THE INDIAN CONTROLLER

SOLAR PUMPS & CONTROLLERS

SEA SOLAR PUMPS & CONTROLLERS

- **SEA** SOLAR PUMPS & CONTROLLERS offer incredible features coupled with excellent performance, thus making a distinctive mark in the solar pump market.
- Ranging from 1 hp- 5 hp, we offer Solar Submersible Pump, Solar Surface or Mono-block pump, and Solar Open-well Pump. We also offer hybrid solar pumps.
- **SEA** has always been a pioneer in state-of-the-art technology which helps in producing highly energy-efficient, reliable, and durable solar pumps.

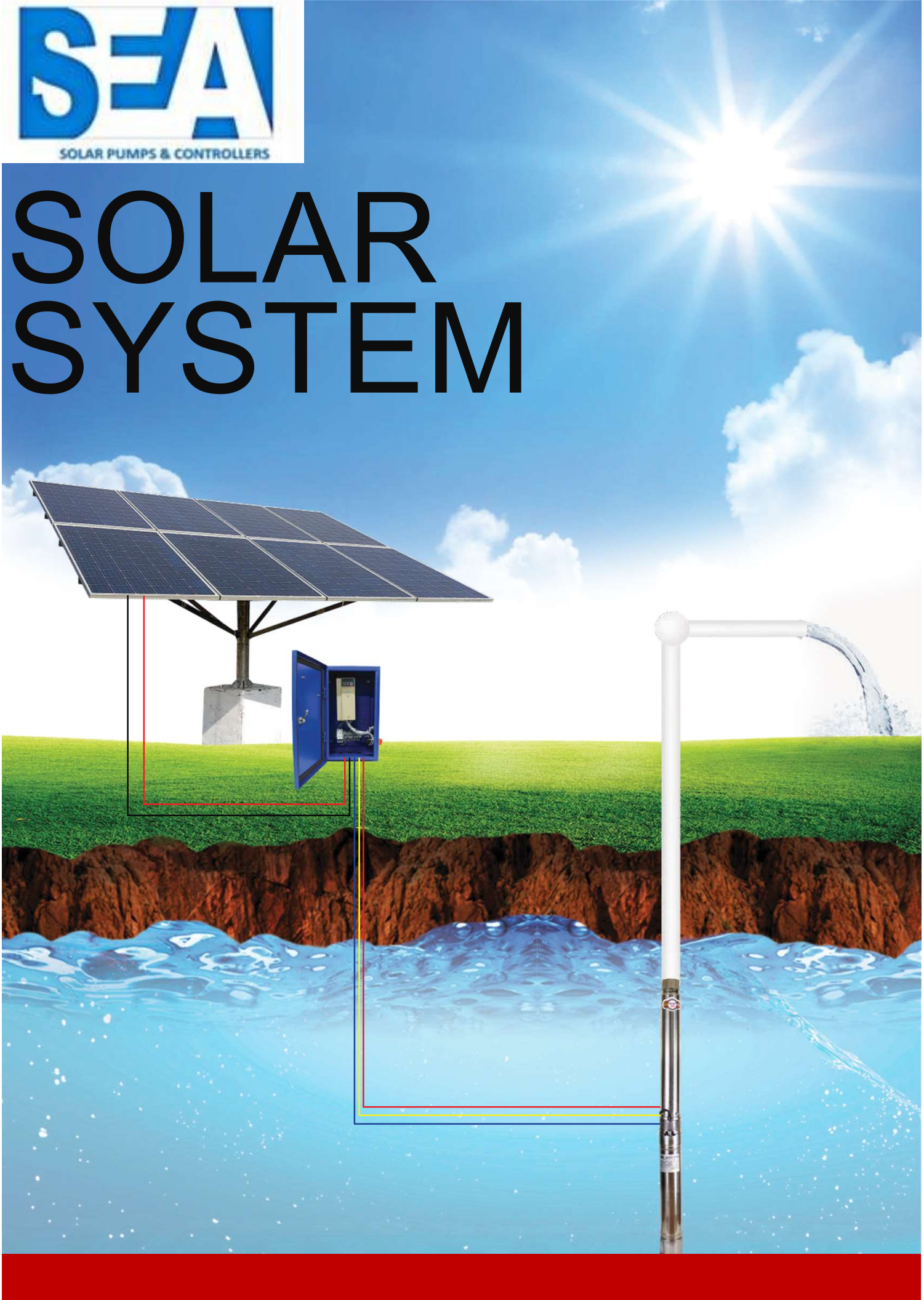
APPLICATIONS

- Flood irrigation of small fields
- Drip irrigation for farms
- Cattle watering
- Water supply for small villages, schools, hospitals and homes

SEA

SOLAR PUMPS & CONTROLLERS

SOLAR SYSTEM



SOLAR PUMPS & CONTROLLERS

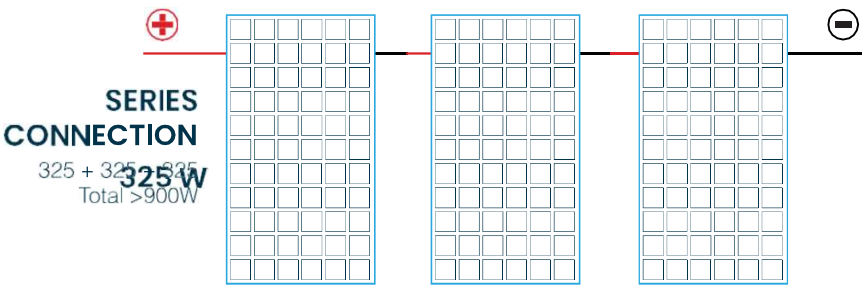
