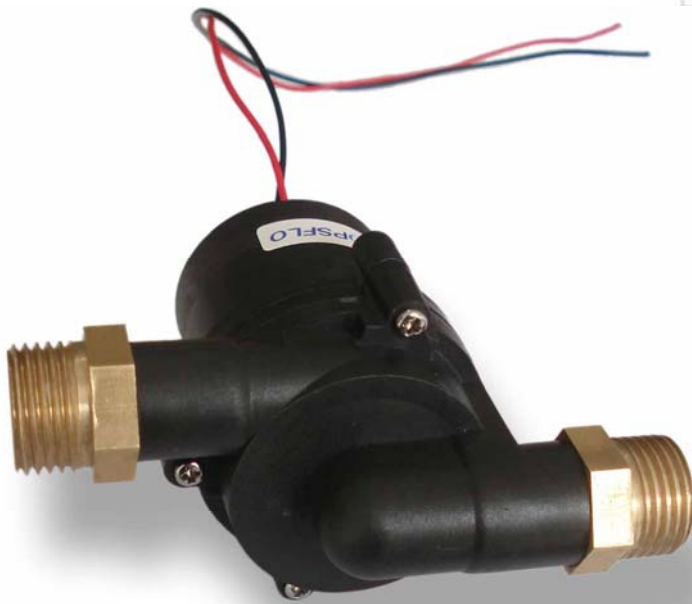


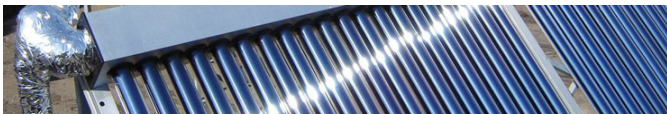
TOPSFLO

TS5 SOLAR DC CIRCULATION PUMP



Specifications

Voltage: 8V~24V DC (Standard:12V DC)
Max Flow Rate: 12 L/Min
Max Water Head: 3M
Brass 1/2" BSP / NPT male Inlet/Outlet
Max system pressure: 10Bar
Max working temperature: 110°C (230° F)
Min start-up power consumption less than 2 Watt
Low noise: ≤45dB far from 1m distance



Application

The TS5 solar DC pump can be used for most circulation pump applications without connection to the power grid. Highly efficient, the TS5 can be connected directly to a photovoltaic panel and is characterized by its small size, high efficiency, and extreme low power consumption. The long life brushless motor technology provides maintenance free and quiet service life. This pump is perfect for single family home thermal solar systems or any circulation pump application where conventional power is not available.

Features

- ◇ DC brushless motor with energy efficiency technology by micro processor
- ◇ Soft start at very low in-rush current, good convenient working directly with PV panel
- ◇ Durable permanent magnetic rotor/impeller and fine ceramic shaft
- ◇ Advanced magnetic drive technology for static-impeller, without any leakage for ever
- ◇ Long life brushless pump, ideal life for 30000 hours
- ◇ Heavy duty work, can sustain continual 24 hours' work
- ◇ Automatic overload protection
- ◇ Automatic over-temperature protection
- ◇ Automatic dry-running protection
- ◇ Low or no maintenance
- ◇ Low power consumption



Areas of use

Hot Water Circulation
Radiant Floor Heating
Solar Applications
Liquid Transfer
General Purpose Pumping



