

PS150-Centric

12 to 24V Battery or Solar direct ($U_{max}=50VDC$)

Charger for 12/24V Batteries and MPPT booster for solar direct applications included.

Lift up to 22m (75ft)

Flow rate up to 5m³/h (1300USG/h)

Simple installation

Maintenance-free

Cost effective pumping

Applications:

- Livestock watering
- Dugout floating pump
- Pond management
- Irrigation
- 4" well installations

For 12 to 24V systems (1-2 solar modules or batteries in series). Same motor and controller for solar direct or battery systems. PS-150-Centric is a submersible pump but can also be used as a floating pump.

PS150 Centric is more powerful, energy efficient, quieter and much more durable than other pumps in this range. The motor is brushless and maintenance free. No electronics in the motor.

Construction & Features

- Centrifugal mechanism, pump and motor all stainless steel
- Freeze protection optionally (water drains back to source)
- Brushless DC motor (maintenance free) is same for 12 and 24V application.
- MPP tracking, current booster for solar direct applications, Pump speed control , Low Voltage Disconnect for battery protection, Terminals for float / remote switch and low water probe included.
- 12/24V-20A Battery charger included.
- Battery high run function. Pumps only when charging current from the solar array is available. Cycling of battery is avoided and lifetime greatly increased.

PV-Direct (non-battery) Requirements

- A linear current booster incl. MPPT (maximum power point tracking) is included !
- Solar Tracker (optional) will increase daily yield (40-55% in summer)

Installation

- Pump may be mounted horizontally or vertically.
- Pump motor must be submerged
- It may be placed inside a 4" (10cm) or larger well casing, suspended by a rope

Accessories

- Float switch for tank shut off if full.
- Well probe sensor to protect pump from dry-running.
- Float

Warranty

2 year against defects in materials and workmanship



PS150-Centric C-SJ5-8 Controller, Pump and brushless motor



PS150-Centric C-SJ5-8 with float

| Pump Unit (Pu) (motor + pump end) | Dimensions | | | | | Shipping Dimensions | | | |
|--|------------|------|------|------|----------|---------------------|-----------------|------------|--------------|
| | L | A | B | D | S | packaging | shipping volume | net weight | gross weight |
| | [mm] | [mm] | [mm] | [mm] | | [mm] | [m³] | [kg] | [kg] |
| C-SJ5-8 | 593 | 408 | 185 | 100 | G 1 1/2" | 650X160X150 | 0,016 | 12 | 12,5 |
| Controller Type | | | | | | | | | |
| PS150-C | | | | | | 320X240X160 | 0,0123 | 1,2 | 1,8 |

Battery Sample Layout :

Lift / water req.: 50ft lift and 3000USG per day required

Solar radiation: 6kWh/m²/day say 6 peak sun hours

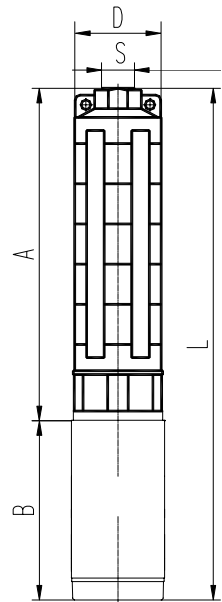
Pump: PS150 C-SJ5-8 pump, 3000G / (14,5x60)G/h = 3,5h pumping time

Energy req.: 3,5h X 24V X 12,5A = 1050Wh X 1,5* = 1575Wh
*(const. factor for battery systems to account for battery, charging and array losses)

Array size: 1575Wh / 6 peak sun hour day (summer) = 265Wp array is needed

Battery size: 1575Wh / 24V = 65Ah X 2* = 130Ah min. size
*(min. factor for batteries)

Choose a larger array and battery size to compensate bad weather periods.



