

| Solar Water Filtration Systems |

With the solar desalination system empowered by HAMAK innovative technology, people living in remote areas are granted access to clean, affordable and reliable source of water.



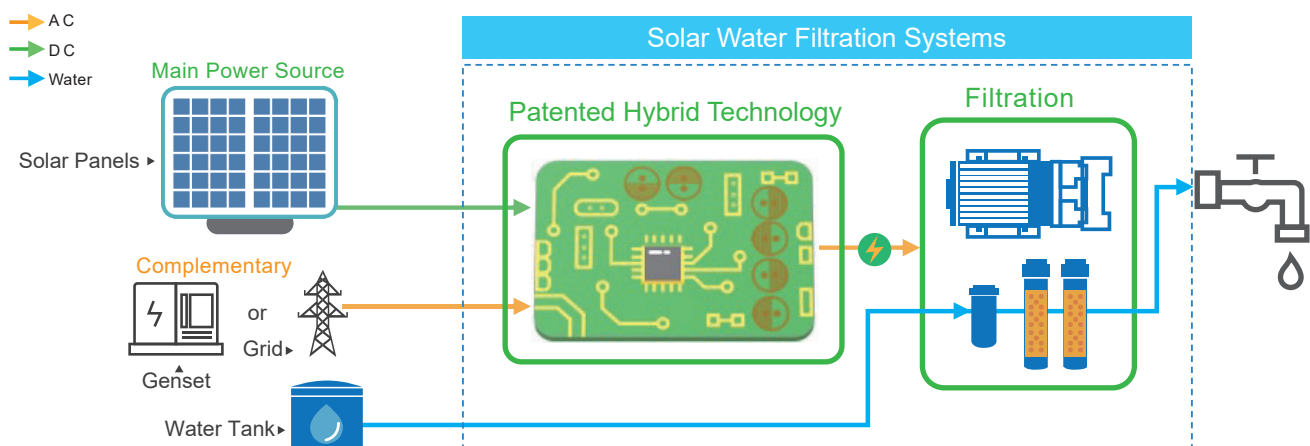
JASON'Solar Water

Features

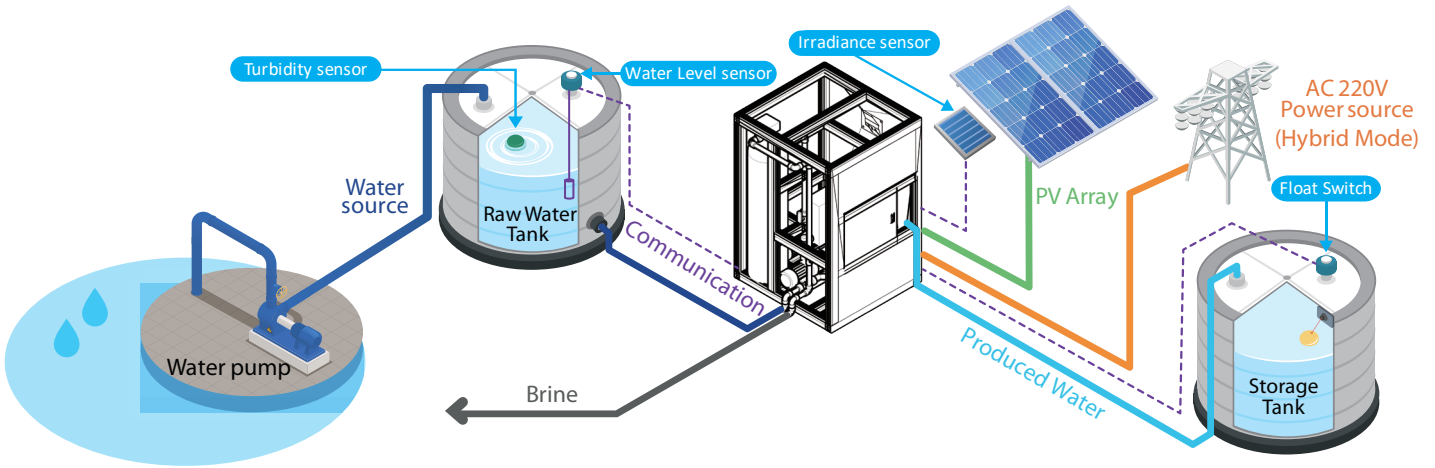
- Supporting 100% Battery-Free, Off-Grid operation powered by solar panels.
- Patented technology allows the AC complementary to hybrid technology for 24/7 operation.
- Proprietary MPPT Algorithm maximizing the use of unlimited source of the sun and sea.
- Fully automated membrane Clean-In-Place and water production.
- The compact, movable, plug & play design renders deployment rapid anywhere.
- Easy maintenance results in lowest cost of water.



Power Control System



System Architecture



Intelligent Operation in Off-Grid Mode



In the morning, the system starts automatically when PV delivers sufficient power and executes membrane flushing followed by water production.



In cloudy conditions, the proprietary algorithm dynamically optimizes solar energy and adjusts pressures. The system smoothly increases its production as the clouds drift away.

