

DC Submersible Solar Pump

Model: RDW750

Type	Description
RW007H030	DC Submersible Solar pump type: RW007H030 Rated head: 30mtr., 0.75HP, Shut off head 45 mtr., With RDW750 controller
RW007H060	DC Submersible Solar pump type: RW007H060 Rated head: 60mtr., 0.75HP, Shut off head 90 mtr., With RDW750 controller
RW007H090	DC Submersible Solar pump type: RW007H090 Rated head: 90mtr., 0.75HP, Shut off head 120 mtr., With RDW750 controller

Type	RW007H030	RW007H060	RW007H090	Motor : DC Motor
Rated head (mtr.)	30	60	90	Pump : SS-304 material (In contact with water)
Optimum Head range (mtr.)	20-40	50-70	80-100	
Discharge (LPD)	16,700 [#]	8,400 [#]	4,200 [#]	
Shut Off head (mtr.)	45	90	120	
Array Rating	750 Wp			Water output figures are on a clear sunny day with 3 times tracking of SPV panel, under “Average Daily Solar Radiation” condition of 7.15 KWh/sq.m on the surface of PV Array (i.e. coplanar with PV module)
Input Voltage (Vmp.)	≥ 84 V			
Input Max. Current	8.5 Adc			
Ambient Temperature Range	Up to 50° C			
MNRE test certificate reference (Report no.)	-			Stander Test Condition : AM=1.5, E=1000W/m², 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.

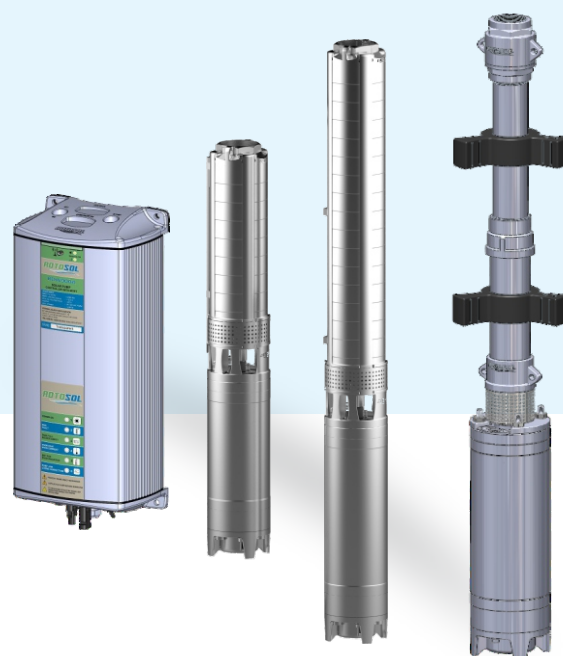
Product Introduction

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 inbuilt 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



100% stainless steel (SS304) parts for high wear resistance & long service life

Centrifugal pump for high flow & efficiency

Laser welded impeller for high efficiency

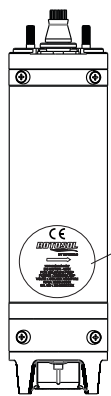
Strainer for operating in sandy water

BLDC Motor for long life & higher efficiency

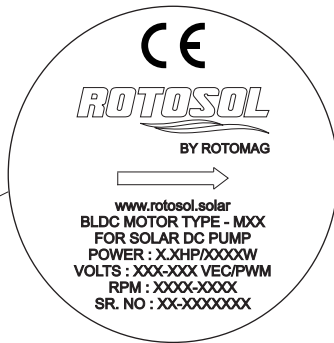
Powerful carbon/Ceramic Bearing for high reliability and better adjustment of axial thrust



Specifications of BLDC Submersible motor:



Marking on Motor



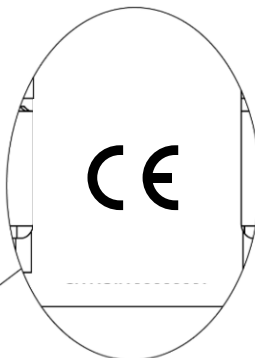
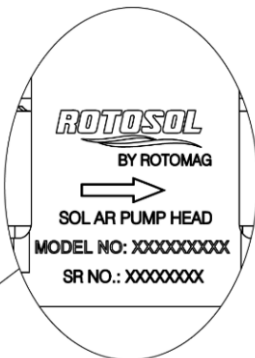
BLDC motor type	M07
Power	0.75HP/560W
Output VEC/PWM	35-79
RPM	1800-3300

