

॥ राष्ट्रदेवो भवः ॥



**Falcon**<sup>®</sup>  
A MACHINE FOR MANKIND

EST. 1994

# Solar Water Pumping Solution

TECHNICAL  
BROCHURE

 [www.Falconpumps.in](http://www.Falconpumps.in)



## HISTORY REPEATED AGAIN

Falcon Pump Is A Step Ahead Than The Pump Industry

Created Another Milestone For The Indian Pump Industry By Achieving  
**First Time In India**, The Highest **280+** Models of BEE Star Ratings Pumpsets  
( As Per Latest BEE Guidelines, 2020 )

### WHAT CUSTOMERS ARE LOOKING FOR BUYING A NEW PUMP ?

- \* Assurance on savings of huge electricity, through the high efficient pumpset.
- \* No Maintenance / almost Zero Service requirements while its operated under standard operating guidelines.
- \* Longest life span durability compared to others, due to superior quality raw-material & world class manufacturing process.

**- What Else Customer Required ???**

# Introduction

- Solar water pumps have emerged as a sustainable solution to provide water to remote areas that are beyond the reach of power lines. Currently, such areas rely on human or animal power or diesel engines for their water supply.
- The use of solar water pumps can significantly reduce the dependency on fossil fuels and lower greenhouse gas emissions. Additionally, it can provide a reliable source of water for irrigation, livestock, and drinking water. This can improve the standard of living for people living in remote areas and promote agricultural productivity.
- Furthermore, the installation and maintenance of solar water pumps are relatively simple and cost-effective. It requires minimal infrastructure and can operate efficiently in remote locations. The use of solar energy also eliminates the need for fuel transportation, reducing logistical challenges and costs.
- Overall, Solar Pumping systems provide cost-effective, reliable, and sustainable solution for basic needs.

## Application

- 1) Agriculture
- 2) Drip irrigation / Sprinkler operation
- 3) Drinking water
- 4) Livestock Watering & Gardening
- 5) Salt farming
- 6) Schools, Hospitals, Temple

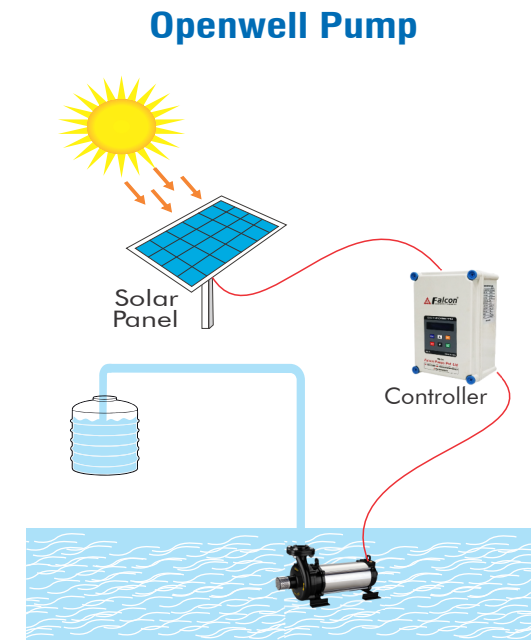
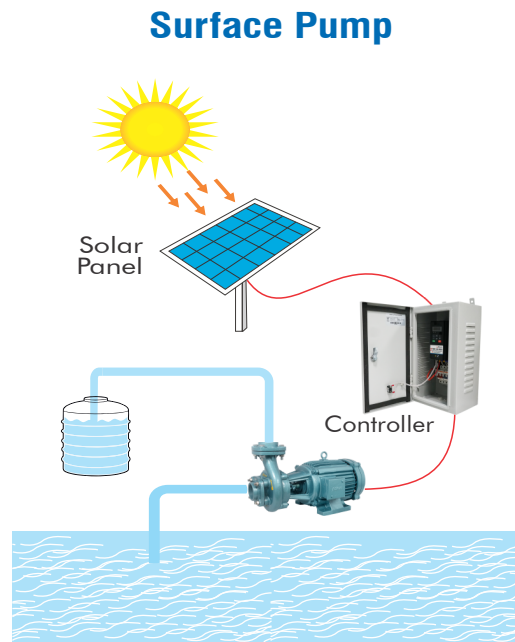
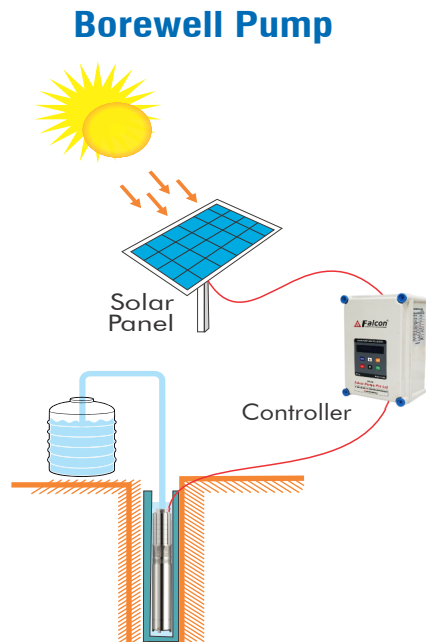
## Features & Benefits