TS5 SOLAR DC CIRCULATION PUMP

Soft start-up

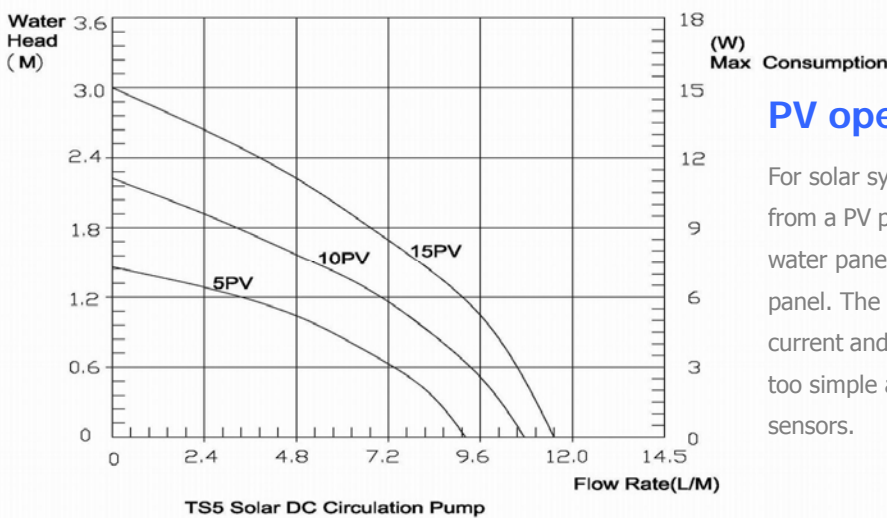
The TS5 Solar DC pump has a soft start-up feature which reduces high in-rush current. When the photovoltaic panel provides sufficient power, the pump goes through the alignment phase by turning the rotor into the position required for start-up. The processor then waits until the capacitor is sufficiently charged. This enables a start-up with minimal power (less than two watt). Cycling due to unsuccessful attempts is minimized. Even after prolonged shutdown, the pump will start reliably.



Materials of Construction (Wetted Parts)

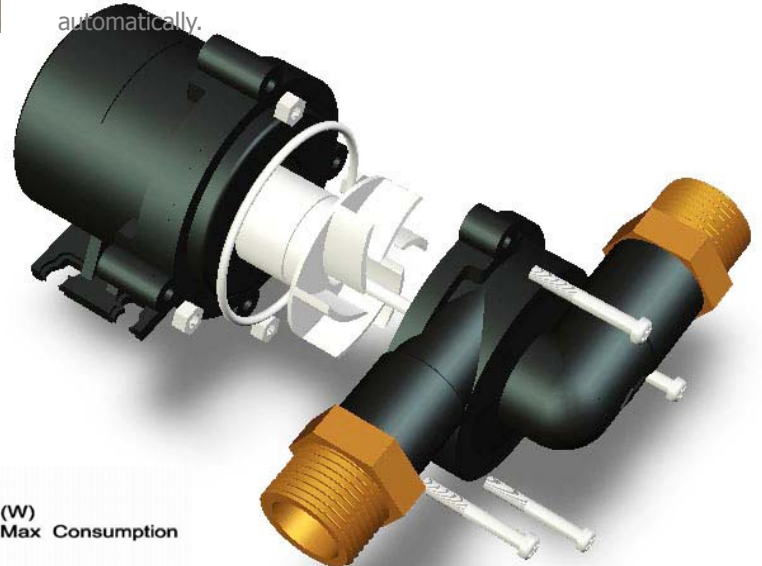
- Hi-Temp Ryton Plastic- PPS (food grade)
- Brass Inlet/Outlet
- Viton "O" Ring
- Hi-Temp Ryton (PPS) Impeller
- Ceramic Ferrite Magnet

Pump Curves



Over-temperature safety device

The TS5 Solar DC pump comes with an integrated over-temperature safety device which shuts off the pump electronics when reaching temperature over 110°C (230°F). When the temperature of the pumped fluid is below 95°C (203°F) the pump will function normally. The temperature of the electronic components is influenced by the temperature of the pumped media as well as by the speed setting. After reaching a critical temperature 95°C (203°F) the pump will lower its speed automatically in order to avoid a total shutdown. However, if the temperature continues to rise (e.g. caused by too hot pumped media), the pump will eventually shut down completely. After cooling down, the pump will restart automatically.



PV operated

For solar system loops, the TS5 pump can be powered directly from a PV panel. The sun comes up, heat builds in the solar hot water panel and at the same time electricity is made in the PV panel. The pump slowly starts with the smallest amount of current and pushes the heated water to the storage tank. It's all too simple and eliminates all controllers, thermostats and sensors.