► Protection : IP68

Specifications of solar pump head:

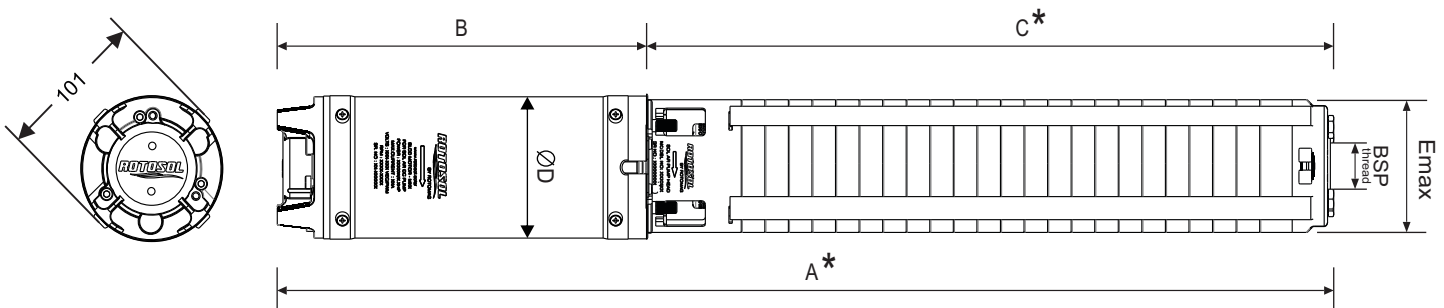
Marking on Pump

CE mark on right side of the pump head details



Type	Rated head (mtr.)
RW007H030	30
RW007H060	60
RW007H090	90

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		
RDW750	RW007H030	795	270	525	96.4	92	1.25"	250	03	007H030	13.5
	RW007H060	795	270	525	96.4	92	1.25"	250	03	007H060	13.5
	RW007H090	860	270	590	96.4	92	1.25"	250	03	007H090	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:

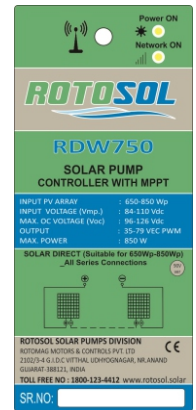
Input PV array	Input voltage (Vmp.)	Open circuit voltage (Voc)	Output VEC/PWM
650-850 Wp	84-110 Vdc	96-126 Vdc	35-79 V

Features of Controller:

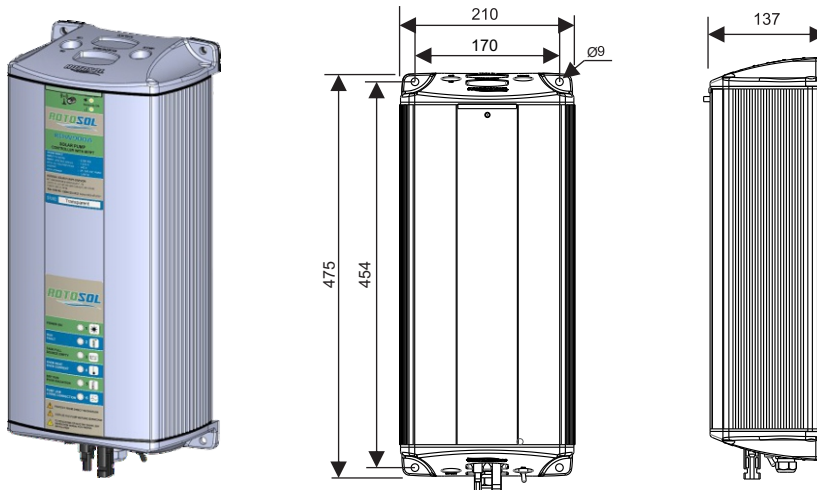
- ▶ Fully enclosed with IP54 protection as per IEC 60529:2013-08 Edition 2.2
- ▶ Multiple fault diagnosis indications.
- ▶ Integrated MPPT (Maximum Power Point Tracking).
- ▶ "Tank Full" sensor for auto start and auto stop.

