



Using gold and blue
to create
miles of green!
Solar Powered
Water Pumping
Systems

From
Tata BP Solar.
The 100%
Solar Company.

Harnessing the golden energy of sun to green the fields of India!

In a country where agriculture forms the backbone of the economy, there is an urgent need to focus on farmer-friendly technologies and systems. Understanding this and responding to farmers' requirements are the **Solar Powered Water Pumping Systems** from Tata BP Solar. Effective, with proven reliability, these Water Pumping Systems use the abundant and everlasting energy source of the sun, to make the most of another natural resource: **Water**.

Tata BP Solar has helped transform the agricultural landscape of India, with the installation of over 900 Solar Powered Water Pumping Systems all over the country! The only Company to have such an enviable track record!

- Easy to install, operate and maintain
- Completely serviceable
- Environment friendly
- Highly reliable
- Valuable savings on electricity bills
- Ideal in remote areas, where electricity is not reliable and diesel is difficult to obtain

The wide range of Solar Powered Water Pumping Systems from Tata BP Solar include both Surface and Submersible Pumps, in various ratings to suit different needs.



True to its reputation for quality and innovative solutions worldwide, Tata BP Solar offers a range of Water Pumping Systems. Designed to world-class standards of reliability and performance, they meet your requirements with an unmatched precision. Equipped with a solar array, these stand-alone systems use sunlight for generating electricity to drive the pump. What's more, they are easy to install, require very little maintenance and are completely serviceable. In situations where electricity is either unreliable or inaccessible, these pumping systems serve water supply and irrigation purposes efficiently and cost-effectively.

Surface Pumping Systems

DC Surface Pumps are designed for high flow rates and low heads. The permanent magnet DC motor driving the surface pump is powered by a matching solar array to maximise efficiency. An enclosed impeller design ensures smooth operation. Made of Cast Iron, DC Surface Pumps are finished with anti-corrosive Primer, followed by silver coloured polyurethane paint.

Model: TBP SP 900/1800

DC Surface Centrifugal Pump
(1 HP /2 HP)
Array Capacity: 900/1800 Wp
Total Dynamic Head (TDH):
10m (30 ft)
Water Discharge Per Day:
70,000/1,35,000 litres*



System Components

Description	Quantity
Solar Modules TBP 1275, 75 Wp	12/24 Nos.
Array Tracking Structure	1 No.
DC Surface Centrifugal Pump - 1 HP/2 HP	1 No.
Array Junction Box	1 No.
Installation Kit	1 Set
2" HDPE Pipe	10 m.
User Manual	1 No.

Submersible Pumping Systems

Designed for high head and medium flow rate applications like micro-irrigation, drinking water and live stock. High efficiency electronics optimises the power input to the pump and thereby enhances the overall efficiency. Available in two types: **DC Submersible and AC Submersible**.

DC Submersible Pumping Systems

Model: TBP SDS Q 128

The pump system can be conveniently installed below water level. Highly efficient and constructed of marine grade bronze and 304 stainless steel, these pumps can run even on very low voltages and consume very less power.

Total Dynamic Head (TDH) : 30m (100 ft.)
Water Discharge Per Day @ 30m*
TDH : 7,000 litres
Array Capacity : 240 watts



PC 10-28H
Controller



System Components

Description	Quantity
Solar Modules TBP 1240, 40 Wp	6 Nos.
Array Tracking Structure	1 No.
DC Submersible Pump	1 No.
Power Maximiser	1 No.
Array Junction Box	1 No.
Installation Kit	1 Set
3/4" HDPE Pipe	40 m.
User Manual	1 No.

* Assuming Peak Sunshine at 5.5 hrs. per day and 3 times manual tracking.

AC Submersible Pumping Systems



Designed for high head and medium flow applications. It uses a multi-stage pump and a high efficiency micro-computer based Inverter. The Inverter optimises the power input and thus enhances the overall system efficiency.

