

Energy Matters

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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
etc.

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.

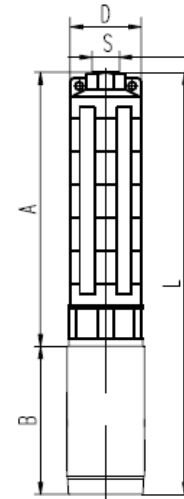
Warranty

2 year against defects in materials and workmanship



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

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]	[m ³]	[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)L/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.

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			
	A	L	US G	m ³	USG	A	L	US G	m ³	USG	L	US G	m ³	USG	m ³	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	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	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	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	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	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	23	7	
26	8						8,7	50	13,2	15,1	4.000	68	18,0	20,4	5.400	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	9	
33	10						8,6	44	11,6	13,2	3.500	65	17,2	19,7	5.200	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	40	12	
50	14						8,4	26	6,9	7,9	2.100	55	14,5	16,7	4.400	25	6.600	50	14	
												50	13,2	15,1	4.000	23	6.000	53	16	
												42	11,1	12,5	3.300	19	4.950	66	20	
												34	9,0	10,2	2.700	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 mm ² / 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