Protection against

- Open Circuit
- Accidental Short circuit (2 min. max.)
- Reverse Polarity
- Dry run



Mounting Dimensions:



IEC certificate nos. for controller:

- ▶ I.P. test certificate no. 19615688001

Controller Nett weight

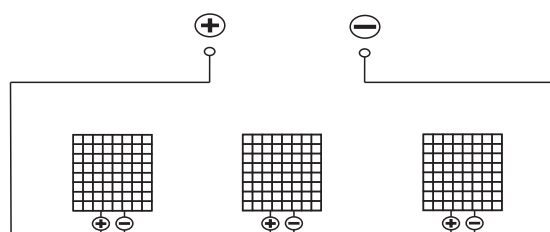
6.0 ± 1 kg.

Installation Requirements:

Preferred Solar PV Array:

250 Wp, 60 Cell x 3 Panels: 750 W

Panel specifications	
Voltage at maximum power Vmax	30 V
Open circuit voltage Voc	37 V
Current at maximum power Imax	8.3 A
Short circuit current Isc	8.78 A

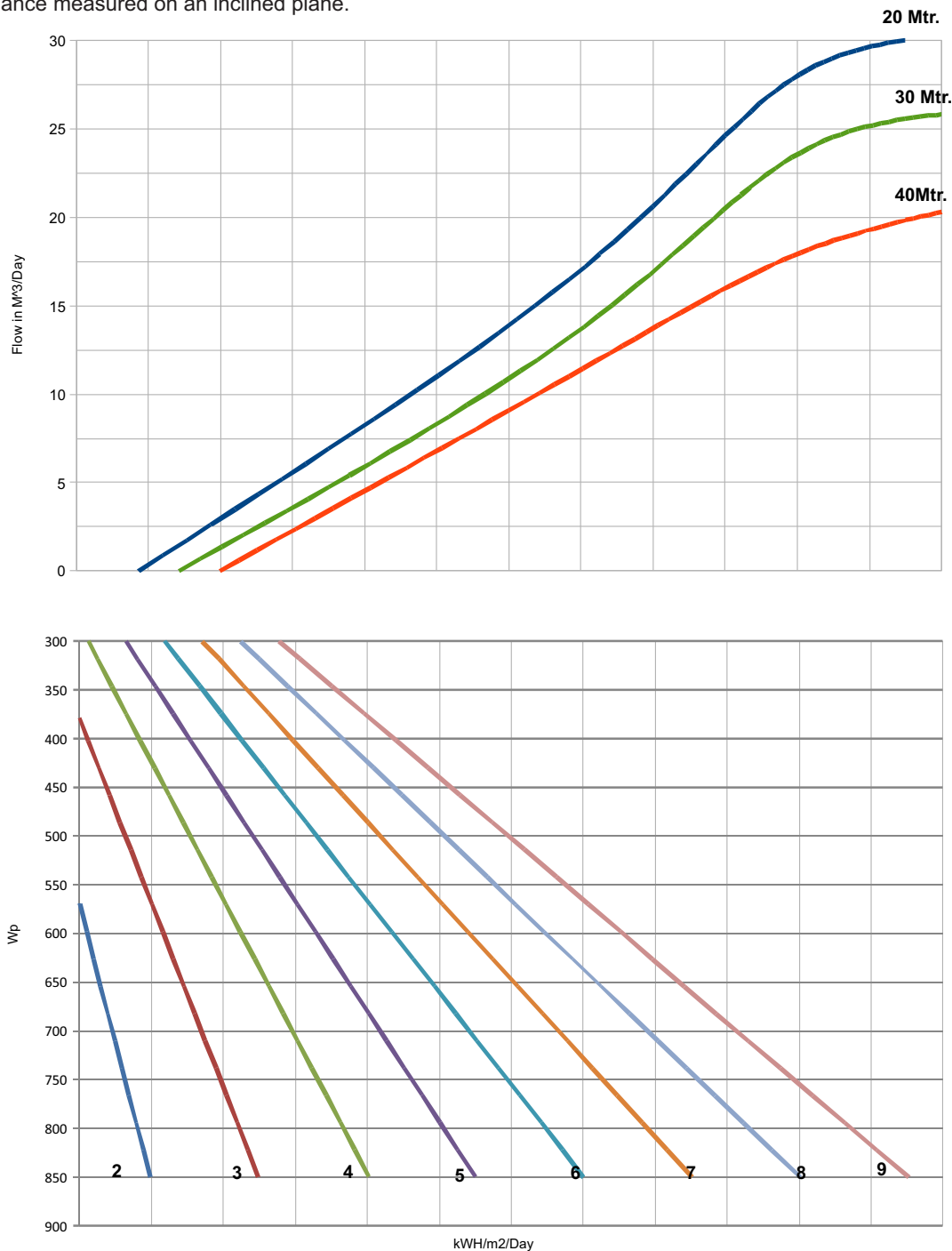


3 Series

Performance characteristics of RW007H030 (No. :- 007H030)

This curves show the performance range of model RDW750 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.



