

DC Submersible Solar Pump

Model: RDW900

Model	Description
RW010H030	Solar submersible DC pump, Model: RW010H030
	Rated head: 30mtr., 1.0HP, Shut off head 45 mtr., With RDW900 controller
RW010H060	Solar submersible DC pump, Model: RW010H060
	Rated head: 60mtr., 1.0HP, Shut off head 90 mtr., With RDW900 controller

Model	RW010H030	RW010H060	Motor : Permanent Magnet Brushless DC Motor
Rated head (mtr.)	30	60	
Optimum Head range (mtr.)	20-40	50-70	Pump : SS-304
Discharge (LPD)	20,000 [#]	10,000 [#]	material (In contact with water)
Shut Off head (mtr.)	45	90	
Array Rating	900 Wp		Water output figures are on a clear sunny day with 3 times tracking of
Input Voltage (Vmp.)	≥105V		SPV panel, under “Average Daily Solar Radiation” condition of 7.15 KWh/sq.m
Input Max. Current	8.5 Adc		on the surface of PV Array (i.e. coplana with PV module)
Ambient Temperature Range	Up to 50 ^o C		
MNRE test certificate reference (Report no.)	-		Stander Test Condition : AM=1.5, E=1000W/m ² , Cell Temperature : 25°C

This water output is at STC conditions and testing as per MNRE's latest specifications for Solar water pumps for drinking water.

Product Introduction

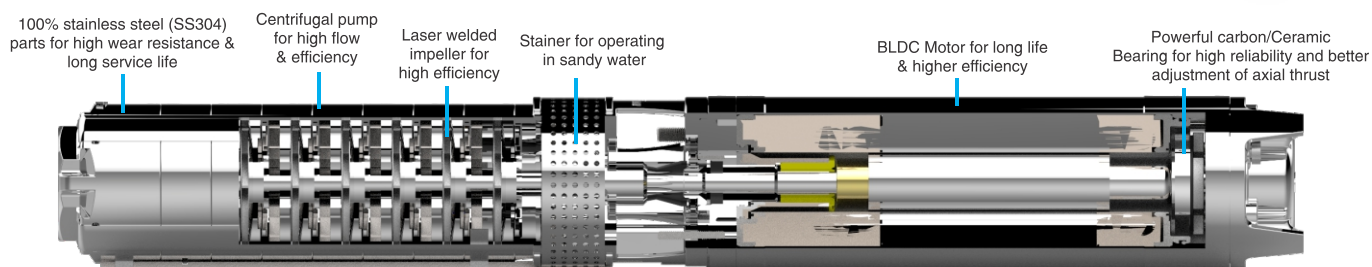
Rotosol solar submersible pump has a stainless steel SS-304 pump bowl and impellers which are precision laser welded. This ensures long life and high reliability against dust, sand and abrasive elements. The pump elements are driven by a sealed "Brushless DC motor" filled with oil/water. The motor is made from stainless steel 304 shell and sealed for life. Brushless DC motors has very high efficiency. The motor is driven by a controller which has in built MPPT (Maximum power point tracker), dry running protection and overheating protection. A special thrust bearing supports the rotor of the motor to withstand the axial thrust of the water column when the pump is switched off. .

Application

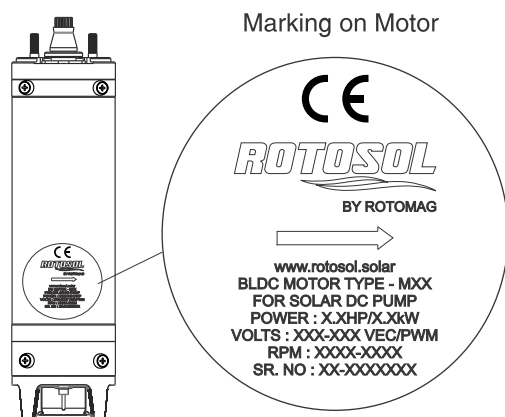
- Drinking water supply
- Livestock watering
- Pond management
- Irrigation
- Village water supply