Models

MODEL	PV MODULE WATTS (W)	MAX HEAD METERS (M)	MAX FLOW (L/M)
TS5 5PV	5	1.4	8.5
TS5 10PV	10	2.3	10
TS5 15PV	15	3	11.5

SOLAR DC CIRCULATION PUMP

TS5 mainly compare with TL-08/most ordinary DC hot water pumps, D5 pump and SID pump

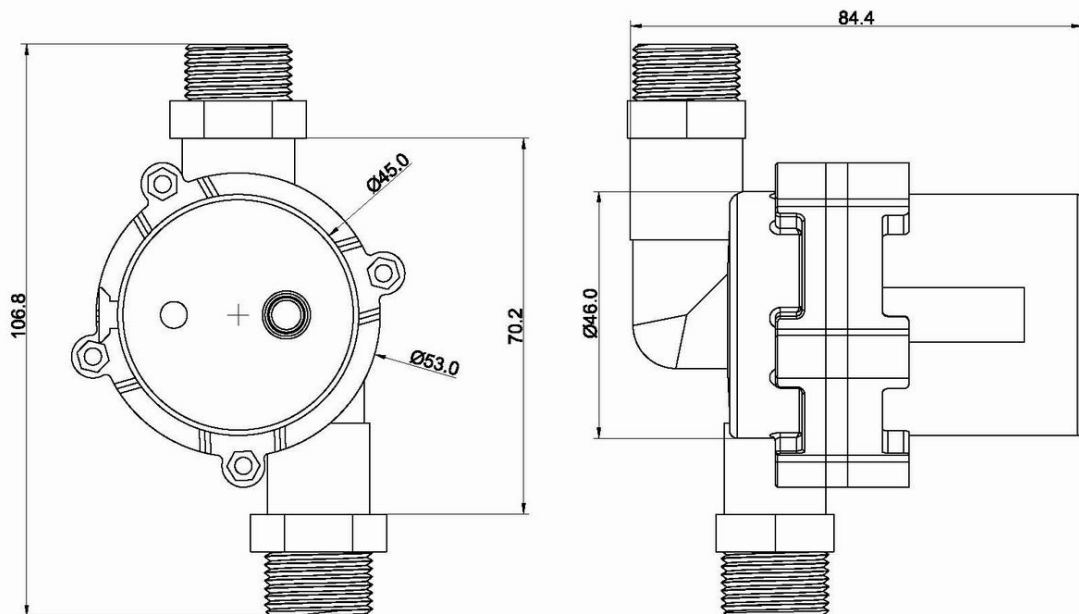
Model	Max Working Temp.	Max System Pressure	Dry -running Protection	Automatic Temp. Protection	Over-load Protection	Wide Voltage Scope	Housing	"O" Ring	Impeller	Magnet	Inlet /Outlet
TS-5	110°C	10Bar	Yes	Yes	Yes	Yes	Ryton	Viton	Ryton	Ceramic Ferrite Magnet	Brass
TL-08	80°C	3~5Bar	No	No	No	No	Nylon	NBR	Nylon	NdFeB magnet	Nylon
D5	110°C	10Bar	Yes	Yes	No	Yes	Brass	EPDM	PPO	Ceramic Ferrite Magnet	Brass
SID	120°C	10Bar	No	No	Yes	Yes	Brass	Viton	Ryton	Ceramic Ferrite Magnet	Brass

Ryton (PPS): one of best engineering plastics, can stand of metal material in many field, with a high mechanical strength, high temperature, chemical properties of advantages such as; have a thermal stability, excellent heat resistance, high mechanical strength, its continuous use temperatures up to 220-240°C, at 1.82MPa load heat distortion temperature of above 260°C.

Viton (FKM): has excellent heat-resistance: sustainable at -40 ° F (-40 ° C) at 400 ° F (204 ° C) temperatures, intermittent in 600 ° F (315 ° C) temperatures; be able to withstand more than the most extensive of any commercial rubber solution and chemicals; excellent tolerance to a variety of oils, fuels, lubricants and most mineral acids;

Dimensional drawings for TS5 solar DC pumps

All dimensions in mm unless rated



The TD5 pump, more powerful, full brass head, in expectation!

TOPS Pump Co.,td Effective November 2009 Specification are subject to change without notice