

DC SOLAR SURFACE PUMP

MATERIAL & FEATURES

- ▶ **Motor:** Permanent-magnet synchronous (PMSM) — up to 92% efficiency, 20–30% more energy-saving
- ▶ **Drive / MPPT:** Sensorless FOC sine-wave drive · MPPT >99% · LED display (V/A/W/RPM/error)
- ▶ **Wetted parts:** brass/iron impeller · aluminium body · stainless steel/iron outlet
- ▶ **Material grades:** SUS304 standard · SUS316 optional for coastal / brackish water
- ▶ **Key components:** 100% copper motor windings · NSK-grade sealed ball bearings · SUS304 shaft + cast-iron / stainless hydraulics · Silicon-carbide / ceramic mechanical seal
- ▶ **Ingress:** Motor IP55 · Controller IP66 · Class F insulation · air cooling
- ▶ **Protection:** Dry-run · over/under-voltage · overload · over-current · reverse · over-temp · soft-start
- ▶ **Cable:** PV-to-controller & motor cable 2.5–4 mm² by model (copper, sized for a ~50 m run; step up one size per additional ~50 m of drop).
- ▶ **Warranty:** 2 years
- ▶ **Standards:** CE · RoHS · CB · TUV · SGS · ISO 9001 · ISO 14001 · IEC 62253


40 m

MAX HEAD

80 m³/h

MAX FLOW

150–3000 W

POWER

92%

EFFICIENCY

2 yr

WARRANTY

APPLICATIONS



Irrigation



Boosting

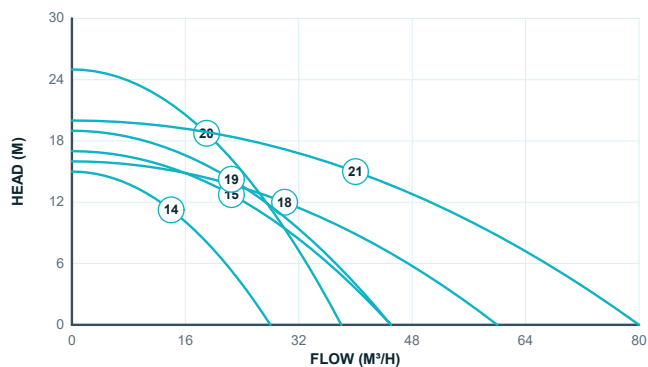
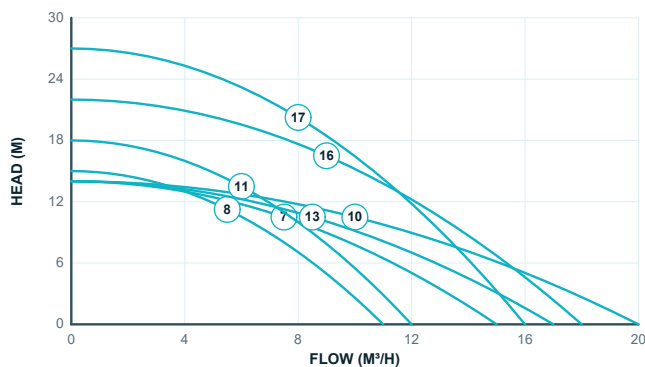
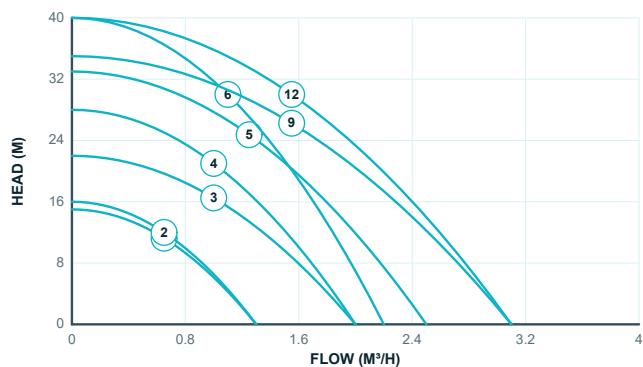


Rivers / tanks



Domestic

PERFORMANCE CURVES (Q-H)



DC SOLAR SURFACE PUMP - SPECIFICATIONS

Model no.: size (") · type · max flow (m³/h) – max head (m) – system voltage (V) – power (W)

NO.	MODEL	VOLT. (V)	INPUT Voc (V)	POWER (W)	MAX FLOW (M³/H)	MAX HEAD (M)	OUTLET (inch)	REC. PV
1	PSQB1.3-15-12-150-S	12	11~55	150	1.3	15	1.0"×1.0"	1 × 250 Wp
2	PSQB1.3-16-12-150	12	11~55	150	1.3	16	1.0"×1.0"	1 × 250 Wp
3	PSQB2.0-22-24-250-S	24	11~55	250	2	22	1.0"×1.0"	1 × 330 Wp
4	PSQB2.0-28-24-250	24	11~55	250	2	28	1.0"×1.0"	1 × 330 Wp
5	PSQB2.5-33-48-400-S	48	45~150	400	2.5	33	1.0"×1.0"	2 × 300 Wp
6	PSQB2.2-40-48-400	48	45~150	400	2.2	40	1.0"×1.0"	2 × 300 Wp
7	PHF15-14-72-600	72	60~150	600	15	14	1.5"×1.5"	3 × 300 Wp
8	PSZ11-15-72-600	72	60~150	600	11	15	1.5"×1.5"(PIPE)	3 × 300 Wp
9	PSGJ3.1-35-72-600	72	60~150	600	3.1	35	1.0"×1.0"	3 × 300 Wp
10	PHF20-14-96-750	96	60~200	750	20	14	2.0"×2.0"	3 × 300 Wp
11	PSZ12-18-96-750	96	60~200	750	12	18	2.0"×2.0"(PIPE)	3 × 300 Wp
12	PSGJ3.1-40-96-750	96	60~200	750	3.1	40	1.0"×1.0"	3 × 300 Wp
13	PZSU17-14-144-1100	144	90~340	1100	17	14	2.0"×2.0"	6 × 300 Wp
14	PHF28-15-144-1100	144	90~340	1100	28	15	2.0"×2.0"	6 × 300 Wp
15	PHF45-17-192-1500	192	90~430	1500	45	17	3.0"×3.0"	8 × 300 Wp
16	PZSU18-22-192-1500	192	90~430	1500	18	22	2.0"×2.0"	8 × 300 Wp
17	PSZ16-27-192-1500	192	90~430	1500	16	27	2.0"×2.0"	8 × 300 Wp
18	PHF60-16-280-2200	280	100~490	2200	60	16	4.0"×4.0"	10 × 300 Wp
19	PZSU45-19-280-2200	280	100~490	2200	45	19	3.0"×3.0"	10 × 300 Wp
20	PSZ38-25-280-2200	280	100~490	2200	38	25	3.0"×3.0"	10 × 300 Wp
21	PHF80-20-385-3000	385	280~780	3000	80	20	5.0"×5.0"	13 × 300 Wp