Features and benefits



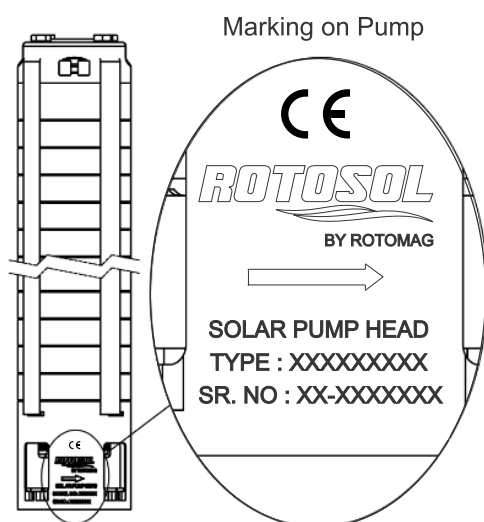
Specifications of BLDC Submersible motor:



► Protection : IP68

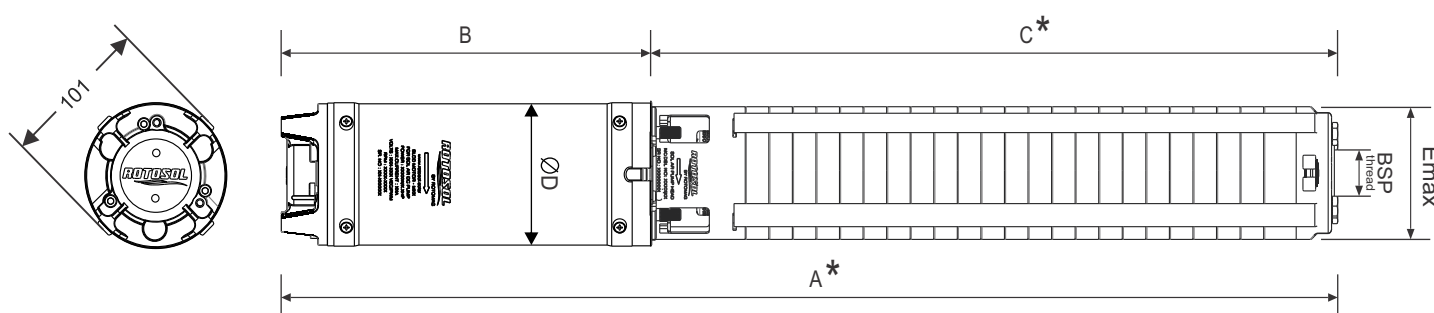
BLDC motor type	M12
Power	1.0HP/0.75kW
Output VEC PWM	38-100
RPM	1800-3300

Specifications of solar pump head:



Type	Rated head (mtr.)
RW010H030	30
RW010H060	60

Dimension of DC submersible solar pump head:



Model	Type	Dimensional Details						Module Details		Performance Curves No.	Approx. Nett Weight in Kg. (± 1.5 kgs.)
		A (mm)	B (mm)	C (mm)	D (mm)	E max (mm)	BSP	Module Size (Wp)	No. of Module		
RDW900	RW010H030	795	270	525	96.4	92	1.25"	250	03	010H030	13.5
	RW010H060	795	270	525	96.4	92	1.25"	250	03	010H060	13.5

* The length is subject to change without notice as R&D is a continuous process and the modification may be required to suit the modification in I-V curves of the modules and the water output at varying heads.

Specifications of BLDC Submersible controller:

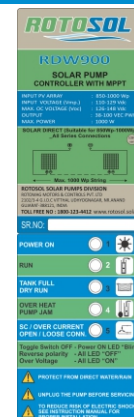
Input PV array	Input voltage (Vmp.)	Open circuit voltage (Voc)	Output VEC/PWM
850-1000 Wp	110-129 Vdc	126-148 Vdc	38-100 V

Features of Controller:

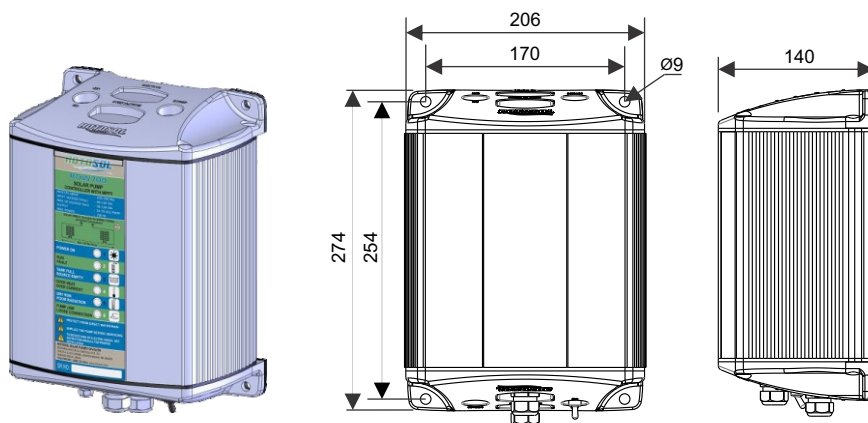
- ▶ Fully enclosed with IP54 protection as per IS/IEC 60529:2001
- ▶ Multiple fault diagnosis indications.
- ▶ Integrated MPPT (Maximum Power Point Tracking).
- ▶ "Tank Full" sensor for auto start and auto stop.

Protection against

- Open Circuit
- Accidental Short circuit (2 min. max.)
- Reverse Polarity
- Dry run
- Over & under voltage protection
- Overload protection
- Temperature protection



Mounting Dimensions:



IEC certificate nos. for controller:

- ▶ I.P. test certificate no. RP-1819016654

Controller Nett weight

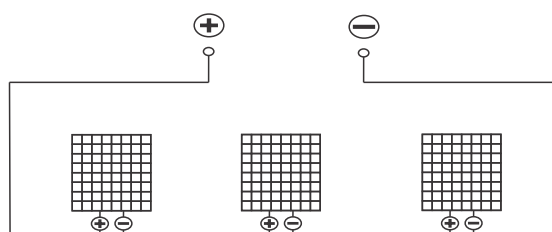
3.7 ± 1 kg.

Installation Requirements:

Preferred Solar PV Array:

300 Wp, 72 Cell x 3 Panels: 900 W

Panel specifications	
Voltage at maximum power Vmax	38.88 V
Open circuit voltage Voc	44.56 V
Current at maximum power Imax	7.71 A
Short circuit current Isc	8.48 A

