10 YEARS EXPERIENCE

भारत सरकार द्वारा पंजिकृत

KAYAM®

Save Power Go Green

CERTIFIED QUALITY KAYAM WARRANTY

Kayam Solar Water Pumping System



In-built MPPT

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Help Line : +91 982 992 2208

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Solar-powered pump

A solar-powered pump is a pump running on electricity generated by photovoltaic panels or the thermal energy available from collected sunlight as opposed to grid electricity or diesel run water pumps. The operation of solar powered pumps is more economical mainly due to the almost zero operation and maintenance costs and has less environmental impact than pumps powered by an diesel engine. Solar pumps are useful where grid electricity is unavailable.

Components

A photovoltaic solar powered pump system has three parts:

- Pump
- Controller
- Solar Panels

The size of the PV-system is directly dependent on the size of the pump, the amount of water that is required (m^3/d) and the solar irradiance available.

The purpose of the controller is twofold. Firstly, it matches the output power that the pump receives with the input power available from the solar panels. Secondly, a controller usually provides a low voltage protection, whereby the system is switched off, if the voltage is too low or too high for the operating voltage range of the pump. This increases the lifetime of the pump thus reducing the need for maintenance.

Traditional DC motors not being suitable for submissable pumps because of maintenance implications. Hence a converter which converts DC generated by PV cells into variable frequency AC is more suitable for AC motors, which are more reliable.

Applications

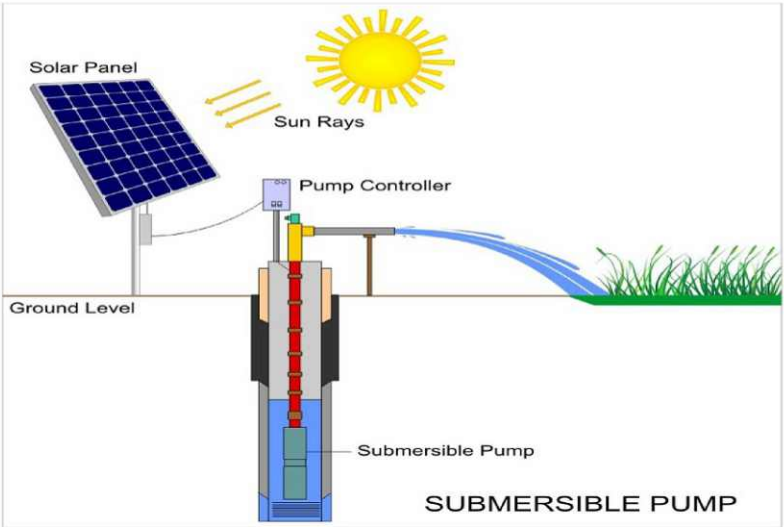
Solar powered water pumps

Can deliver drinking water as well as water for livestock or irrigation purposes. Solar water pumps may be especially useful in small scale or community based irrigation, as large scale irrigation requires large volumes of water that in turn require a large solar PV array. As the water may only be required during some parts of the year, a large PV array would provide excess energy that is not necessarily required, thus making the system inefficient.

Solar PV water pumping systems are used for irrigation and drinking water in India. The majority of the pumps are fitted with a 1hp to 10hp motor that receives energy from a suitable PV array. The larger systems can go upto 30hp or so.

Solar powered irrigation pumps

Make agriculture possible in areas that previously could not be farmed. Innovations in solar pump design now make all kinds of irrigation possible. Drip irrigation, sprinklers, micro-emitters, flood irrigation, even center-pivot irrigation systems can be powered without fuel, and without a connection to an electrical grid. Solar irrigation pumps can help increase crop yield.



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Features



Model Explanation

VFD 007 X 21 A

- **A** — Version Type: A: Standard drive
- **21** — Mains Input Voltage/DC Voltage: 21: 230V 1-Phase/150 - 400V; 43: 460V 3-Phase/350 - 700V
- **X** — Drive Series Type
- **007** — Applicable Standard Motor Capacity*: 015: 2HP(1.5kW) 055: 7.5HP(5.5kW) 150:20HP(15kW) 022: 3HP(2.2kW) 075: 10HP(7.5kW) 185: 25HP(18.5kW) 007: 1HP(0.75kW) 037: 5HP(3.7kW) 110:15HP(11kW) 220: 30HP(22kW)
- **VFD** — Series Name (Variable Frequency Drive)

*For submersible pump motor capacity, please, refer the table below.

Ordering Information

Part No.	Input DC Voltage Range	Output 3 Phase Voltage (Max)	Output 3 Phase Current (Max)	Suitable for Submersible Pump motor rating (HP)
VFD007X21A*	150 - 400V	230	4.2	1
VFD015X21A*	150 - 400V	230	7.5	2
VFD022X21A*	150 - 400V	230	11	3
VFD022X43A*	350 - 700V	415	5.5	2
VFD037X43A*	350 - 700V	415	8.5	3
VFD 040 CB43A	350 - 700V	415	10.5	4
VFD055X43A*	350 - 700V	415	13	5
VFD075X43A*	350 - 700V	415	18	7.5
VFD110E43A	350 - 700V	415	24	10
VFD150E43A	350 - 700V	415	32	15
VFD185E43A	350 - 700V	415	38	20
VFD220E43A	350 - 700V	415	45	25

*X is the name of the series (could be E or CB)

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