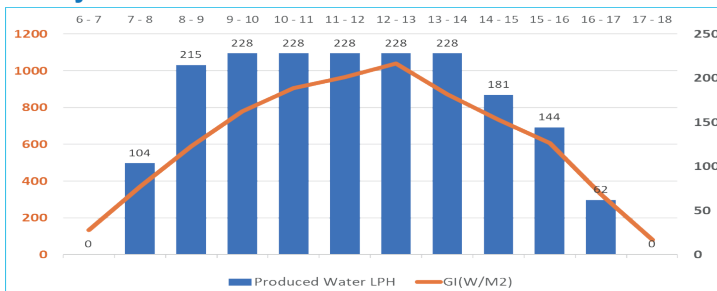


PV capacity can be installed up to 8kWp. Oversizing the system enables the unit to operate for a longer operating period in the daytime. When the generated solar energy is NOT greater than min. power requirement, the system stops momentarily until PV delivers sufficient energy.

Automated Protection

- Inlet pressure too High / Low
- Outlet pressure greater than the set value
- Low water level in Raw Water Tank
- Abnormal turbidity in Raw Water Tank
- Abnormal quality of Product Water
- Abnormal Performance of membrane flushing
- Irradiance lower than the set activation level

Hourly Water Production in Off-Grid Mode



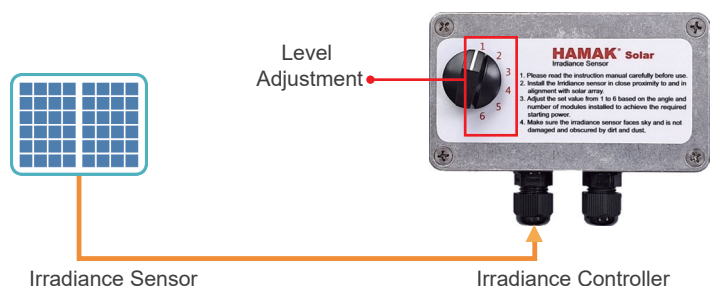
Environmental parameters and results

- PV Power Input: 6 kWp
- Operating Hours: 7AM – 5PM
- Feed water: Seawater, TDS <25,000 ppm
- Water Temp. : 25°C
- Daily Water Output: 1,846 Liters

Off-Grid Mode with Irradiance Sensor and Controller

In Off-Grid Mode, the system will be activated once the power from solar panels is greater than the min. power requirement. The activation level can be adjusted via Irradiance Controller according to the installed PV capacity.

Level	Installed PV capacity (Watt)
6	3,100 ~ 3,800
5	3,800 ~ 4,600
4	4,600 ~ 5,400
3	5,400 ~ 6,200
2	6,200 ~ 7,000
1	> 7,000



Specifications

Series		JS		
Model		SROS	SROB	SUF
PV Input	Max. Input Power	8000 W		
	PV Power Recommended ⁽¹⁾	4000 W (Hybrid Mode) 7000 W (Off-Grid Mode)		2000 W (Hybrid Mode) 4000 W (Off-Grid Mode)
	Voltage Range ⁽²⁾	120 ~ 380 Vdc		
	MPPT Range	150 ~ 350 Vdc		
	Max. Input Current	20 A		13 A
	Max. Efficiency	96%		
Complementary AC Input	Input Voltage	220V ± 10%, 1-phase		
	Input Frequency	50 / 60 Hz		
	Max. Input Current	12 A		9 A
Feed water	Source Water Type	Seawater	Brackish Water	Freshwater (Lake / Ground)
	TDS Range	35,000 ~ 10,000 ppm	10,000 ~ 1,000 ppm	< 600 ppm
Max. Product Water	Hybrid Mode	5,000 LPD	10,000 LPD	50,000 LPD ⁽⁴⁾
	Off-Grid Mode ⁽³⁾	Approx. 1,800 LPD	Approx. 4,000 LPD	Approx. 20,000 LPD ⁽⁴⁾
Filtration Systems	Pump	1xFeed-in pump, 1xHigh pressure pump, 1xCleaning pump		1xFeed-in pump, 1xDosing pump
	Pre-Filter	1xMultimedia Filter 2x10"(1µm) PP Filter		1xMultimedia Filter 1x20"(1µm) PP Filter
	Post-Filter	/		1xActivated Carbon Filter 1x20"(1µm) PP Filter 1xUV Sterilizer
	Vessel	FRP		UPVC
	Compatible Membrane	4"x40" Seawater RO	4"x40" Brackish RO	PVDF Hollow Fiber UF (30nm)
	Membrane Quantity	2		1
	Flushing System	Automatic (RO and UF) / Manual (Multimedia)		
Display and Instrument	Display	5.7" LCD		
	Water Flow Indicator	Product & Brine Water		Product & Wastewater
	Pressure Indicator	RO Inlet & Brine		UF Inlet and Wastewater
	Water Quality Indicator	TDS		
	Real-Time Power Display	PV and AC Power		
Management	Communication	RS485		
	Monitoring	Cloud-based system (Optional)		
General Data	Operating Temperature	-20~40°C		
	Cooling Method	Natural Convection		
	Protective Types	Over-Load / Over temperature protection		
	Main Frame	Aluminum Alloy		
	Dimensions	123x187x107 cm		
	Net Weight	400 kgs		350 kgs
Optional Accessories	Solar Pumping Inverter \ Solar UV System \ Online Monitoring Data Logger			

(1) Automatically detects AC power source and switches between Hybrid Mode and Off-Grid Mode.