Model: TBP SP5A 7

AC, 3 Phase, Submersible Pump
 Array Capacity: 1200/1800 Wp
 Total Dynamic Head (TDH): 50m (166.6 ft)
 Water Discharge Per Day: 17,625/35,000 litres*



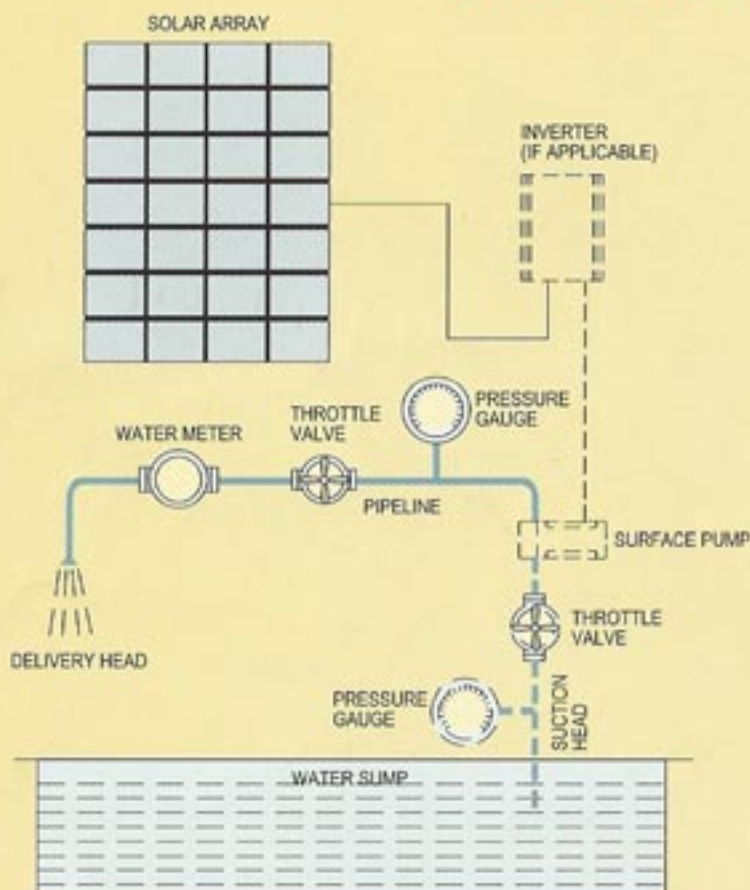
Micro-computer based Inverter

System Components

Description	Quantity
Solar Modules TBP 1275, 75 Wp	16/24 Nos.
Array Tracking Structure	1 No.
AC, 65V, 3 Phase, Submersible Pump	1 No.
Inverter	1 No.
Array Junction Box	2 Nos.
Installation Kit	1 Set
2" HDPE Pipe	50 m.
User Manual	1 No.

* Assuming Peak Sunshine at 5.5 hrs. per day and 3 times manual tracking.

Solar Water Pumping Test Set-up



Note: Total Dynamic Head = Suction Head + Delivery + Friction Losses

CONNECTIONS

- ❖ The pump to be tested is mounted on the test bench with the suction and delivery pumps connected
- ❖ Suction line is connected to a 2,000 litre capacity water pump
- ❖ Delivery line is connected back to the water sump
- ❖ Pressure gauges along the Throttle Valve are connected on the suction and delivery lines
- ❖ Water meter is connected on the delivery side
- ❖ Solar modules are assembled with mounting structure and are wired as per the pumping system configuration

PROCEDURE

- ❖ The output of the Solar Array is connected to the pump/electronics as applicable
- ❖ Water discharge is taken three times a day using a Flow Meter
- ❖ Solar radiation is measured in a Pyranometer
- ❖ Throttle Valves are set up as per the pump capability and testing requirements
- ❖ All the instrumentation is calibrated by external agencies

Tata BP Solar. The company that helps you harness the power of the sun.

The largest Solar Company in India, **Tata BP Solar** is a joint venture between the **House of Tata** and **BP Solar**, the largest Solar Company in the world.

Tata BP Solar, the **100% Solar Company** is totally focussed on designing, engineering, manufacturing, supplying and installing Solar Photovoltaic and Solar Thermal Systems that cater to both domestic and industrial needs. All Tata BP Solar products are of the highest quality and reliability, coming as they do, from an **ISO 9001 Company**. Tata BP Solar has also been awarded the **ISO 14001** Certification for design, development, manufacture, installation and servicing of its SPV Systems.



TATA BP SOLAR INDIA LIMITED
 Plot No. 78, Electronics City, Hosur Road, Bangalore - 561 229
 Tel : 080-8520083/8521016 Fax : 080-8520972/8520116
 Email : tatabp@solar.ind.bp.com Website : www.tatabpsolar.com

Dealer :

Regional Offices :

Ahmedabad: 079-6578464. Kolkata: 033-2880452. Lucknow: 0522-356664.
 New Delhi: 011-3411537/8. Pune: 020-4012741.

Due to continuous developments and product improvement, the Company reserves the right to change/alter the specifications.