
New Panels  
Good Radiation

### For Cold Profile Days(Winters)

Timing	Percentage
8.30.00 AM	0.08%
9.30.00 AM	0.40%
10.30.00 AM	0.68%
11.30.00 AM	0.80%
12.30.00 PM	0.85%
1.30.00 PM	0.80%
2.30.00 PM	0.50%
3.30.00 PM	0.48%
4.30.00 PM	0.10%



Condition:-  
No Partial or Full Clouds  
Clean Panels  
New Panels  
Good Radiation

## LIST OF DIFFERENT LOAD

LOAD	TAG SINGLE PHASE SOLAR CONTROLLER/INVERTER
Fan	On the Fly
100w Bulb	On the Fly
500 w Halozen	On the Fly
1000w Halozen	On the Fly
600w Mixer	On the Fly
0.5 HP Motor	On the Fly
TV/Computer	On the Fly
Concentrator	On the Fly
1 HP Motor	On the Fly
1 Ton inverter AC	On the Fly
1600w induction Plate	On the Fly
1500w water heater coil	On the Fly
Up to 1.5 HP AC Motor	On the Fly





# TAG SINGLE PHASE CONTROLLER DATASHEET



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SPC Controller Technical Datasheet						
		ULTIMA 2.2kVA	ULTIMA 3.7Kva	ULTIMA PLUS 4 Kva	MAXIMA 5kVA	MAXIMA 7kVA
Panels Needed		300wx10(Poly)	300Wx15(Poly)	540Wx9	7500W	10000W
PV Input						
Min. Input Voltage	[Voc]	380	380	280	500	500
Max. Input Voltage	[Voc]	450	450	450	700	700
Max. Input Current	[A]	16	16	16	16	16
No of Input channels		1	1	1	1	1
Output						
Phase		1 Phase	1 Phase	1 Phase	1 Phase	1 Phase
Output Wires		2 Wires (P + N)	2 Wires (P + N)	3 Wires (2P + N)	2 Wires (P + N)	2 Wires (P + N)
Voltage	[AC]	230V	230V	230V	230V	230V
Frequency	[Hz]	50Hz				
Maximum Current	[A]	10	16	19	22	27
Maximum Surge Current	[A]	23	23	25	35	35
Protection		Short Circuit, Open Circuit, Low Power, Over Load				
Display & Communication						
Display Type		16 x 2 LCD				
Status Indicator		ON, OFF, Fault with appropriate Massage				
Remote Monitoring		NO	NO			
Other Info						
IP Degree of protection		IP54	IP54			
Weight	[kg]	7	7	17	16	16
Size (H)	mm	260	260	400		
Size (W)	mm	270	270	360		
Size (D)	mm	160	160	230		

# Single Phase Controller Installation Requirements



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SPC Installation Requirements					
	ULTIMA 2.2kVA	ULTIMA 3.7Kva	ULTIMA PLUS 4 Kva	MAXIMA 5kVA	MAXIMA 7kVA
<b>Panels Needed</b>	300wx10(Poly)	300Wx15(Poly)	540Wx9	540W x 13	540W x 17
<b>Structure for Panels</b>	Passive Structure	Passive Structure	Passive Structure	Passive Structure	Passive Structure
<b>Changeover Switch</b>	32 Amp. 2 Pole - Min. 1 Quantity	33 Amp. 2 Pole - Min. 1 Quantity	34 Amp. 2 Pole - Min. 1 Quantity	35 Amp. 2 Pole - Min. 1 Quantity	36 Amp. 2 Pole - Min. 1 Quantity
<b>DC Wire</b>	As per Requirement	As per Requirement	As per Requirement	As per Requirement	As per Requirement
<b>AC Wire</b>	As per Requirement	As per Requirement	As per Requirement	As per Requirement	As per Requirement
<b>Fastner to install Controller</b>	2 Pc.	2 Pc.	2 Pc.	2 Pc.	2 Pc.
<b>MC4 Connectors</b>	As per Requirement	As per Requirement	As per Requirement	As per Requirement	As per Requirement





## GO GREEN, GO SOLAR

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### 2.2 kVA SPC

#### KEY FEATURES

- Run 2.2 kVA 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 2.2kVA	
UNITS GENERATION	TOTAL UNITS
PER DAY	15
PER MONTH	15X30=450
PER YEAR	450X12=5400
FOR 25 YEARS	5400X25=135000
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.	



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## 3.7 kVA

### KEY FEATURES

- Run 3.7 Kva Single phase domestic applications such as Lights, Fans, 1 Ton inverter AC, 1.5 HP Single Phase Induction/Submersible Motor etc.
- Easy to Install and Maintain.
- Make your Own Grid.
- Battery Charging facility is also available.

Single Phase Controller 3.7 kVA	
UNITS GENERATION	TOTAL UNITS
PER DAY	22.5
PER MONTH	22.5X30=675
PER YEAR	675X12=8100
FOR 25 YEARS	8100X25=2,02,500
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.	





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## 4 kVA SPC

### KEY FEATURES

- Beneficiary can run 3 kVA 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.
- Battery Charging facility is also available.

Single Phase Controller 4 kVA	
UNITS GENERATION	TOTAL UNITS
PER DAY	30
PER MONTH	30X30=900
PER YEAR	900X12=10,800
FOR 25 YEARS	10,800X25=2,70,000
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.	



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### 5 kVA SPC



#### KEY FEATURES

- Beneficiary can run 5 kVA 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 kVA	
UNITS GENERATION	TOTAL UNITS
PER DAY	37.5
PER MONTH	$37.5 \times 30 = 1125$
PER YEAR	$1125 \times 12 = 13,500$
FOR 25 YEARS	$13,500 \times 25 = 3,37,500$
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.	





## GO GREEN, GO SOLAR

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### KEY FEATURES

- Beneficiary can run 7kVA Single phase domestic applications such as 2 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

### 7 kVA SPC

Single Phase Controller 7 kVA	
UNITS GENERATION	TOTAL UNITS
PER DAY	52.5
PER MONTH	$52.5 \times 30 = 1575$
PER YEAR	$1575 \times 12 = 18,900$
FOR 25 YEARS	$18,900 \times 25 = 4,72,500$
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**