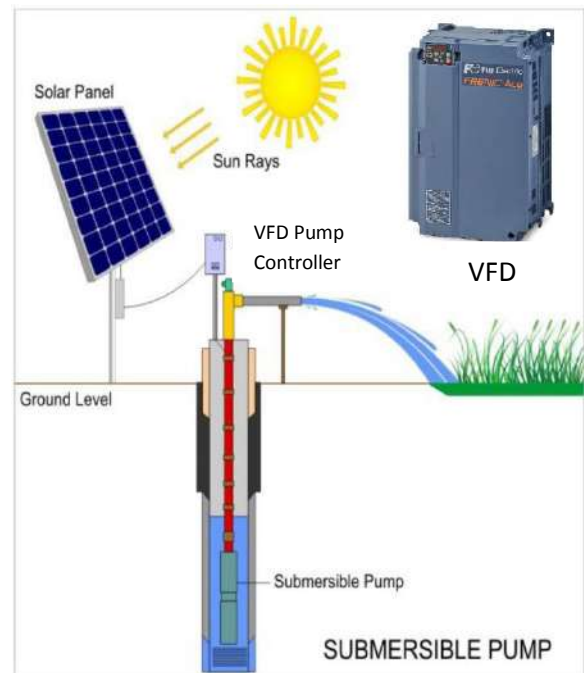
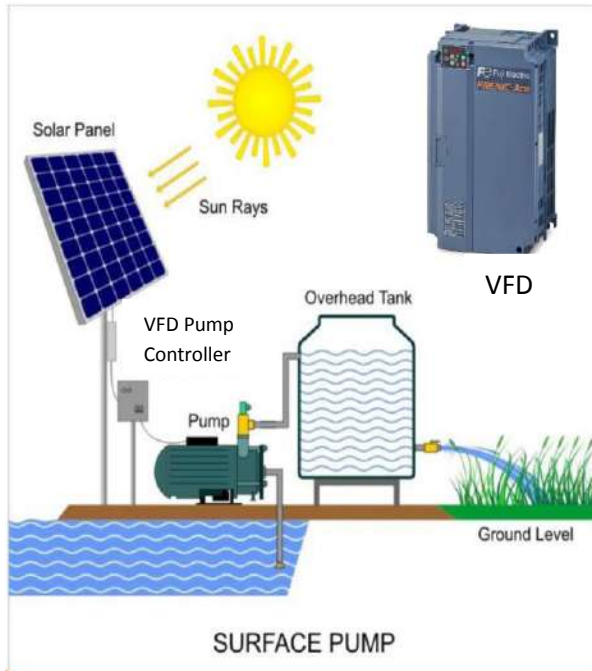


Energy Efficient Solar Controller for Pumps

A solar water pump has a mini power house at its heart and consists of a calibrated and matching solar array of modules-tuned with the equivalent power of pump for that particular application. The solar water pumping system is capable of running all types of electrical water pumps with applications varying from irrigation to household demands. Irrigation pumps such as submersible, surface or deep well can also be coupled with drip irrigation systems to enhance the returns from this configuration.



A typical solar water pumping system is known by the sum total of solar array size that is required to run the attached pump. A 1000 Wp solar water pump is capable of drawing and pumping approximately 40,000 liters of water per day from a source that is up to 10 meters deep. This is sufficient to irrigate about 2 acres of land with regular crops. A 1000 Wp solar water pump helps save up to Rs. 45,000 when compared to equivalent use of a diesel-operated pump over a year.

- ✚ Each solar array has a number of solar modules connected in parallel or series. Every solar PV panel generates current by converting solar radiation to electrical energy.
- ✚ The electrical energy from the entire array is controlled, tuned and directed by inbuilt controller in DC pumps or through the Variable Frequency Drive (VFD) and enables the connected pump (may be submersible or surface) to draw water and feed the delivery pipelines.
- ✚ The water thus drawn from ponds, rivers, bore wells or other sources by a solar water pump is pumped to supply water as required. It can be stored in tanks from where it is later channeled to fields or the supply from the pump may be coupled with drip irrigation systems to provide optimized water to fields directly.