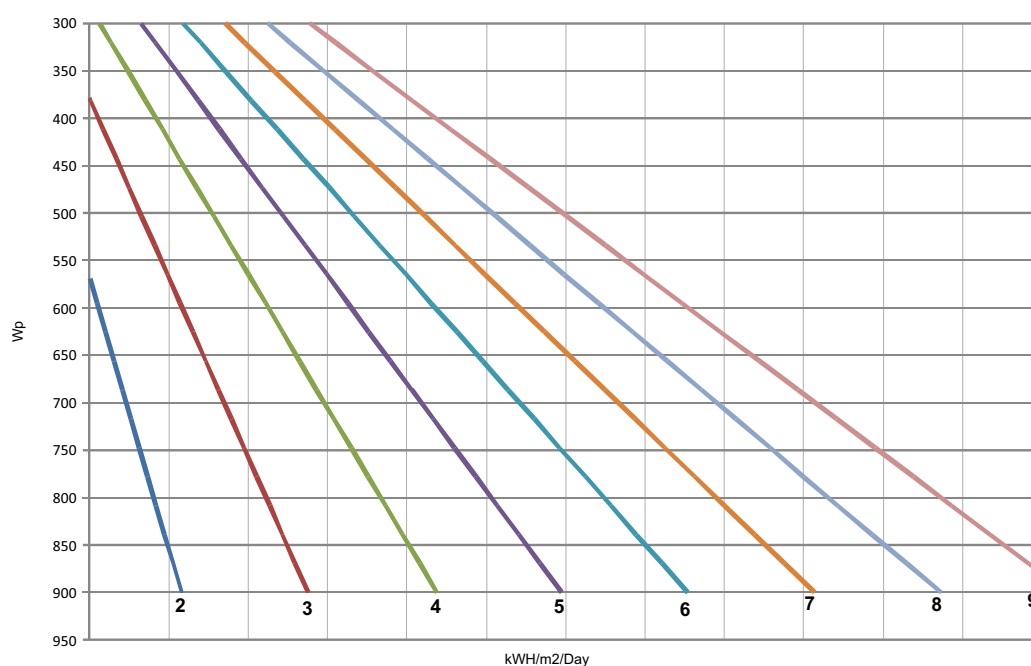
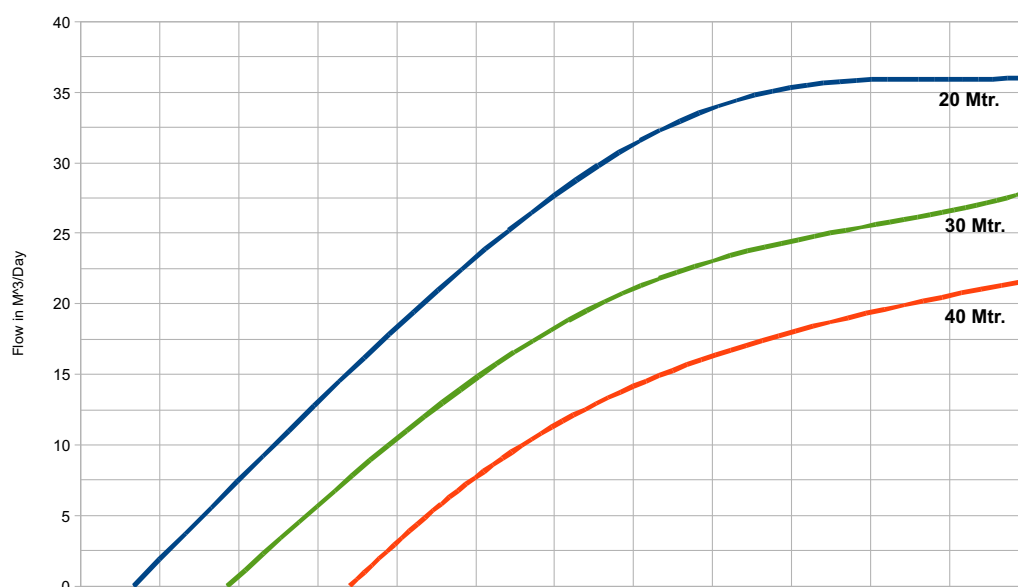


3 Series

Performance characteristics of RW010H030 (No. :- 010H030)

This curves show the performance range of model RDW900 series of pumps with solar PV array.

- ▶ Ambient Temperature 50°C max.
- ▶ Based on 11 hours standard day.
- ▶ The water output is with continuous tracking, without tracking water output may reduce by 10-25% depending on angle of incidence.
- ▶ The actual output of PV array may be lower up to 30% depending on heat, dust and other losses.
- ▶ Irradiance measured on an inclined plane.



