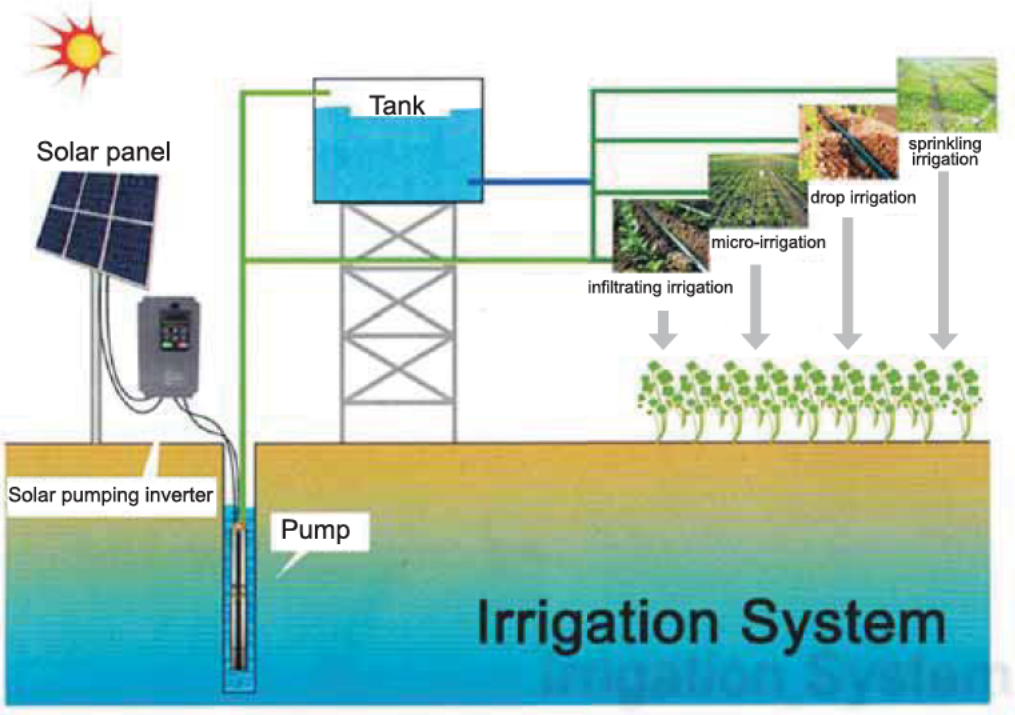
FULL

Solar Pumping system

Innovation Services Honesty Aggressive

INTRODUCTION

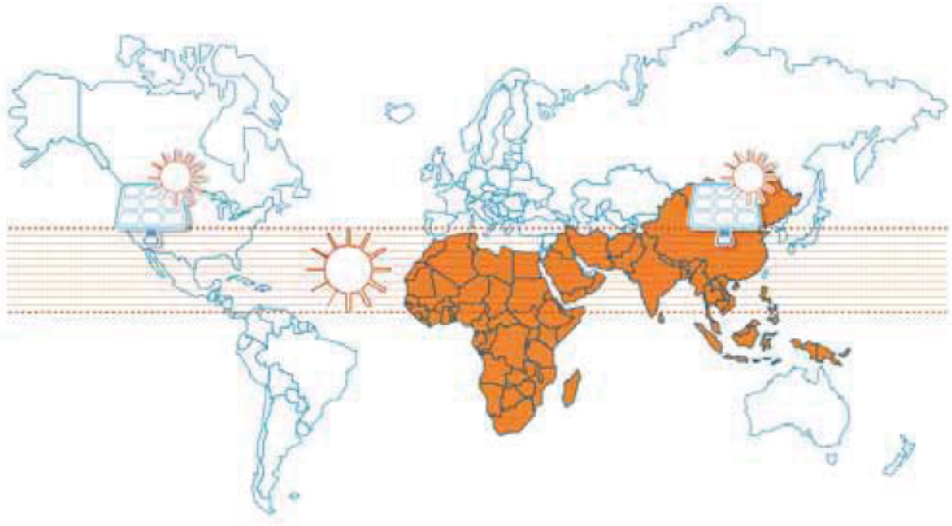
The FU9000S solar pumping system serves to provide water in remote applications where electrical grid power is either unreliable or unavailable. The system pumps water using a high-voltage DC power source such as a photovoltaic array of solar panels since the sun is only available during certain hour of a day and only in good weather weather conditions, the water is generally pumped into a storage pool or tank for further usage.