- 1) Cost-Effective
- 2) Environmentally friendly
- 3) Reliable & Zero running cost
- 4) Easy installation
- 5) Less maintenance cost
- 6) Long lifespan

# Solar Water Pumping System - Components

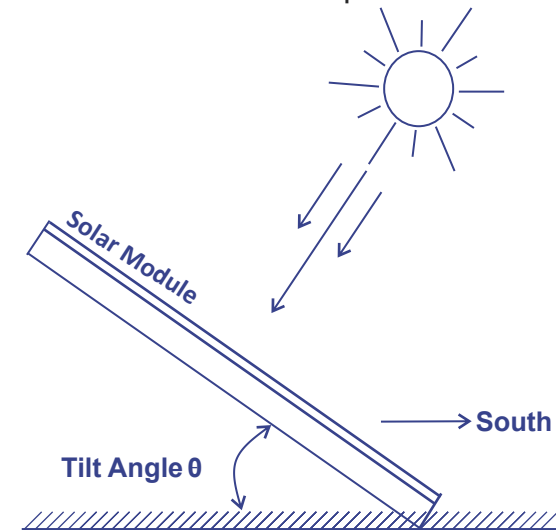
- 1) Solar PV Module
- 2) Manual Tracking Mounting structure
- 3) Solar pump controller
- 4) Solar AC pump-set

## How it works ?



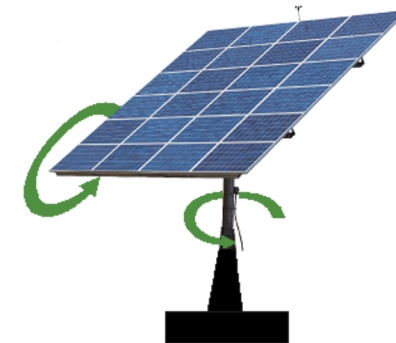
## Solar PV Module

- Solar panels work by converting sunlight into electricity using photovoltaic cells. These cells are made up of layers of silicon, a semi-conductive material that can absorb photons of light.
- When sunlight hits the solar panel, the photons of light are absorbed by the silicon atoms in the photovoltaic cells. This causes the electrons in the silicon to become excited and move around, creating an electrical current. The electrical current is then captured by wires in the solar panel and sent to Controller, where it is converted into usable electricity.
- Solar energy is renewable and sustainable: Unlike fossil fuels, which are finite resources that will eventually run out, the sun is a virtually unlimited source of energy. As long as the sun continues to shine.
- By using solar power, you are reducing your dependency on non-renewable energy sources and contributing to a more sustainable future.



## Mounting Structure - Manual Tracking

- It has been observed that Fix Mounting Structure unsuitable for the solar water pumping system since it's unable to optimum harnessing solar power.
- Manual tracking mounting structures are designed to increase the power production of solar by allowing them to follow the path of the sun throughout the day.
- This ensures that the solar panels receive maximum sunlight exposure, which increases the overall pump discharge & Efficiency.



