

USER MANUAL

DC Brushless Solar Submersible Water pump

Specification

Model	SF242T-40
Max flow	2000L/h
Max lift	40m
Power range	110~675w
Motor	Permanent magnet DC brushless motor
Max rotational speed	3500~4000rpm
Working voltage range	18~45v
Current	6~15Amps
Efficiency	91%
Operating life	20,000 hrs
Controller	Internal MPPT controller
Recommended working lift	0~30m

Material

Pump housing is made of stainless steel 201/304; HB≤230 ; HRB≤135 ; HV ≤280

Pump's internal controller is mainly made of PCB and aluminium alloy.

Characteristic

This pump's power unit is **single screw driven by double motors**, there is a built-in MPPT controller which means the pump can be connected to solar panel directly. The pump's working voltage is 18v~45v, when input voltage is generally out of it(>45v or <18v), the pump will stop working automatically, then the pump will test the input voltage every 5 minutes and restart when input voltage is normal. We are going to add water shortage protection for pump, but the pump shouldn't be used while there is no water at present.

Caution:

The current arrange in above graph is 6~15A, if overload the pump, the current & torque might be higher, and pump's max lift would be higher in theory, but too heavy current will damage the motor, therefore the pump should be used at recommended lift.

Too long wire will cost more input voltage for the pump, the pump's working condition is up to the input voltage and total working lift. 8AWG or 7AWG wire is necessary when the wire's total length is longer than 30m.

Here are some improper usage below.

1. Press or cover the outlet port/pipe to get higher lift.
2. The pump sucks in air rather than water.
3. The pump working in the water with too much impurities.

Warm tips:

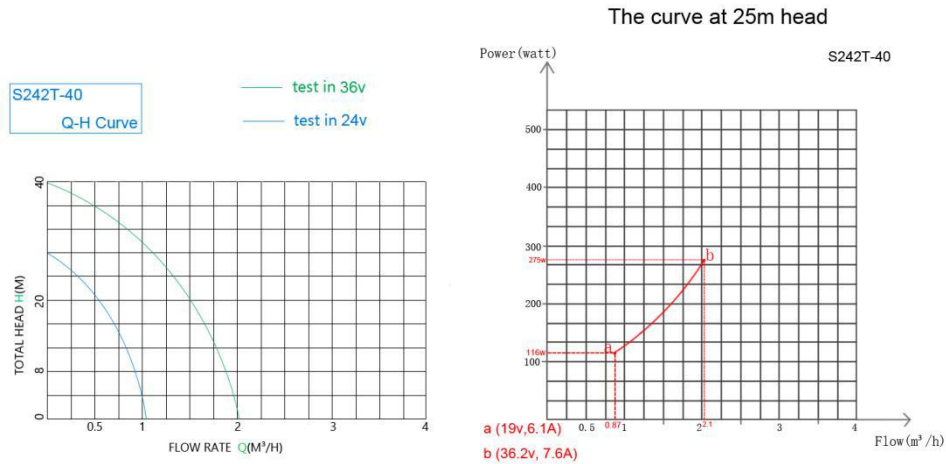
1. The pump should put on a "sleeve" if it works in impure water.
2. Fix the pump by strong rope or iron wire if the pump works in deep well.
3. Add or cut the solar panel properly according to weather.
4. Clean the pump's intake and outlet regularly.
5. If you don't have enough solar panel and don't want to add more panels, try add a

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battery and a solar charge controller between the pump and solar panel, even though a small capacity battery will be enough.

Pump's Q-H curve



Power source for the pump

The pump can be driven by solar panel or battery.

1.4~8 pcs 24v 100w solar panels connect in parallel.

2. 2 or 3 pcs 12v batteries connect in series(36v output voltage is ideal).

Installation

There are 2 kinds of installation for different weather.

1. In sunny days.

Connect the pump directly to solar panel, one extra on/off switch is necessary if there is no switch on solar panel kit.

2. In cloudy days.

It is similar with the installation in sunny days, only need to add a battery and solar charge controller between the pump and solar panel, the battery will provide sufficient power for the pump when the solar panel cannot afford it.