#SUBMERSIBLEPUMP

1 HP SOLAR SUBMERSIBLE PUMP SYSTEM

V4 Series

hp	kW	VOLTAGE	CURRENT A	CABLE SIZE (sq. mm)	SOLAR MODULE ARRAY
1(BLDC)	0.75	72	8A	1 x 3 x 2.5	335 W x 3 Nos. 3 Panels in Series

** Special design of Solar Module*



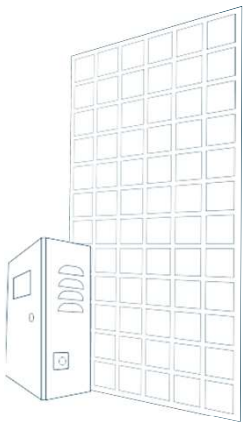
SOLAR PUMPS & CONTROLLERS

#SUBMERSIBLEPUMP

Submersible Pump		Submersible Motor	
PUMP SHAFT	SS 410	**RPM**	2800
SUCTION BRACKET	CAST IRON	**MOTOR SHAFT**	SS 410
PUMP HARDWARE	SS 304	**MOTOR BEARING BUSH**	LTB 5 GRADE
IMPELLER	NORYL/SS	**THRUST BEARING**	SS 410
IMPELLER TYPE	RADIAL	**LOWER & UPPER HOUSING**	CAST IRON/SS
STAGE CASTING	NORYL/SS	**STATOR SHELL**	SS
PUMP JACKET	SS	**WINDING WIRE**	3 Φ COPPER
PUMP BEARING BUSH	LEADED BRONZE	**MOTOR HARDWARE**	SS 304

Discharge Chart

hp	Voltage	Ampere (I_m)	Shut off Head (m)	Head (m) LPM			
1 (BLDC)	72	8A	120	30	50	60	70
				55	35	30	20