# Pump Controller

- Solar pump controller is an electronic device that converts DC power from the solar panels to AC power according to the pump's technical specification. It ensures that the pump operates at its maximum efficiency, regard of the weather conditions or the amount of sunlight available.
- The controller also includes a Maximum Power Point Tracker (MPPT) that optimizes the power available from the solar panels and maximizes water discharge.
- Also, Solar pump can be operated simultaneously on solar power as well as manual grid operation. This feature is beneficial in areas with inconsistent sunlight or during the rainy season when the solar panels may not generate enough power to operate the pump.
- The auto-sharing facility is also available for combine operation of pump on solar power with grid power, ensuring uninterrupted water supply.



IP-54 (VFD)



IP-65 (Card)

# Openwell Pump

## AC Solar - Three Phase - 50 Hz

**SS DSH Series** :- SS Body, CI Impeller with Aluminium Rotor covered with CED Coated Casting Parts.

**CI HMA DLX/PRM Series** :- CI Body, CI Impeller with Aluminium Rotor with CED Coated Casting Parts.



Sr. No.	H.P.	MODEL / STAGE	HEAD (In MTR)	DISCHARGE (In LPD)	OUTLET (In Inch)	Motor Voltage / Current	
						POLY	MONO
1	2.0	SS DSH-212	10	2,31,000	3.00" X 3.00"	3Ø 160V / 9.5-AMP 2.5 SQ MM Copper Cable	3Ø 110V / 14-AMP 4.0 SQ MM Copper Cable
2	2.0	SS DSH-228	20	85,680	2.00" X 2.00"		
3	3.0	CI HMA - 312 DLX	10	3,53,925	4.00" X 4.00"	3Ø 230V / 9.5-AMP 2.5 SQ MM Copper Cable	3Ø 160V / 14-AMP 4.0 SQ MM Copper Cable
4	3.0	CI HMA - 318 DLX	15	2,19,240	2.50" X 2.50"		
5	3.0	CI HMA - 325 DLX	20	1,51,200	2.50" X 2.50"		
6	3.0	CI HMA - 333 DLX	25	1,07,352	2.00" X 2.00"		
7	5.0	CI HMA - 516 DLX	10	4,19,832	4.00" X 4.00"	3Ø 400V / 9.5-AMP 2.5 SQ MM Copper Cable	3Ø 250V / 14-AMP 4.0 SQ MM Copper Cable
8	5.0	CI HMA - 522 DLX	20	2,64,600	3.00" X 3.00"		
9	5.0	CI HMA - 528 DLX	25	2,39,400	2.50" X 2.50"		
10	5.0	CI HMA - 536 DLX	30	2,15,964	2.50" X 2.50"		
11	5.0	CI HMA - 545 DLX	40	1,35,130	2.00" X 2.00"		
12	7.5	CI HMA - 718 DLX	15	5,77,080	4.00" X 4.00"	3Ø 300V / 17-AMP 4.0 SQ MM Copper Cable	3Ø 350V / 14-AMP 4.0 SQ MM Copper Cable
13	7.5	CI HMA - 728 DLX	25	3,39,948	3.00" X 3.00"		
14	7.5	CI HMA - 736 DLX	30	2,93,832	3.00" X 3.00"		
15	7.5	CI HMA - 745 DLX	35	2,40,156	2.50" X 2.50"		
16	10.0	CI HMA - 1024 PRM	20	6,02,766	4.00" X 4.00"	3Ø 400V / 17-AMP 4.0 SQ MM Copper Cable	3Ø 440V / 14-AMP 4.0 SQ MM Copper Cable
17	10.0	CI HMA - 1032 PRM	30	3,78,000	3.00" X 3.00"		3Ø 280V / 24-AMP 6.0 SQ MM Copper Cable
18	10.0	CI HMA - 1040 PRM	35	3,35,916	3.00" X 3.00"		
19	10.0	CI HMA - 1055 PRM	45	1,94,040	2.50" X 2.50"		



**CI HMA - DLX**



**CI HMA - PRM**

### FRG-Series :- Card Base, IP-65 Enclosure (Poly)

Sr. No.	HP	Type	Solar Panel	Output
1	1.0	IP-65 (Card)	335w x 3/4-Nos	80-Volt, 9-Amp
2	2.0	IP-65 (Card)	335w x 6-Nos	160-Volt, 9-Amp
3	3.0	IP-65 (Card)	335w x 9-Nos	230-Volt, 9-Amp
4	5.0	IP-65 (Card)	335w x 15-Nos	400-Volt, 9-Amp
5	7.5	IP-65 (Card)	335w x 22-Nos	300-Volt, 17-Amp
6	10.0	IP-65 (Card)	335w x 30-Nos	400-Volt, 17-Amp