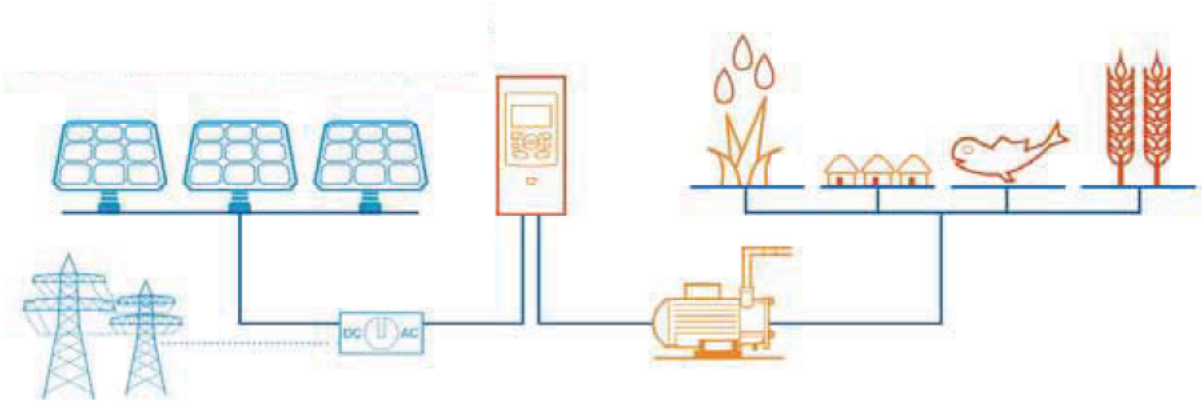
Why solar pump?

There are still regions in the world which do not have wide coverage to grid electricity, or where the availability of electricity is uncertain.

In many cases these regions are hot and dry, so it is vital to obtain clean water.

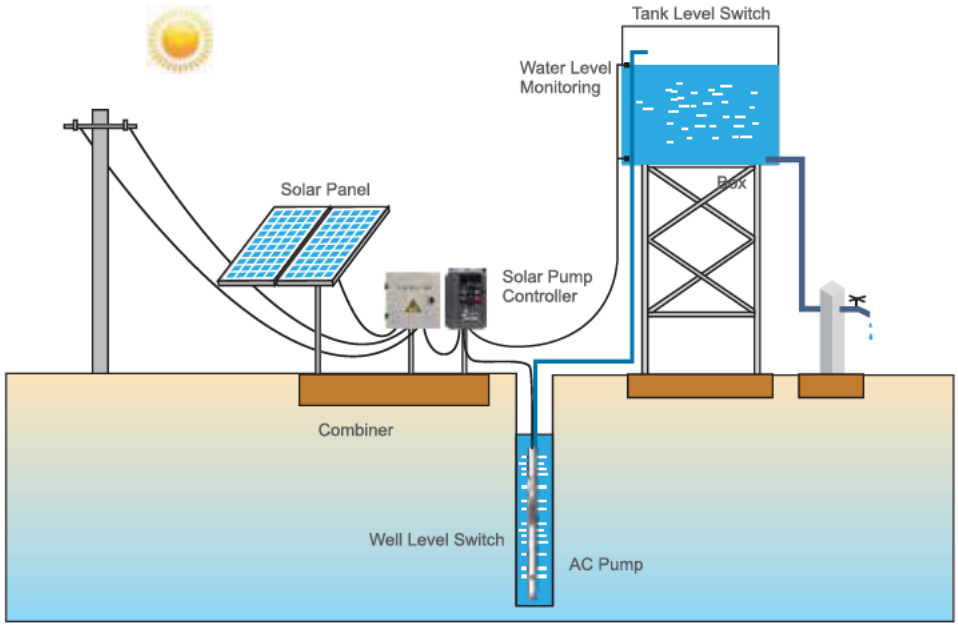


Meanwhile solar panels are becoming less expensive and there are more and more useful applications for them. The FU9000S solar pump system is designed to effectively use that energy.



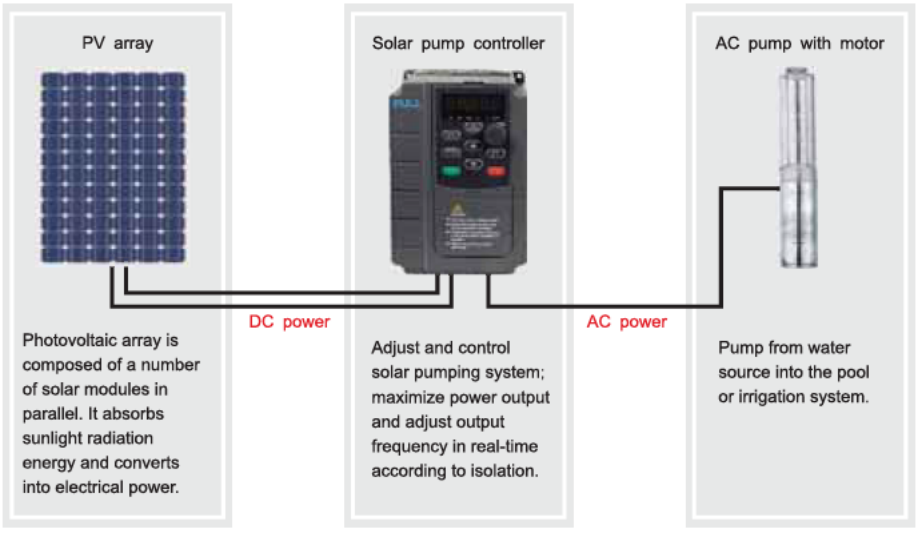
Ac Solar Pumping System

The FU9000S Ac solar pumping system mainly consists of PV array, mounting system, combiner box, FU9000S solar pump controller submersible AC pump, line reactor(optional), liquid level switch and solar cables, shown as Figure 1.