(2) The temp. coefficients of each module shall be taken into account to ensure that the PV system voltage under extreme high and low temperatures at the installation site remains within the input voltage range.

(3) The max. daily water production in off-grid mode is measured under specific conditions. Actual output may vary depending on factors such as feed water quality, temperature, and solar irradiance.

(4) Water production capacity is tested using feed water at a temperature of 25°C, with TDS < 200 ppm, turbidity < 2 NTU, COD < 2 ppm, and free from oil and dissolved contaminants.

• All specifications are subject to change without prior notice. Please contact us for updated information.

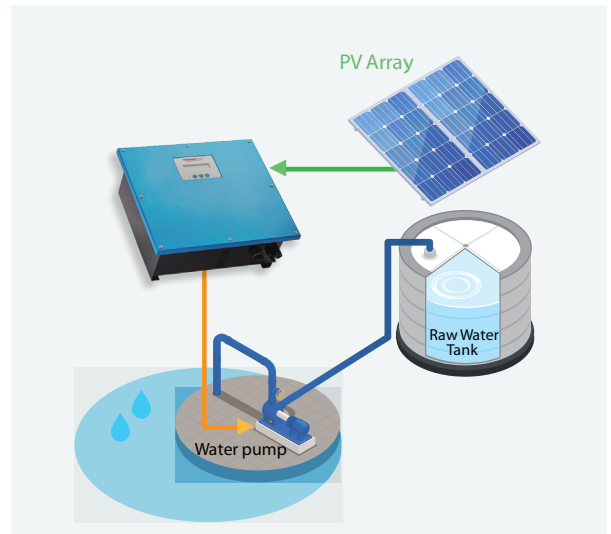
ACCESSORIES

Solar Motor Drive (Pump Inverter)

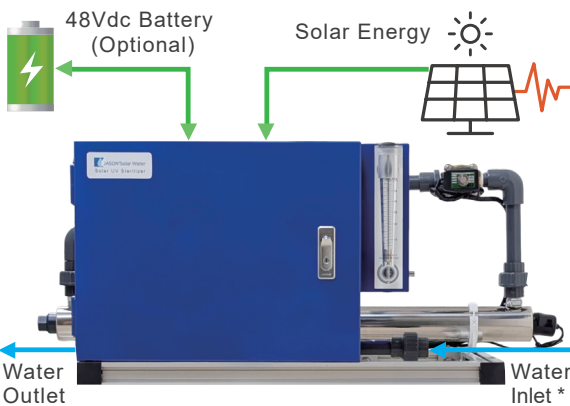
- Compatible with 3-Phase AC Motors from 2HP ~ 20HP.
- Excellent performance powered by proprietary MPPT Algorithm.
- Battery-free design and plug & play.
- Fully automated operation with external sensors.

Spec.

Motor Capacity	2 - 10 HP	7.5 - 20 HP
AC Output	220Vac, 3-Phase	400/440Vac, 3-Phase
PV Input	250 ~ 390 Vdc	480 ~ 800Vdc
Communication	Analog & Digital	Analog, Digital & RS485
Protection	PV reverse polarity, Over temperature and Earth Leakage Current protection	
Weatherproof	IP54	



Solar-Powered Operation



*Feedwater should be filtered water with TDS < 800 ppm

Solar-Powered Operation

- Direct PV-panel drive with simplified connectivity
- Auto-start/stop based on solar availability
- Optional 48VDC lithium battery for 24/7 operation

Advanced Integration

- 254 nm high-intensity lamp ($\geq 99.9\%$ disinfection rate)
- Gravity-fed design eliminates need for pumps
- Adjustable valve for flow control (≤ 40 LPM optimal rate)
- LED status indicators for UV lamp operation
- Built-in timer to monitor the lamp's lifetime
- SUS304 and weather-resistant construction control cabinet

Recommended Configuration for Battery and PV panel:

- 400Wp panels in 4 Peak Sun-Hour with a 48Vdc/30A battery for 24-hour operation.

On-line Monitoring System

The AIoT-ready monitoring system from JASON'Solar Water is an integrated platform for remote monitoring of the solar energy and water filtration system. It provides real-time information, including:

Solar Power

- Instant solar power, daily power generation and lifetime generation

Water Production

- Instant water flow, daily & lifetime water production, Inlet & Outlet pressure and quality of product water

System Status

- Operating / standby / barrel cleaning / membrane flushing / ERROR

Intelligent Data Analysis

Excellent machine learning algorithm can estimate the membrane status and the remaining days before the replacement and predict potential failures and thus minimize maintenance costs.