OPERATING CONDITIONS

Liquid temp	0–40 °C
Max. sand	≤ 0.05 % (≤ 500 g/m³)
pH value	5–9
Ambient	-15 to 70 °C
Max. immersion	N/A
Duty	S1 (continuous)

DIMENSIONS & WEIGHT

Net weight	7–25.5 kg
Overall length	335–590 mm
Controller	360 × 260 × 140 mm
Controller wt.	7 kg

MATERIALS & CERTIFICATION

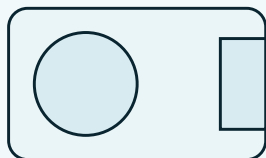
Standard	Cast-iron (HT200) body + SUS304 / brass impeller + SUS304 shaft
Option	SUS304 / SUS316 body & impeller

CE	RoHS	CB	TUV	SGS	ISO 9001
ISO 14001	IP68	IEC 62253			

DC SOLAR SURFACE PUMP - DIMENSIONS & CONTROLLER

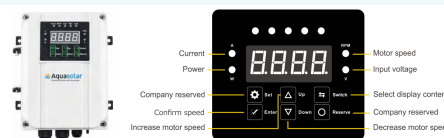
DIMENSIONS & WEIGHT

Overall length	335–590 mm
Net weight	7–25.5 kg
Controller size	360 × 260 × 140 mm
Controller wt.	7 kg



L 335–590 mm

CONTROLLER



Drive	Sensorless FOC, pure sine-wave output
MPPT efficiency	>99%
Enclosure	IP66
Mount	Both
Display	V / A / W / RPM / error
Remote monitor	Optional 4G / Wi-Fi (add-on)

MOTOR & DRIVE

Motor	PM brushless (PMSM)
Efficiency	up to 92%
Drive	Sensorless FOC sine-wave
MPPT	>99%
Insulation	F (155 °C)
Duty	S1 (continuous)
Cooling	Air cooling
Speed	Variable, MPPT-tracked

SOLAR ARRAY CONNECTION

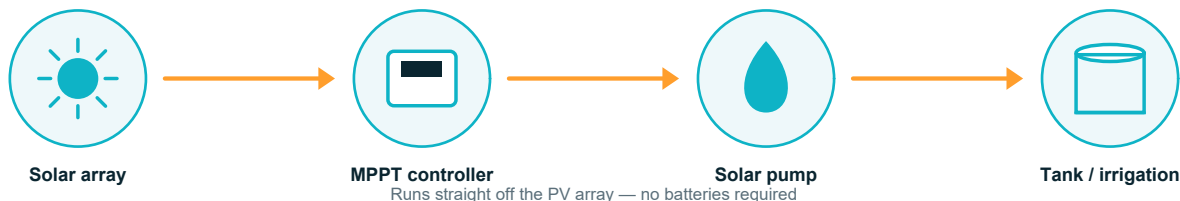
SYSTEM	Voc (V)	POWER	ARRAY
12 V	11~55	150 W	1 × 250 Wp
24 V	11~55	250 W	1 × 330 Wp
48 V	45~150	400 W	2 × 300 Wp
72 V	60~150	600 W	3 × 300 Wp
96 V	60~200	750 W	3 × 300 Wp
144 V	90~340	1100 W	6 × 300 Wp

Array 1.3–1.5 × pump power · Voc within MPPT window.

CABLE & INSTALLATION

Run ≤ 50 m	2.5–4 mm² (per model)
Run 50–100 m	one size up
Run > 100 m	two sizes up
Cable type	3-core copper + earth
▶ Foot valve + strainer; prime before first start	
▶ Shade the controller; keep vents clear	

SYSTEM LAYOUT


 MPPT controller
 Runs straight off the PV array — no batteries required

WHY AQUASOLAR


FOC + MPPT >99%
 Pure sine-wave drive — max water per day

IP68 · SUS304
 Submersible, corrosion-resistant build

Dry-run protected
 8 protections + soft start

2-year warranty
 Trusted in 70+ countries

ABOUT AQUASOLAR

POWERING WATER WITH SUNSHINE

Aquasolar is a professional solar water pump manufacturer since 2010, offering a full range of DC and AC/DC solar pumps for agricultural irrigation, livestock, off-grid homes and community water supply. Reliable products, complete solutions and dedicated service — trusted in 70+ countries worldwide.

2010
 SINCE

70+
 COUNTRIES

600,000+
 ANNUAL OUTPUT

2 yr
 WARRANTY

24/7
 SERVICE