



## **TS5 DC SERIES PUMPS Direct Connected to TEG or Battery**



### **Application**

The TS5 TEG 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 TEG Generator 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 HYDRONIC 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 TEG Generator
- 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

### **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

### **Areas of use**

- Hot Water Circulation
- Radiant Floor Heating
- TEG Generator liquid side Applications
- Liquid Transfer
- General Purpose Pumping, boat, car, ponds, water irrigation, farming etc

### **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

**TEG operated** the TS5 pump can be powered directly from a TEG Generator. 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.

**Soft start-up** The TS5 TEG DC pump has a soft start-up feature which reduces high in-rush current. When the Thermoelectric Generator 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.

**Over-temperature safety device** The TS5 TEG 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.

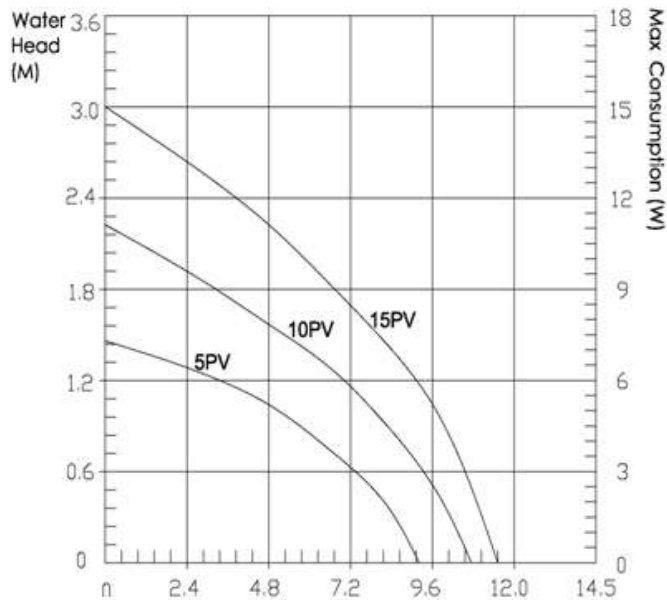
## TS5 mainly compare with TL-08/most ordinary DC hot water pumps, D5 pump and SID pump

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 1.82 MPa 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;



Model	TEG WATTS (W)	Max Head Meters (m)	Max Flow (L/M)	
TS5	~5 W	~1.4 M	~8.5 L/M	
TS10	~10 W	~2.3 M	~10 L/M	
TS15	~15 W	~3.0 M	~11.5 L/M	

**\*All specifications are based on free flow no back pressure**

### Dimensions