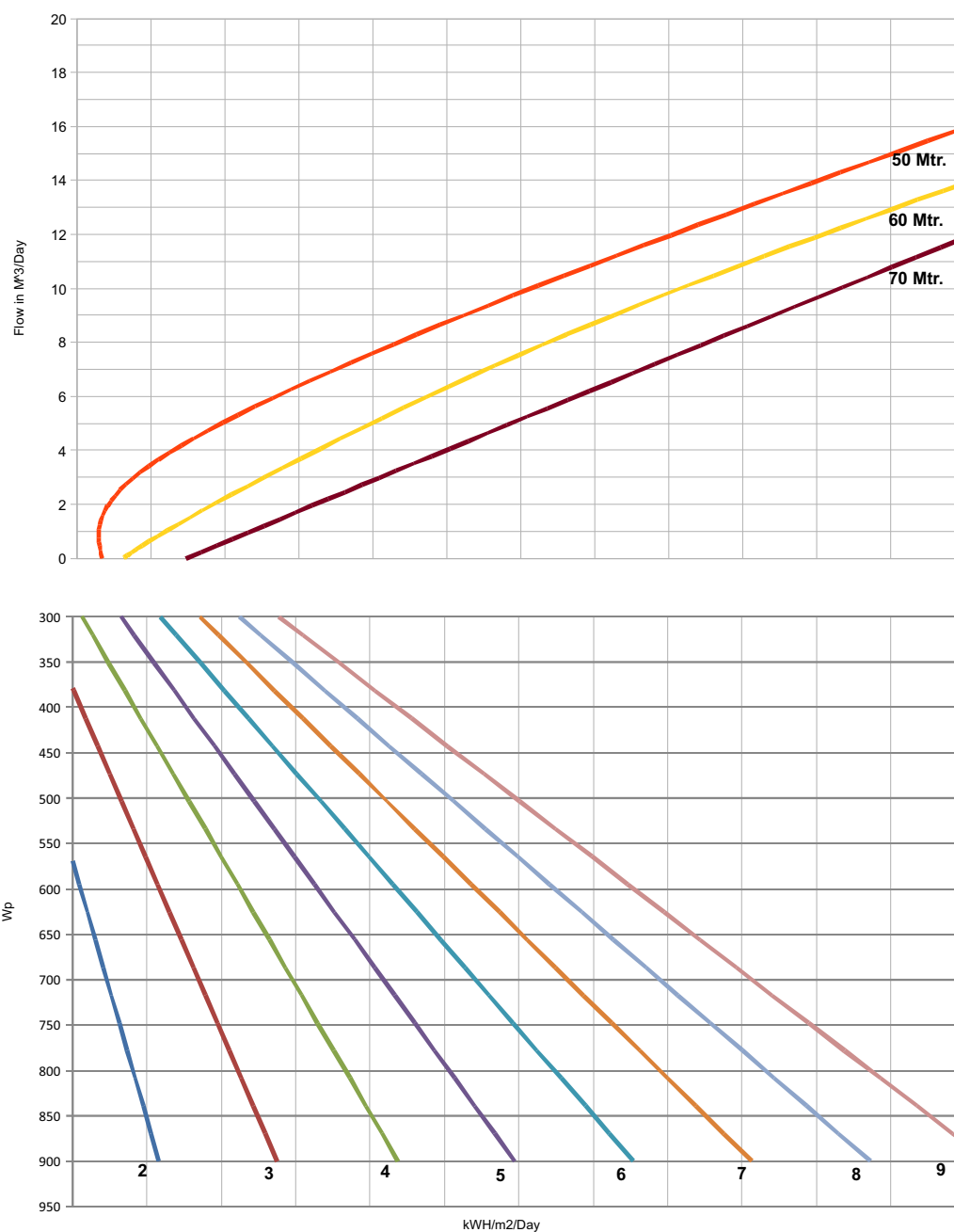
Explanation on above Charts:

An irradiation value and the required head in meters are given for a certain solar pumping system. Connect the point for the power output in Wp of the Solar array with an irradiation value, move vertical upwards to the intersection with the required head curve, then horizontal to the left to find the daily quantity of water that can be pumped (m³/day).

Performance characteristics of RW010H060 (No. :- 010H060)

This curves show the performance range of model RDW900 series of pumps with solar PV array.