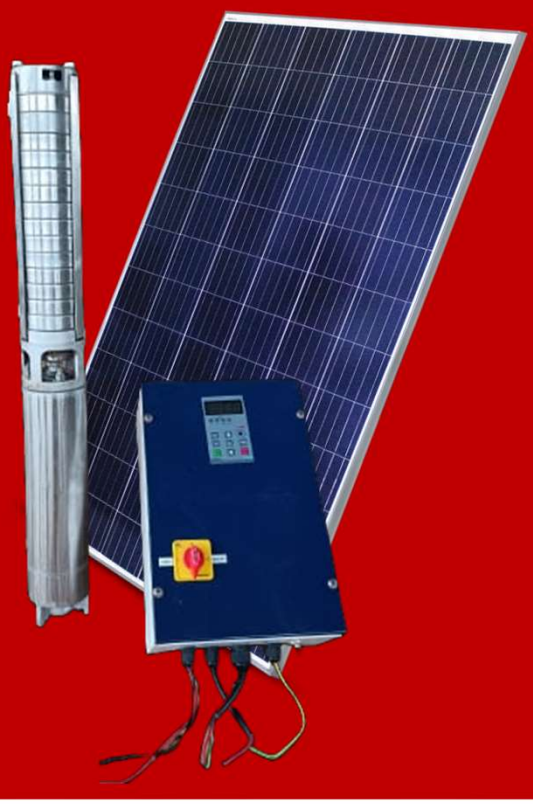


SOLAR PUMPS & CONTROLLERS

#SUBMERSIBLEPUMP

2 & 3 HP SOLAR SUBMERSIBLE PUMP SYSTEM

V4 Series



hp	kW	VOLTAGE	CURRENT A	CABLE SIZE (sq. mm)	SOLAR MODULE ARRAY
2	1.5	160	8A	1 x 3 x 2.5	325 W x 6 Nos. 6 Panels in Series
3	2.2	230	8A	1 x 3 x 2.5	325 W x 9 Nos. 9 Panels in Series

SOLAR PUMPS & CONTROLLERS

#SUBMERSIBLEPUMP

Submersible Pump		Submersible Motor	
PUMP SHAFT	SS 410	**RPM**	2800
SUCTION BRACKET	CAST IRON	**MOTOR SHAFT**	SS 410
PUMP HARDWARE	SS 304	**MOTOR BEARING BUSH**	LTB 5 GRADE
IMPELLER	NORYL/SS	**THRUST BEARING**	SS 410
IMPELLER TYPE	RADIAL	**LOWER & UPPER HOUSING**	CAST IRON/SS
STAGE CASTING	NORYL/SS	**STATOR SHELL**	SS
PUMP JACKET	SS	**WINDING WIRE**	3 Φ COPPER
PUMP BEARING BUSH	LEADED BRONZE	**MOTOR HARDWARE**	SS 304

Discharge Chart

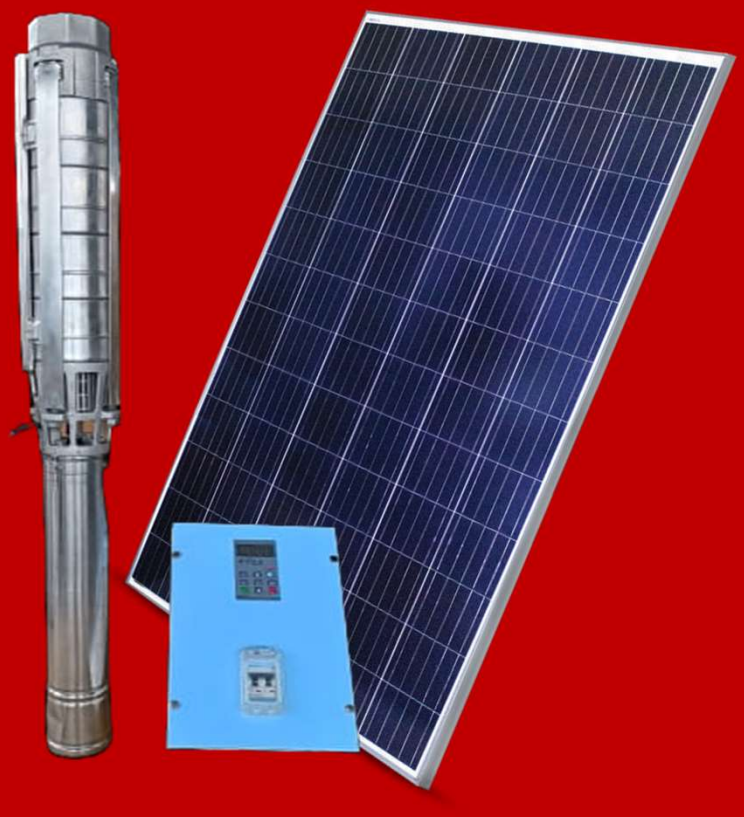
hp	Voltage	Ampere (I_m)	Shut off Head (m)	Head (m) LPM				
2	160	9A	120	30	50	70	90	100
				150	90	60	40	30
3	230	9A	130	30	50	70	90	110
				230	145	100	65	40