(Figure1: AC Solar Pumping System)

This system does not have storage batteries, completely powered by solar energy, thus realizing a cost-effective purpose. An appropriate water tank can be prepared to store water for later use.
High-efficient AC submersible pump is adopted for the system, satisfying different requirements.
The system is characterized by Maximum Power Point Tracker technology, regulating the working of the pump automatically to realize the maximum generated energy for the system.
Automatic control is adopted for the system such as: automatic start-up and shut-off respectively in the morning and evening, automatic shut-off for full tank and water shortage in the well. Protection measures are taken for the rotation jam of the pump, 3-phase equilibrium etc. Thus prolonging the service lifetime of both the pump and controller.



FULL

MPPT function
Energy saving 30%

Solar Pumping Inverter

FU9000S

In order to satisfy the demands of various pumping applications, the FU9000S solar controller adopts Max Power Point Tracking and proven motor drive technology to maximize power output from solar modules. It supports both DC and AC power inputs. When solar power is not available, the controller can be switched to an alternate single-phase or three-phase AC input such as a generator or inverter from battery, if available. The controller provides fault detection, motor soft start, and speed control. The FU9000S solar controller is designed to provide these features with the plug and play ease of installation.

Feature

- Flexibility
- Compatible with any IEC three-phase asynchronous motors
- Compatible with popular solar arrays
- Grid main supply optional

Smartness

- Self-adaptive maximum power point tracking technology with up to 99% efficiency
- Automatic regulation of pump flow
- Self-adaptation to the drive used in the installation
- Smart multi-pump control card optional for more efficient solar energy utilization

Cost Effectiveness

- Plug-and-play system design
- Embedded pump functions
- Battery-free for most apllications
- Effortless maintenance

Reliability

- 10-year market proven experience of leading motor and pump drive technology
- Soft start feature to prevent water hammer and increase system life
- Smart IGBT module integrated to simplify system design, educe board space, simplify the manufacturing process and thus
- Improves system reliability
- Built-in overvoltage, overload, overheat and dry-run motor protection

Remote Monitoring

- Standard RS485 interface equipped for each solar pump controller
- Spots value of solar pump parameters monitoring available from anywhere
- History of solar pump parameters and events lookup support

Datasheet

Controller Model	FU9000S-0R7-2	FU9000S-1R5-2	FU9000S-2R2-2	FU9000S-0R7-4	FU9000S-1R5-4	FU9000S-2R2-4	FU9000S-004-4
Input Data							
PV Source							
Max Input Voltage(Voc)[V]	450					800	
Min Input Voltage at mpp[V]	180					350	
Recommended Voltage ,At mpp	280VDC～360VDC					500VDC～600VDC	
Recommended Amps Input,At mpp[A]	4.7	7.3	10.4	2.5	3.7	6.2	11.3
Recommended Max Power at mpp[KW]	1.5	3.0	4.4	1.5	2.2	4.4	8
Alternate AC Generator							
Input voltage	220/230/240AC(±15%),Single			380V AC(±15%),Three Phase			
Max Amps(RMS)[A]	8.2	14.0	23.0	3.4	5.0	5.8	10
Power and VA capability[KVA]	2	3.1	5.1	1.5	2.2	5.0	6.6
Output Data							
Rated Output Power[KW]	0.75	1.5	2.2	0.75	1.5	2.2	4
Rated Output Voltage	220/230/240V AC,Three Phase			380/400/415/440V AC(±15%),Three Phase			
Max Amps (RMS)[A]	4.5	7.0	10.0	2.5	3.7	5.0	9
Output Frequency	0-50Hz/60Hz						
Protection							
	Surge protection,Overvoltage protection,Undervoltage protection,Locked pump protection, Open circuit protection,Short circuit protection,Overheated protection,Dry run protection.						
General Data							
Ambient Temperature Range	-20℃～60℃,>45℃,Derating as required.						
Cooling Method	FanCooling						
Ambient Humidity	≤95%RH						
Dimensions(H*W*D)[mm]	185*125*160						245*150*180
Net Weight [Kg]	1.55	1.6	1.67	1.67			3.0
Standard Warranty [month]	18						
Certificates	IEC/EN 61800-5-1,IEC/EN 61800-2:2004,IEC/EN 61800-3:2004,CE						