Solar or battery-operated Submersible Pump System 4” Centrifugal (C) Pump Unit

Submersible solar pumps | Technical data

Lorentz PS150 Centric

GENPRO ENERGY SOLUTIONS

| Performance

- Lift up to 75 feet
- Flow rate up to 21.6 GPM
- Simple installation
- Maintenance-free
- High reliability and life expectancy
- Cost-effective pumping solution

| Application

- Livestock watering
- Dugout floating pump
- Pond management
- Irrigation systems

| PS150 Controller

- PV direct or battery powered 12-24VDC operation
- Electronics all above ground
- Two Separate control inputs for dry run protection and tank float switch
- Automatic reset after low water protection engages
- Protected against reverse polarity, overload and temperature
- Speed control, maximum pump speed adjustable to reduce flow rate to approximately 30%
- Solar operation: integrated MPPT (Maximum Power Point Tracking)
- Battery operation: low voltage disconnect and restart after battery has recovered
- 12/24-20Amp Battery charger included.
- Battery high run function. Pump only runs when charge current from solar array is available. Cycling of batteries is avoided and lifetime greatly increased.

LORENTZ

PS150 Centric C-SJ5-8 Controller, motor and pump

SOLAR PUMPING SYSTEM

Example: PS150 Centric with Float System installed.

| Pump End (PE)

- High life expectancy
- Freeze protection optional, water drains back to source.
- Dry running protection (optional)
- Material: stainless steel (AISI 316),rubber

| Motor EC Drive

- Brushless DC motor, 3-Phase (PWM)
- No electronics inside motor
- Water filled
- IP 68, pressure balanced, max. submersion unlimited
- Dynamic slide bearings, material: carbon/ceramic
- Wetted material: stainless steel (AISI 316), POM, rubber, cable drinking water approved

Solar or battery-operated Submersible Pump System 4”
Helical Rotor (HR) or Centrifugal (C) Pump Unit

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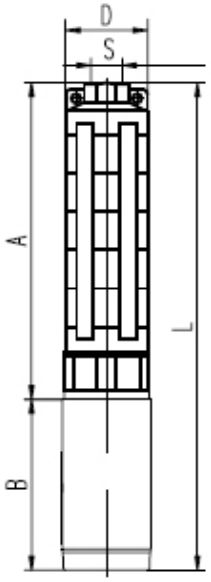
Pump Unit (Pu) (motor + pump end)	Dimensions L	A	B	D	S	Shipping Dimensions packaging	shipping volume	net weight	gross weight
	[mm]	[mm]	[mm]	[mm]		[mm]	[m³]	[kg]	[kg]
C-SJ5-8	593	408	185	100	G 1 1/2"	650X160X150	0,016	12	12,5
Controller Type									
PS150-C						320X240X160	0,0123	1,2	1,8

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				



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 Ft	Lift m	12V Battery or 65Wp Solar direct Current A	Flow Rate / min L	US G	5hrs solar day m³	USG	17V or 150Wp Solar direct Current A	Flow Rate / min L	US G	5hrs solar day m³	USG	24V Battery or 300Wp Solar direct, current = 12,5A Flow Rate / min L	US G	5hrs solar day m³	USG	450Wp Solar direct 5hrs solar day m³	USG	Lift Ft	Lift 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
		Note: a solar tracker will improove daily output in summer by 40 to 50%										50	13,2	15,1	4.000	23	6.000	53	16
		Note: Solar modules have less output due to high temperature, dirt, manufactures tolerances etc.										42	11,1	12,5	3.300	19	4.950	66	20
		Choose a 20-30% larger array to compensate these effects.										34	9,0	10,2	2.700	12	3.200	73	22