SOLAR PUMPS & CONTROLLERS

#SUBMERSIBLEPUMP

5 HP SOLAR SUBMERSIBLE PUMP SYSTEM

V4 Series



hp	kW	VOLTAGE	OUTER DIA. (mm)	CABLE SIZE (sq. mm)	SOLAR MODULE ARRAY
5 DC	3.7	380	142	1 x 3 x 2.5	325 W x 15 Nos. 15 Panels in Series

SOLAR PUMPS & CONTROLLERS

#SUBMERSIBLEPUMP

Submersible Pump		Submersible Motor	
PUMP SHAFT	SS 410	**RPM**	2800
SUCTION BRACKET	CAST IRON	**MOTOR SHAFT**	SS 410
PUMP HARDWARE	SS 304	**MOTOR BEARING BUSH**	LTB 5 GRADE
IMPELLER	SS 304	**THRUST BEARING**	SS 410
IMPELLER TYPE	RADIAL/MIXED	**LOWER & UPPER HOUSING**	CAST IRON/SS
STAGE CASTING	CAST IRON	**STATOR SHELL**	SS
PUMP JACKET	CAST IRON	**WINDING WIRE**	3 Φ COPPER
PUMP BEARING BUSH	LEADED BRONZE	**MOTOR HARDWARE**	SS 304

Discharge Chart

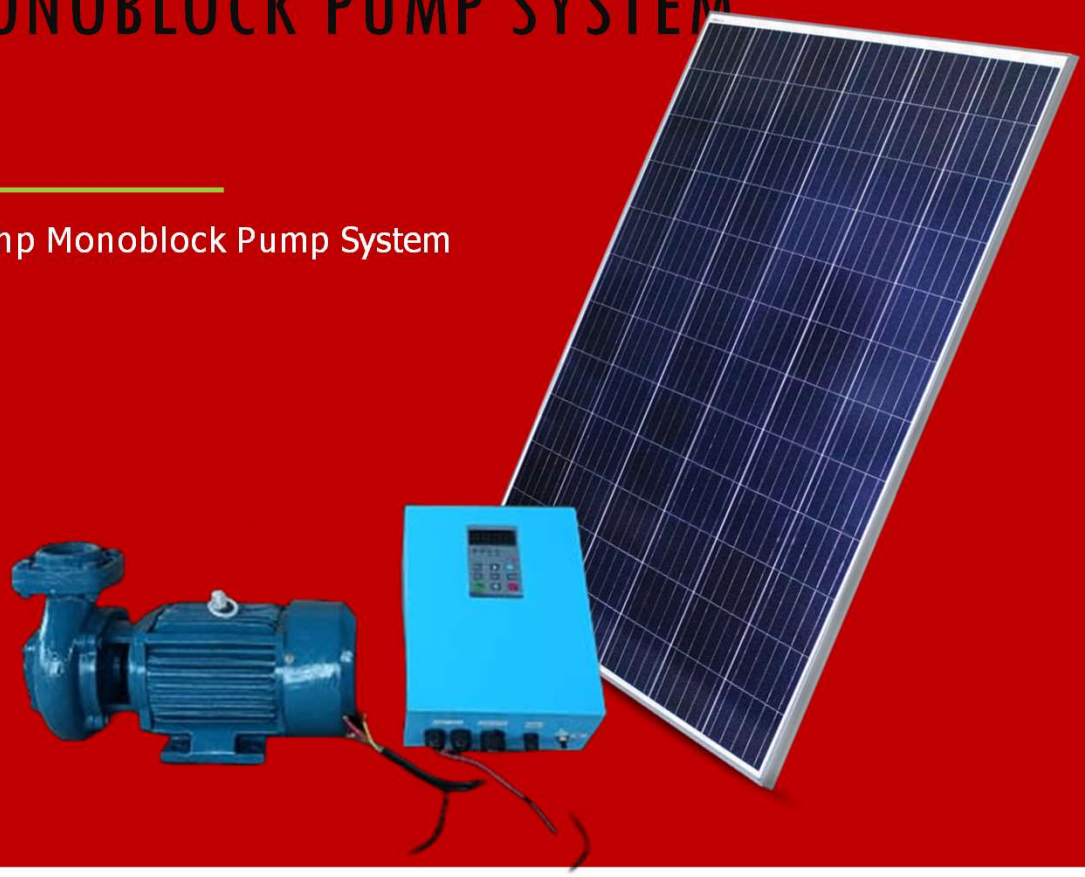
hp	Voltag	Ampere (I_m)	Shut off Head (m)	Head (m) LPM					
5	380	9A	150	30	50	70	90	110	130
				470	240	160	120	90	60

