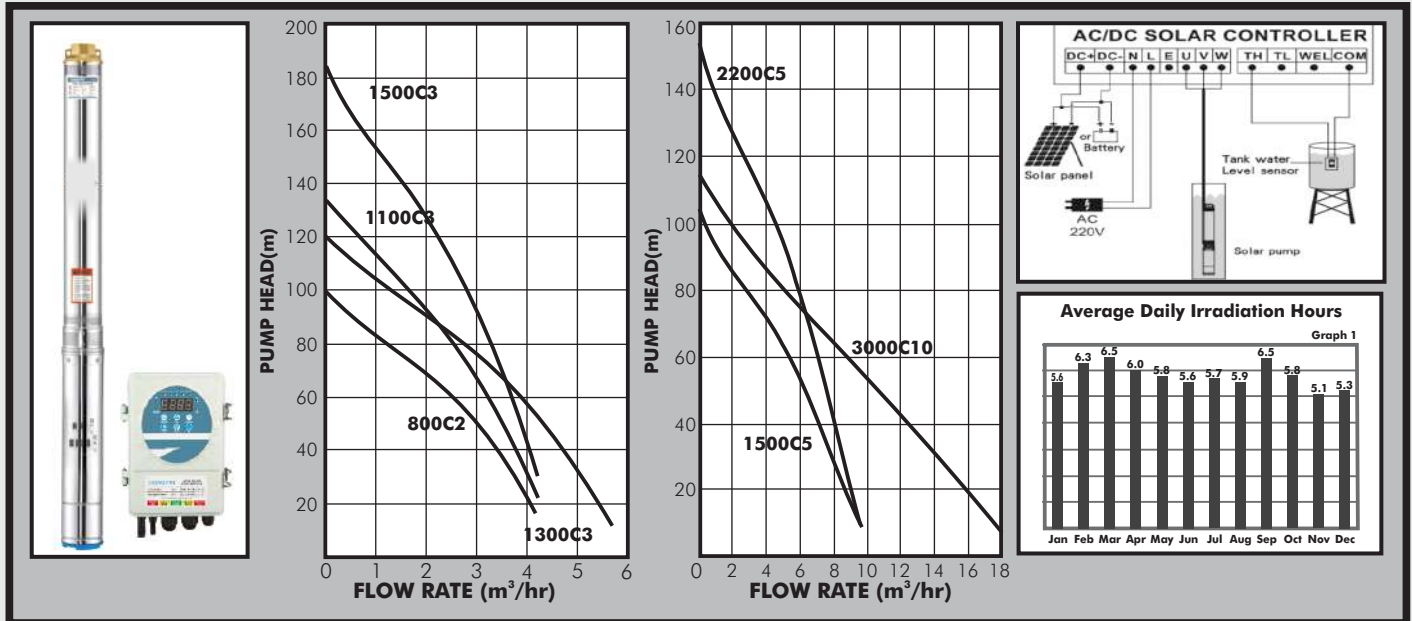




# SUNFLEX-P

## Hybrid AC/DC Solar Pump



### PUMP

Dayliff Sunflex-P is a multistage centrifugal submersible pump designed for water supply from boreholes and wells. A particular feature is hybrid capability with the option of running the pump on DC solar or AC mains supply or generator power with an external intelligent MPPT controller incorporating a frequency converter automatically configuring to the connected input power source. Other features include:-

- Pump construction is of brass outlet and inlet, brass oil chamber and plastic impellers and diffusers.
- External motor controller incorporating MPPT capability for DC power input and Power Factor Correction for AC power input to maximise power input efficiency with DC power automatically prioritized.
- Wide voltage range and flexibility for both AC and DC power sources.
- Built-in dry running protection.
- Soft start operation to extend motor and pump life.
- Motor protection including overload/underload and overvoltage / undervoltage sensing.

Dayliff Sunflex-P is a cost-effective and reliable solution for hybrid water supply where both solar and mains power supplies are available. The pump incorporates a number of innovative technology features to optimize system efficiency and minimize operating costs and provides unbeatable flexibility for all borehole applications.

### MOTOR

The pump is coupled to an oil filled brushless permanent magnet variable speed motor that can be powered either by AC or DC power supply. The motor is provided with an external control module which uses MPPT technology to continuously optimize DC input efficiency and provides protection against over/under voltage, electrical and mechanical overload. For optimal performance it is recommended to size the PV solar module array with a nominal output about 50% greater than the specified motor size and ensure that the input voltage is between the specified limits.

### EXTERNAL PUMP CONTROLLER

An external controller is provided to enhance pump functionality which primarily provides for power source selection of either DC only, AC only or Auto which prioritizes the use of DC solar over mains/generator AC power and switches to AC when DC solar power is insufficient or unavailable. It also provides for on/off switching, digital VAC and VDC values, connection for a high-level control switch with 'Full' indication, 'Low' warning for low borehole water level and system Error warning. Other extra features include protection against low and high voltage, over current, over temperature, high and low water level (15min recovery) and over load and an LED display for voltage, current, power, speed and error codes.

**Enclosure Class:** Pump -IP68, Controller -IP65

**Insulation Class:** F

**Max. Controller Current:** 18A

**Speed :** 4,000rpm

### PUMP OUTPUTS

Performance curves are given at standard test conditions of 1000W/m<sup>2</sup> solar irradiance and 25°C temperature. Output will vary throughout the year depending upon prevailing irradiation levels. For estimated daily outputs at continuous pumping multiply the indicated output at the duty point by the daily irradiation given in the graph. For indicative purposes, factors of 1.1 can be applied for hot arid areas and 0.9 for temperate high altitude areas in the tropics.

### OPERATING CONDITIONS

**Pumped Liquid:** Thin, clean, non-aggressive liquids without fibres or particles with a sediment concentration not exceeding 50gms/m<sup>3</sup>

**Max. Liquid Temperature:** 35°C

**Max Immersion Depth:** 100m

**Installation:** Pump should be installed vertically

### PUMP DATA

Model	Power (kW)	MPPT Voltage (Vmp)	Input Voltage(V)	Open Circuit Voltage (VOC)	PV Modules (Connected in Series)	Outlet (")	Dimensions(mm)			Weight (kg)
			AC, 1ph				A	B	C	
SUNFLEX-P 800CS	800	90-350	80-265	<400	550Wx2	1 ¼	728	470	73	6
SUNFLEX-P 1100C3	1100	130-350			550Wx3		864	586		7
SUNFLEX-P 1300C3	1300	150-350			550Wx4		702	418	95	10
SUNFLEX-P 1500C3	1500	160-400			80-285		<450	550Wx4	999	701
SUNFLEX-P 1500C5	1500		550Wx6	730		422		95	11	
SUNFLEX-P 2200C5	22000	220-400	550Wx6	836		507			12	
SUNFLEX-P 3000C10	3000	280-400	550Wx8	827		498				

