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Solar PV Water Pumping (AC)

AC water pumps are available in a wide range of sizes for various applications. They often offer a more cost effective means to use solar power for water pumping. The advantages of such a topology arise from

- *AC pumps.* Great variety, wide usage and low cost.
- *Solar PV modules.* Reducing in cost
- *Inverters.* AC inverter manufacturers have in recent times offered to the market versions of their popular inverters for use with solar power. This has led to cheaper solar water pumping inverters.

We are a distributor of **Fuji Frenic ACE** solar water pumping solutions and do offer the following inverters either on their own or in complete solar water pumping systems.

Fuji Frenic ACE Inverter	Voltage/ # of phases	Applied Motor (KW)	Inverter Price (Kshs)	AC Sine Filter	AC Sine Filter Price (Kshs)
FRN0011E2E-7GA-CLI-SOL	240V, 1 ϕ	1.5	50,200		
FRN0010E2E-2GA-CLI-SOL	240V, 3 ϕ	1.5	71,200	CNW 933 / 12	49,100
FRN0007E2E-4GA-CLI-SOL	415V, 3 ϕ	2.2	62,700	CNW 933 / 8	41,600
FRN0012E2E-4GA-CLI-SOL	415V, 3 ϕ	4	74,500	CNW 933 / 12	49,100
FRN0022E2E-4E -CLI-SOL	415V, 3 ϕ	5.5	88,500	CNW 933 / 20	70,900
FRN0029E2E-4E -CLI-SOL	415V, 3 ϕ	7.5	103,500	CNW 933 / 20	70,900
FRN0037E2E-4E -CLI-SOL	415V, 3 ϕ	11	120,700	CNW 933 / 30	89,600
FRN0044E2E-4E -CLI-SOL	415V, 3 ϕ	15	152,900	CNW 933 / 37	112,400
FRN0059E2E-4E-CLI-SOL	415V, 3 ϕ	18.5	199,200	CNW 933 / 48	123,200
FRN0072E2E-4E-CLI-SOL	415V, 3 ϕ	22	248,700	CNW 933 / 60	154,700
FRN0085E2E-4E-CLI-SOL	415V, 3 ϕ	30	318,300	CNW 933 / 60	154,700
FRN0105E2E-4E-CLI-SOL	415V, 3 ϕ	37	403,000	CNW 933 / 75	173,700

Surface Pumping Illustrations



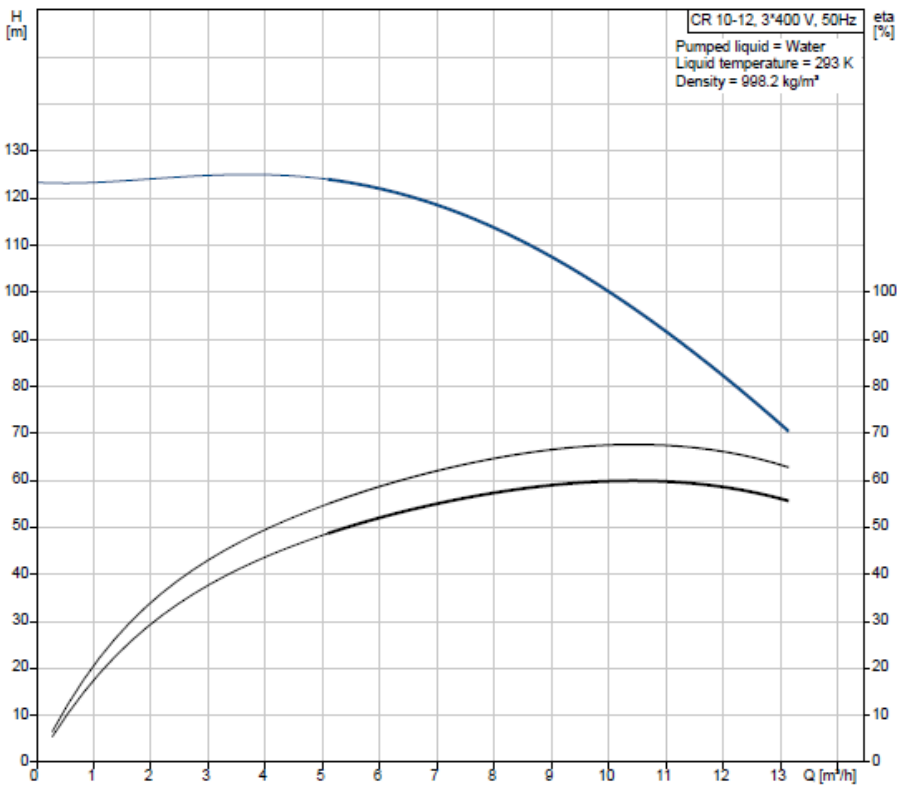
Fuji Frenic ACE Inverter



Schematic of a pumping system



Pump (Multi stage)



Performance curve

Grundfos CR1012 surface pump powered by solar

System pricing is dependent on the proposed installation. Below is a sample costing of a Grundfos CR1012 surface pump powered by solar. The quote does not include tanks, piping and valves

Grundfos CR1012 (upto 10 M3/hr @ 80M TDH when powered by 5.5 KWp Solar PV)	Size	Units	Qty	Unit cost (Kshs)	Total cost (Kshs)
Solinc Solar Panels (Vmp = 29.5 V, Voc = 36 V)	275	Watts	20	19,250	385,000
Roof Mounting	1	Watts	5500	12	66,000
DC Control box; Fuses and SPD (Surge protection device).	1	Way	1	27500	27,500
Solar cables	2 X 4	sq mm	120	167	20,040
24VDC supply for Lovato relay	20	watts	1	21,000	21,000
AC Isolator switch	63	Amps	1	5,500	5,500
Emergency switch	10	Amps	1	2,500	2,500
Enclosure	60 X 40	cm	1	15,000	15,000
Lovato probes set (2 probes plus a relay)	Set		2	3,900	7,800
Grundfos CR1012 3 phase vertical multistage pump	4.0	KW	1	283,475	283,475
Surface Cables and other accessories	Lot		1	29,500	29,500
Transport & Installation	Lot		1	50,000	50,000
Sub total					913,315
VAT (on AC parts, Accessories & Installation)					63,004
Total					976,319

We **Warrant** our pumping systems for 2 years