SOLAR PUMPS & CONTROLLERS

#SURFACEPUMP

MONOBLOCK PUMP SYSTEM

1to 5 hp Monoblock Pump System



hp	kW	VOLTAGE	CABLE SIZE (sq. mm)	SOLAR MODULE ARRAY
1	0.75	72	1 x 3 x 2.5	335 W x 3 Nos. 3 Panels in Series
2	1.5	160	1 x 3 x 2.5	335 W x 6 Nos. 6 Panels in Series
3	2.2	230	1 x 3 x 2.5	335 W x 9 Nos. 9 Panels in Series
5	3.7	380	1 x 3 x 2.5	335 W x 16 Nos. 15 Panels in Series

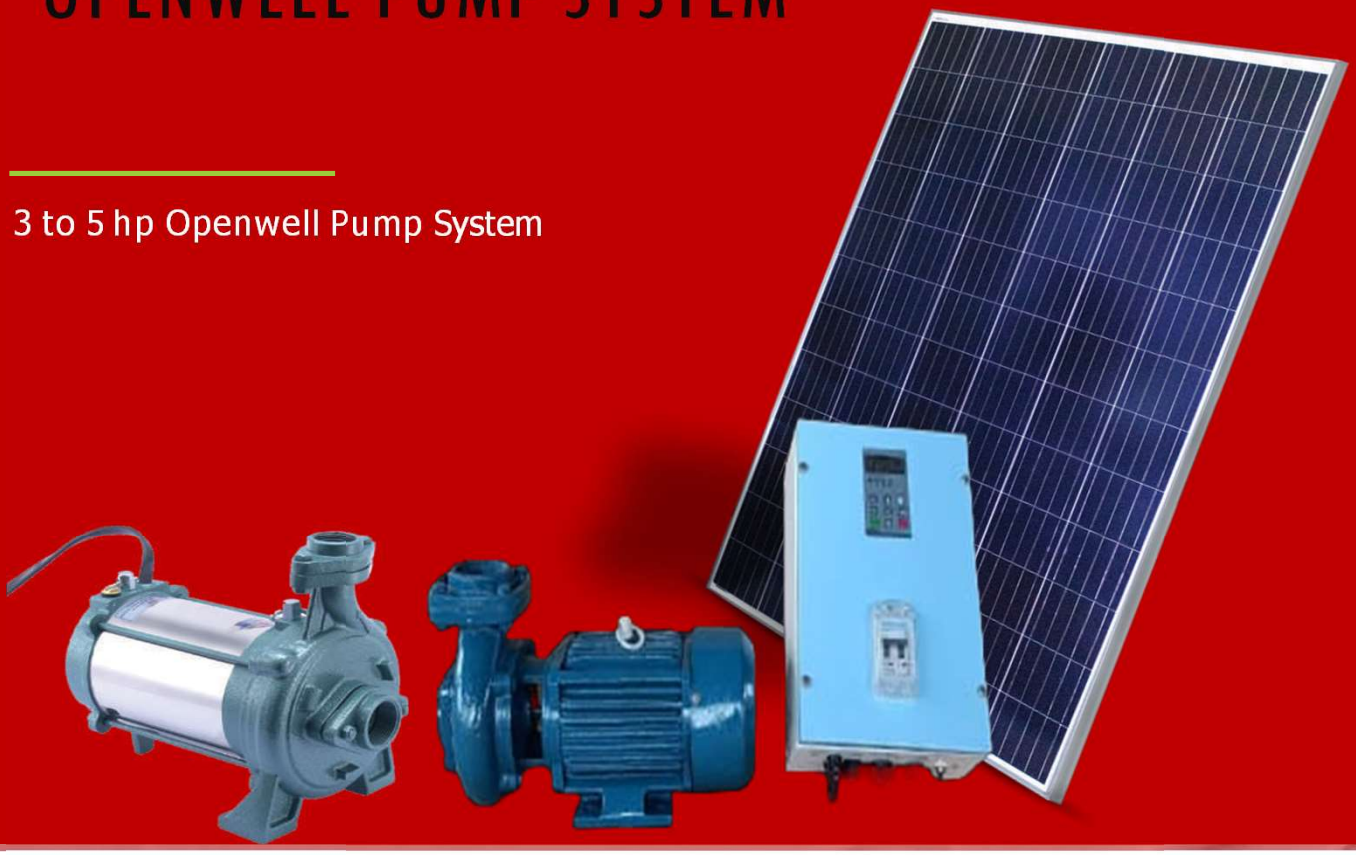
** Special design of Solar Module*

SOLAR PUMPS & CONTROLLERS

#OPENWELLPUMP

OPENWELL PUMP SYSTEM

3 to 5 hp Openwell Pump System



hp	kW	VOLTAGE	CABLE SIZE (sq. mm)	SOLAR MODULE ARRAY
3	2.2	230	1 x 3 x 2.5	325 W x 9 Nos. 9 Panels in Series