IP 65 (Card)

### FAS-Series :- VFD Base, IP-54 Single Door Enclosure (Poly)

Sr. No.	HP	Type	Solar Panel	Output
7	2.0	IP-54 (VFD)	335w x 6-Nos	160-Volt, 9-Amp
8	3.0	IP-54 (VFD)	335w x 9-Nos	230-Volt, 9-Amp
9	5.0	IP-54 (VFD)	335w x 15-Nos	400-Volt, 9-Amp
10	7.5	IP-54 (VFD)	335w x 22-Nos	300-Volt, 17-Amp
11	10.0	IP-54 (VFD)	335w x 30-Nos	400-Volt, 17-Amp
12	15.0	IP-54 (VFD)	335w x 45-Nos	400-Volt, 24-Amp
13	20.0	IP-54 (VFD)	335w x 60-Nos	400-Volt, 32-Amp
14	25.0	IP-54 (VFD)	335w x 75-Nos	400-Volt, 38-Amp
15	30.0	IP-54 (VFD)	335w x 90-Nos	400-Volt, 45-Amp



IP 54 (VFD)

### FRG-Series :- Card Base, IP-65 Enclosure (Mono)

Sr. No.	HP	Type	Solar Panel	Output
1	1.0	IP-65 (Card)	550w x 2-Nos	55-Volt, 14-Amp
2	1.5	IP-65 (Card)	550w x 3-Nos	80-Volt, 14-Amp
3	2.0	IP-65 (Card)	550w x 4-Nos	110-Volt, 14-Amp
4	3.0	IP-65 (Card)	550w x 6-Nos	160-Volt, 14-Amp
5	5.0	IP-65 (Card)	550w x 9/10-Nos	250-Volt, 14-Amp
6	7.5	IP-65 (Card)	550w x 13/14-Nos	350-Volt, 14-Amp
7	10.0	IP-65 (Card)	550w x 17-Nos	440-Volt, 14-Amp
8	10.0	IP-65 (Card)	550w x 18-Nos	280-Volt, 24-Amp



**IP 65 (Card)**

### FAS-Series :- VFD Base, IP-54 Single Door Enclosure (Mono)

Sr. No.	HP	Type	Solar Panel	Output
9	5.0	IP-54 (VFD)	550w x 9/10-Nos	250-Volt, 14-Amp
10	7.5	IP-54 (VFD)	550w x 13/14-Nos	350-Volt, 14-Amp
11	10.0	IP-54 (VFD)	550w x 17-Nos	440-Volt, 14-Amp
12	10.0	IP-54 (VFD)	550w x 18-Nos	280-Volt, 24-Amp
13	15.0	IP-54 (VFD)	550w x 28-Nos	400-Volt, 24-Amp
14	20.0	IP-54 (VFD)	550w x 42-Nos	400-Volt, 32-Amp
15	25.0	IP-54 (VFD)	550w x 52-Nos	400-Volt, 38-Amp
16	30.0	IP-54 (VFD)	550w x 60-Nos	400-Volt, 45-Amp



**IP 54 (VFD)**

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**Falcon Pumps Pvt. Ltd.**

Vavdi Industrial Area, Gondal Road, NH-27, Post : Vavdi, Rajkot - 360 004,  
Gujarat, (INDIA). Mo. : +91 97277 00568/9

 [www.falconpumps.in](http://www.falconpumps.in) |  [sales@falconpumps.in](mailto:sales@falconpumps.in) |  **1800 123 0000**

**For Sales & Dealership Inquiry :**

Dealership Inquiry - 97277 00566/7 - [info@falconpumps.in](mailto:info@falconpumps.in)  
Export - 75748 49055 - [export@falconpumps.in](mailto:export@falconpumps.in)  
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Solar - 97277 00577 - [solar@falconpumps.in](mailto:solar@falconpumps.in)