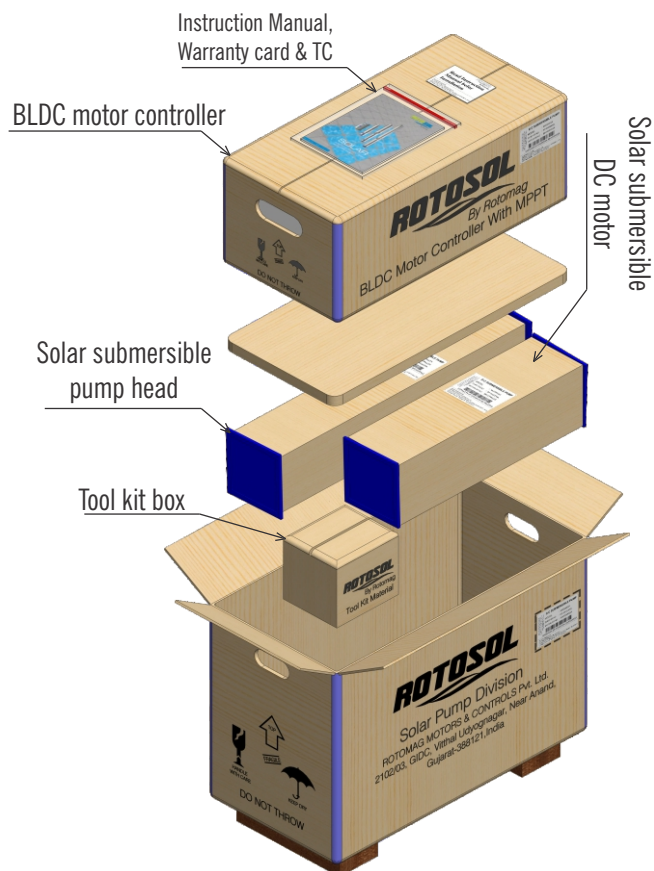
- ▶ Ambient Temperature 50°C max.
- ▶ Based on 11 hours standard day.
- ▶ The water output is with continuous tracking, without tracking water output may reduce by 10-25% depending on angle of incidence.
- ▶ The actual output of PV array may be lower up to 30% depending on heat, dust and other losses.
- ▶ Irradiance measured on an inclined plane.



Explanation on above Charts:

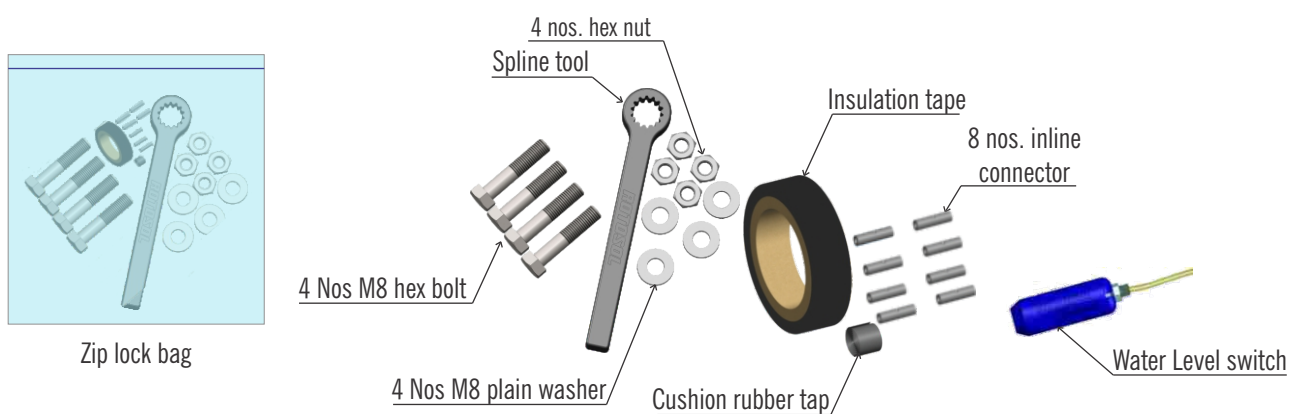
An irradiation value and the required head in meters are given for a certain solar pumping system. Connect the point for the power output in Wp of the Solar array with an irradiation value, move vertical upwards to the intersection with the required head curve, then horizontal to the left to find the daily quantity of water that can be pumped (m³/day).

Pump Set Packing Dimensions & Weight:



	L	W	H	
Type	L (mm)	W (mm)	H (mm)	Approx. packing weight (kgs)
RW010H030	700	350	450	27
RW010H060				

Supplied Tool Kit Parts:



The BLDC Motor & Pump head cannot be used separately. They are uncoupled only for transportation convenience. They can be operated only if coupled together. Do not attempt to use them separately with any other device or parts, otherwise they will be damaged.

Technical specifications/details mentioned in this datasheet are subject to change without prior notice. Please contact our sales/marketing team for any updated information or any change done.

Solar Pumps Division

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Rotosol is a Solar Pump Brand of Rotomag