5	3.7	380	1 x 3 x 2.5	325 W x 15 Nos. 15 Panels in Series

SOLAR PUMPS & CONTROLLERS

#OPENWELLPUMP

Open-Well Pump

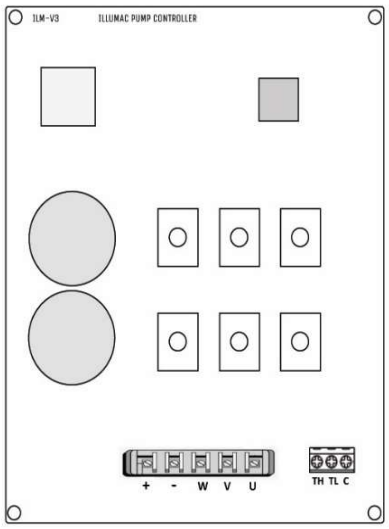
RPM	2800
Impeller	Cast Iron FG200
Pump Casting	Mild Steel
Mechanical Seal	Mild Steel
Pump Shaft	SS 410
Suction Bracket	Cast Iron
Pump Hardware	SS 410
Motor Shaft	SS 410
Motor Bearing Type	Ball Bearing
Stator Shell	Mild Steel
Winding Wire	Copper
Motor Hardware	SS 304

Discharge Chart

hp	Voltage	Ampere (I_m)	Shut off Head (m)	Head (m) LPM
3	230	9A	24	8 750
5	380	9A	28	15 800

^ All data mentioned here are at 50 Hz, it may vary according to various Environmental Conditions