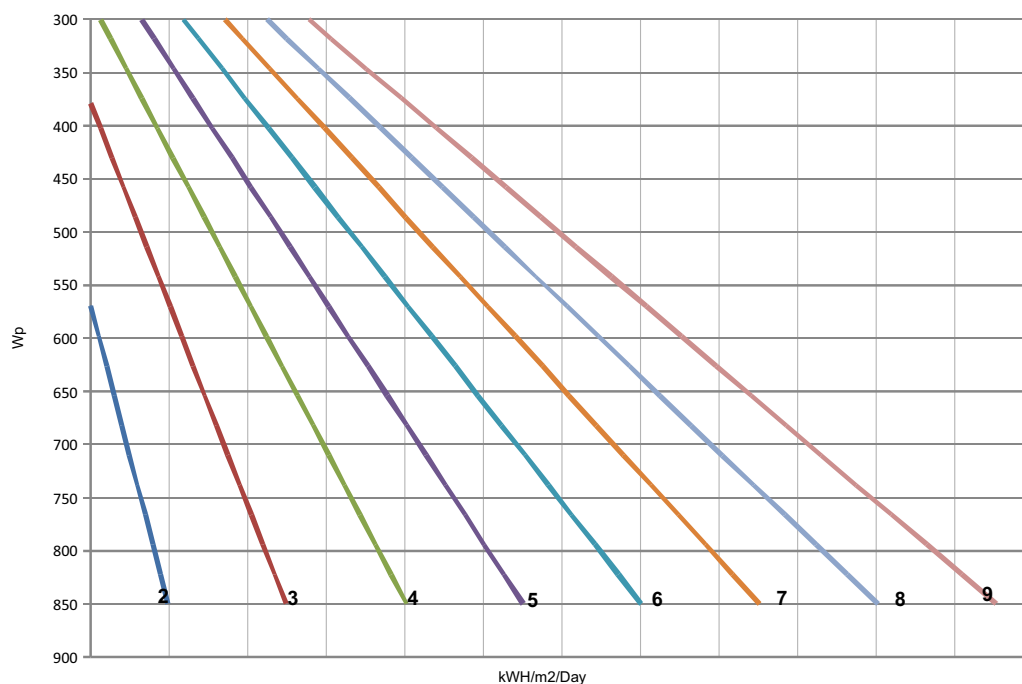
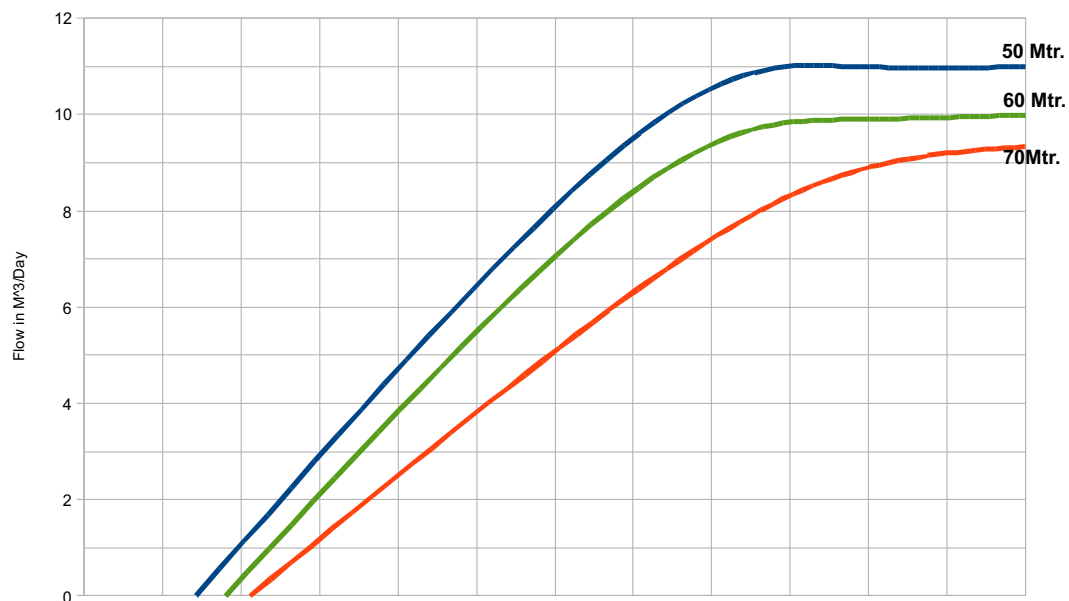
Explanation on above Charts:

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 RW007H060 (No. :- 007H060)

This curves show the performance range of model RDW750 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.



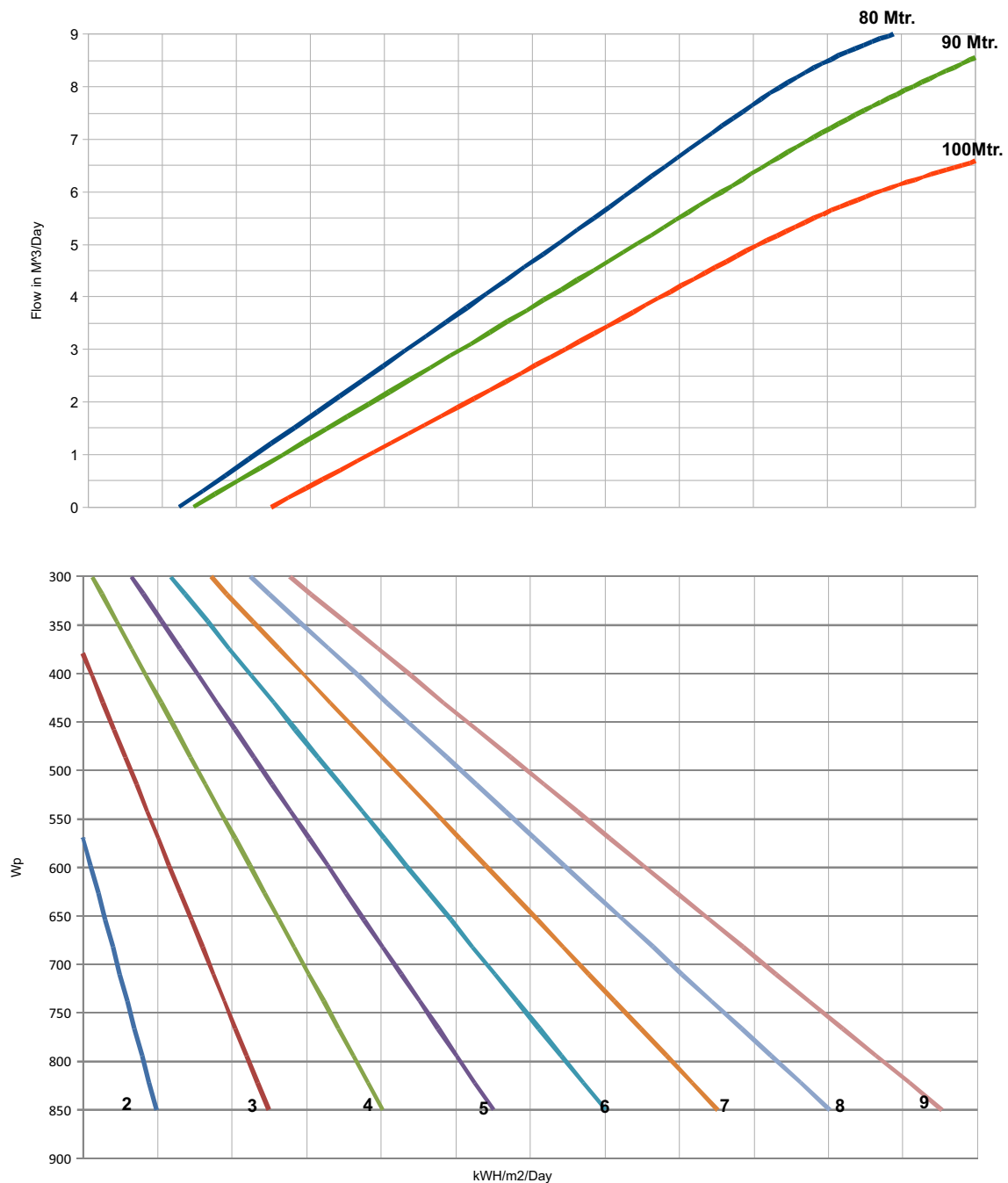
Explanation on above Charts:

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 RW007H090 (No. :- 007H090)

This curves show the performance range of model RDW750 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 Controller With Integrated Remote Monitoring System

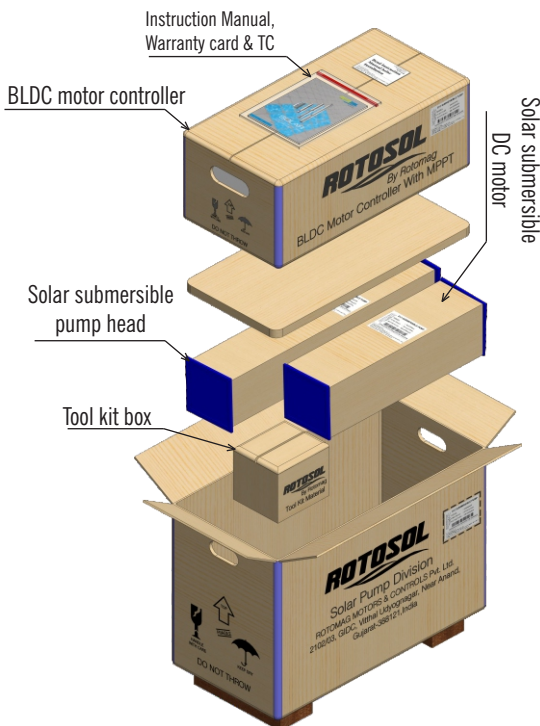
Remote monitoring system has been integrated with pump controller so that actual field information about voltage, current, temperature and error conditions are available with time on desktop computer as well as on mobile application.

Description of system:

The remote monitoring system integrated with the DC solar pump controller comprises of GPRS based data transmission modem in an IP54 enclosure. SIM card and SD card are to be separately inserted for remote monitoring system to start transmitting data to our server.

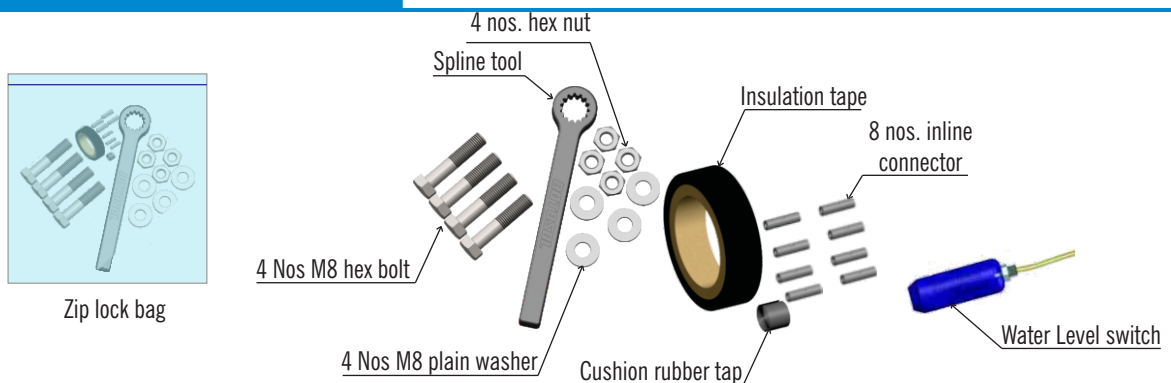
The operational data including Input DC voltage, Input DC current, Power (kW), Pump on hour, Number and nature of faults are processed and summarized reports are available. The reports show pump performance and faults in daily, monthly and user configurable periods. This data is transmitted to our server accessed by individual users or corporate users using mobile device or on desktop using appropriate login credentials.

Pump Set Packing Dimensions & Weight:



	L	W	H	
Type	L (mm)	W (mm)	H (mm)	Approx. packing weight (kgs)
RW007H030	700	350	450	27
RW007H060				
RW007H090				

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