Vizen Solutions' Solar Pump Controller



ELECTRICAL RESEARCH AND DEVELOPMENT ASSOCIATION	
<small>(Accredited by the National Accreditation Board for Testing and Calibration Laboratories, Govt. of India) ERDA Road, Mansarovar Industrial Estate, Vidyanagar 380015, India ERDAX : +91 (022) 2642940, 264296A, 2642977, 3043128 / 28 / 30 / 31 / 33 Fax : +91 (022) 2638382 E-mail : erda@erda.org Web : http://www.erda.org </small>	
TEST REPORT	
SHEET 01 OF 05	
NAME AND ADDRESS OF CUSTOMER	TEST REPORT NO.: RP-1718-009486
VIZEN SOLUTIONS 1 J-39, 1 st FLOOR, NET, FARIDABAD, HARYANA 121001.	DATE: 25/05/2017 CUSTOMER REF. NO.: VS/00220517 DATE OF SAMPLE RECEIPT: 24/05/2017
SAMPLE DESCRIPTION	SAMPLE IDENTIFICATION
POWER SOLAR CONTROLLER ENCLOSURE (CONTROLLER USED UPTO 10HP) Rating: Rated Voltage: 350-750V DC, Rated Normal Current: 17 Amp, No. of Phase: 3 Phase, Rated Frequency: 0-55Hz, Rated peak withstand current: 32 Amp Containing: Drive, RMS Module, Terminals, MCB	ERDA Sample Code No.: ERDA-00200865 Drq. No.: 1 (Rev. 0) (Sheet 1 of 1) (Total 1 sheet) Sr. No.: 2017M0001 Manufacturer: Vizen Solutions Type designation: IP 54
TEST DETAILS	TEST SPECIFICATION
1.0 IP 54 (Category 2) tests	IEC 60529:2013
Enclosures: a) Photograph No.: 1718-002249/00200863/A to D (Total 4 nos.) b) Drq. No.: 1 (Rev. 0) (Sheet 1 of 1) (Total 1 sheet)	
Test witnessed by: i) Mr. Pranav Prajapati of M/s. Vizen Solutions, Faridabad. ii) Mr. Gajip Mehta of M/s. Powertronics Control System, Ahmedabad.	
Remarks: Sample conforms to the requirement of IP 54 (Category 2) tests as per the standard.	
PREPARED BY <i>(Signature)</i>	CHECKED BY <i>(Signature)</i>
APPROVED BY <i>(Signature)</i> (G.SOM)	
<small>Note: 1. This report relates only to the particular sample received for testing in good condition at ERDA, Vadodra. 2. This report cannot be reproduced in part under any circumstances. 3. Publication of this report requires prior permission in writing from Director, ERDA. 4. Only the tests asked for by the customer have been carried out. 5. In case of any dispute, Vadodra will be the exclusive jurisdiction & shall be construed as where the cause has arisen. Caution: ERDA is not responsible for the authenticity of photocopied or reproduced test reports. ERDA provides support to customers for verification of the authenticity of test reports issued by ERDA.</small>	

Features

- ✚ Improved ease of operation and maintenance
- ✚ Remote multifunction keypad with backlit LCD screen available
- ✚ Functional safety compliance
- ✚ ISO13849-1 PL-e, Cat13 IEC1800-5-2 STO SIL3
- ✚ Global standard compliance
- ✚ Solar panel voltage set point calculation at every start
- ✚ True Maximum Power Point Tracking (MPPT) function
- ✚ Detection of sudden changes of conditions
- ✚ Stop criteria selectable (frequency and/or power)
- ✚ Start criteria by solar panel voltage and time
- ✚ Dry pump detection function
- ✚ Water tank maximum level detection function
- ✚ Low power detection function
- ✚ Two sets of PID gains



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