Solar Controller Wiring



Terminal	Function definition	Description
+	Positive Input from Solar Connected in Series	MAX 1 HP -180V 2 HP-300 V
-	Negative Input from Solar Connected in Series	
R	Appropriate wire to motor	MAX output 380V 3Ø /12Amp
Y	Appropriate wire to motor	
B	Appropriate wire to motor	
TH	Full water detection alarm & constitutes loop with COM	Float Sensor Connection
TL	Full water detection reset &constitutes loop with COM	
C	Full water detection reset & constitutes loop with COM	
GND	Analog signal ground	

Basic Operation and Trial Run

Key	NAME	Function
SHIFT 1	SHIFT	Press to Scroll Through different Parameters.
ENT 4	ENTER	Press to Save the modified value of Selected Parameter to memory.
2	UP	Increment Selected Parameter value
7	DOWN	Decrement Selected Parameter value
RUN 6	RUN	Press this key to Start the Pump (if not already in running Condition)
STOP 8	STOP	Press this key to Stop Pump (if Running). And Press to Reset Fault if in Fault Condition Status Then Press RUN

SOLAR PUMPS & CONTROLLERS

Keypad display	Fault code	Fault type	Possibility reason	Troubleshooting
0001	0001	Dry Run	• Checkwater available in lower tank/ Borewell.	• Press Stop key to Reset • Press Run to Start again
0002	0002	Under voltage or over at runs	• Powervoltagetoolow • Power grid capacityis too low or with big currentimpact • DC maincontactor don't close • Power voltage fluctuation overlimit	• Check inputpower • Promote the power supplysystem • Seek support from factory • Confirm is Input Voltage Within range of Drive Model.
0003	0003	Low Power	• Powervoltagetoolow • Power grid	• Confirm that No Shadow on PV panel or Dust • Vmp setting not Matching
0004	0004	Tank full / OFF	• Tank is full • Sensors touching each other • If Float type sensor, not connected properly.	• Confirm Upper Tank Sensor position • Or Confirm ON/OFF switch Position
0005	0005	Over Current / Short Circuit	• Loose connection • Short Circuit in connection • Checkwiringand insulation.	• Check Pump is not Jam • Check Wiring From controller to pump.
0007	0007	Over Temperature	• Temperature istoo high. • Airchannelisblocked. • Fanconnectionparts isloose. • Fan isdamaged.	• Make theenvironment meet the requirement. • Cleartheairchannel. • Confirm thecontroller is mounted Vertically and have placed in Ventilated space

Motor ParameterSetting

According to the motor nameplate (Motor rated power), (motor rated frequency), (motor rated speed), (motor rated Voltage).Other motor parameters can be obtained through self-learning of the inverter, the specific methods of operation are as follows:

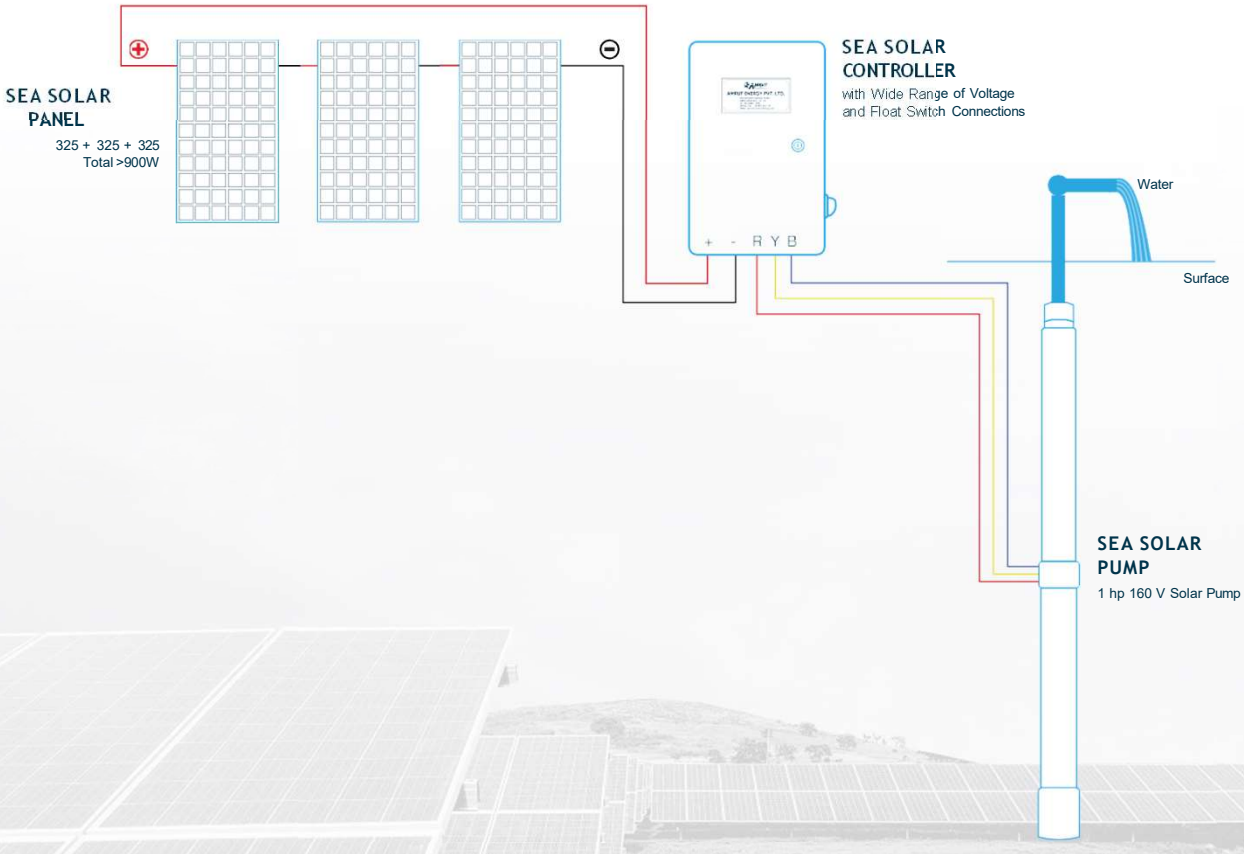
①❷③④	A Group	A _ _ _	Select A or P Group
①❷③④	A Sub Param	A 0 0 0	Motor Resistance
①❷③④	A Sub Param	A 0 0 1	Motor Inductance
①❷③④	A Sub Param	A 0 0 2	Motor Power
①❷③④	A Sub Param	A 0 0 3	Angle Offset
①❷③④	A Sub Param	A 0 0 4	L. Angle Factor
①❷③④	A Sub Param	A 0 0 5	Pole Pair

#HOWTO**INSTALL?**

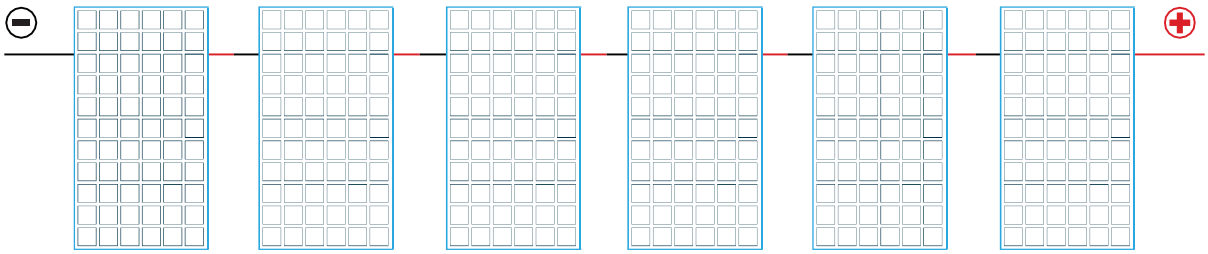
Example : 1hp Solar Pump installation

1hp Submersible Pump includes

1 hp Submersible Pump
1 hp Solar Controller
325 W Solar Panel - 3 Nos./4 Nos.
Fixed Structure/ Movable Structure/ Tank Structure
Required Nut Bolts



Example : 6 Panels In Series Connection



42 V + 42 V + 42 V + 42 V + 42 V + 42 V = 252 V

9 A

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