| Performance PS150 C-SJ5-8 Centrifugal Pump | | | | | | | | | | | | | | | | | | | | | |
|--|----|----------------------------------|-----------------|----------------|----|-------|---------------------------|-----------------|----------------|------|-------|--|----------------|------|-------|--------------------|-------|------|-------|-----|----|
| Lift | | 12V Battery or 65Wp Solar direct | | | | | 17V or 150Wp Solar direct | | | | | 24V Battery or 300Wp Solar direct, current = 12,5A | | | | 450Wp Solar direct | | Lift | | | |
| | | Current | Flow Rate / min | 5hrs solar day | | | Current | Flow Rate / min | 5hrs solar day | | | Flow Rate / min | 5hrs solar day | | | 5hrs solar day | | | | | |
| Ft | m | A | L | US G | m³ | USG | A | L | US G | m³ | USG | L | US G | m³ | USG | m³ | USG | m³ | USG | Ft | m |
| 6,6 | 2 | 5,2 | 40 | 10,6 | 12 | 3.200 | 8 | 64 | 16,9 | 19,3 | 5.100 | 82 | 21,7 | 24,6 | 6.500 | 37 | 9.750 | 37 | 9.750 | 6,6 | 2 |
| 10 | 3 | 5,3 | 36 | 9,5 | 11 | 2.900 | 8 | 61 | 16,1 | 18,2 | 4.800 | 79 | 20,9 | 23,8 | 6.300 | 36 | 9.450 | 36 | 9.450 | 10 | 3 |
| 13 | 4 | 5,4 | 32 | 8,5 | 9 | 2.500 | 8,2 | 59 | 15,6 | 17,8 | 4.700 | 77 | 20,3 | 23,1 | 6.100 | 35 | 9.150 | 35 | 9.150 | 13 | 4 |
| 16 | 5 | 5,3 | 26 | 6,9 | 8 | 2.100 | 8,4 | 57 | 15,1 | 17,0 | 4.500 | 75 | 19,8 | 22,3 | 5.900 | 33 | 8.850 | 33 | 8.850 | 16 | 5 |
| 20 | 6 | 5,1 | 24 | 6,3 | 7 | 1.900 | 8,5 | 56 | 14,8 | 16,7 | 4.400 | 73 | 19,3 | 22,0 | 5.800 | 33 | 8.700 | 33 | 8.700 | 20 | 6 |
| 23 | 7 | 4,3 | 13 | 3,4 | 4 | 1.000 | 8,6 | 53 | 14,0 | 15,9 | 4.200 | 70 | 18,5 | 20,8 | 5.500 | 31 | 8.250 | 31 | 8.250 | 23 | 7 |
| 26 | 8 | | | | | | 8,7 | 50 | 13,2 | 15,1 | 4.000 | 68 | 18,0 | 20,4 | 5.400 | 31 | 8.100 | 31 | 8.100 | 26 | 8 |
| 30 | 9 | | | | | | 8,8 | 46 | 12,2 | 13,6 | 3.600 | 67 | 17,7 | 20,1 | 5.300 | 30 | 7.950 | 30 | 7.950 | 30 | 9 |
| 33 | 10 | | | | | | 8,6 | 44 | 11,6 | 13,2 | 3.500 | 65 | 17,2 | 19,7 | 5.200 | 30 | 7.800 | 30 | 7.800 | 33 | 10 |
| 40 | 12 | | | | | | 8,5 | 37 | 9,8 | 11,0 | 2.900 | 60 | 15,9 | 18,2 | 4.800 | 27 | 7.200 | 27 | 7.200 | 40 | 12 |
| 50 | 14 | | | | | | 8,4 | 26 | 6,9 | 7,9 | 2.100 | 55 | 14,5 | 16,7 | 4.400 | 25 | 6.600 | 25 | 6.600 | 50 | 14 |
| | | | | | | | | | | | | 50 | 13,2 | 15,1 | 4.000 | 23 | 6.000 | 23 | 6.000 | 53 | 16 |
| | | | | | | | | | | | | 42 | 11,1 | 12,5 | 3.300 | 19 | 4.950 | 19 | 4.950 | 66 | 20 |
| | | | | | | | | | | | | 34 | 9,0 | 10,2 | 2.700 | 12 | 3.200 | 12 | 3.200 | 73 | 22 |

Note: a solar tracker will improve daily output in summer by 40 to 50%

Note: Solar modules have less output due to high temperature, dirt, manufactures tolerances etc.

Choose a 20-30% larger array to compensate these effects.

Wire sizing Table Controller to Pump Motor

| Feet max. length | Meters | Pump Watts - wire size mm² / AWG | | |
|---------------------|--------|----------------------------------|------------|-----------------|
| | | 70W / 12V | 150W / 17V | 300W / 24V -30V |
| 17 | 5 | 2,5 / #14 | 2,5 / #14 | 2,5 / #14 |
| 33 | 10 | 2,5 / #10 | 4 / #10 | 4 / #10 |
| 50 | 15 | 4 / #10 | 4 / #10 | 4 / #10 |
| 65 | 20 | 4 / #10 | 6 / #10 | 6 / #10 |
| 80 | 25 | 6 / #10 | 6 / #10 | 6 / #8 |

wire sizing layout for max. 6% cable loss

Available From:

Solar Power & Pump Co.
Elk City, OK
580-225-1704
1-866-246-7652

