

PP4000 AC PowerPack

AC/DC converter to power PS4000 pump systems
from a generator or utility power



APPLICATION

The Problem

Some solar pumps may not provide sufficient flow under all conditions, especially in unusually cloudy weather or when sufficient storage cannot be provided.

The Solution

The LORENTZ AC PowerPack allows the pump to be powered by an AC generator or commercial utility power. The PowerPack will power the pump to its full capacity. With some systems, it will produce a greater flow rate than you will see with solar power.

SPECIFICATIONS

- input power: max. 6,1 kW (max. 6,75 kVA)
- power factor: min. 0,9
- 3-phase AC input: 380V ($\pm 20\%$), 45 to 65 Hz
- DC output: 180-286 V, 5.7 kW
- DC output rated current: 20A at 230V DC
- integrated overload protection
- must be protected from direct mid-day sun
- Enclosure class: IP 42
- ambient temperature: $-5\text{ }^{\circ}\text{C}$ to $45\text{ }^{\circ}\text{C}$ ($23\text{ }^{\circ}\text{F}$ to $113\text{ }^{\circ}\text{F}$)
- efficiency up to 94 %

DIMENSIONS

- 332 mm \times 210 mm \times 201.8 mm
15.7 in \times 8.7 in \times 8.3 in
- weight: 14.5 kg/30 lbs

WARRANTY

Warranted to be free from defects in material and workmanship for TWO YEARS from date of purchase.

INSTALLATION



WARNING This device is to be installed, connected and serviced by qualified personnel only. Ensure all power sources are disconnected when making connections to this unit. Follow all appropriate electrical codes. There are no user-serviceable parts inside.

Mounting

Mount the AC PowerPack close to the pump controller, in a horizontal position.



WARNING The device is **NOT** water-proof. The installation location has to be selected according to a proper protection against any contact with water.



The installation location must allow proper ventilation of the PowerPack for cooling.



WARNING The PowerPack must be protected from solar heat, especially direct mid-day sun. Mount it in the shade. If there is no shady location, make a shade from sheet metal. Allow free air circulation around the cooling fins on the back of the enclosure.



WARNING The Power Pack must be OFF while it is being wired to the solar pump controller, or controller damage may result. Never connect it while it is "hot".

Connections

For all connections, see the description on the sticker on the back of the device.

Wire Sizes

All wires must be 2.5 mm² (14 AWG) or larger.

Grounding

Connect proper ground to the yellow-green wire of the AC cable.

AC Input

Connect proper ground to the yellow-green wire of the AC cable. Connect AC power to the phases L1, L2, L3. As there is always a balanced load on the three phases, a neutral connection is obsolete. Be aware that in most installation codes it is not allowed to use a 5-pole plug (3P + 1N + 1 PE) for this, because the neutral is not connected. Use a 4-pole plug instead, according to the local standards.

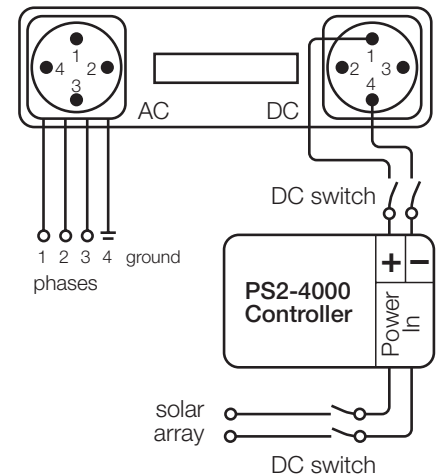
DC POWER OUT

Connect the two wires from the DC POWER OUT plug to the POWER IN + and – terminals in the solar pump controller. Install a properly rated DC disconnect switch between the PP4000 and the solar pump controller. Install a properly rated DC disconnect switch between the solar generator and the pump controller, too.



WARNING – Only one of the power sources must be connected at a time.

Figure 1: Wiring



OPERATION

Connect the AC power source and turn on the PowerPack AFTER it has been connected to the PS4000 or PS2-4000 series controller. When the controller and the PowerPack are switched on, the System ON light should show on the controller, and the pump should start.

If the AC power source is disconnected from the utility line (not a generator), it is best to turn OFF the PowerPack or its AC supply when it is not needed. Otherwise, the PowerPack will draw a small amount of power all the time.

Keyboard and Settings

Basic Display

This shows the present voltage, current and status.

VOLTAGE: 250.0 V	RUN
CURRENT: 00.0 A	FLOAT

Run/Stop: Operation status of output
Float/Equalize: Voltage setting

Use buttons ▲▼ to change the status display. Default is the "basic display" mode.

Press "SET" button to switch to main menu.

Main Menu

◆ SETUP	RUN
ADJUST	FLOAT

Use buttons ▲▼ to move the cursor ◆.

Press "SET" to choose an option:

- Setup menu to change settings (see below)
- Adjust menu (not applicable, do not change)
- Choose between operation status "Run" and "Stop", confirm with "SET"
- Choose between between voltage settings "Float" and "Equalize", confirm with "SET"

After 15 seconds the display changes back to the "basic display" mode.

Setup Menu

Use buttons ▲▼ to move the cursor ◆.

Use + and - to change the entry on which the cursor is located.

BUS:	BUS1	◆
ADDRESS:	02	

Setting not applicable – do not change.

FLOAT:	250.0 V	◆
EQUALIZE:	255.0 V	

Settings for float and equalize mode

LIMIT:	16.0 A	◆
PROTECT:	264.0 V	

Current limit, value for overload protection

BUS:	BUS1	◆
ADDRESS:	02	

Setting not applicable – do not change.

To save changes, move cursor to "SAVE" and press "SET".

To return to the main menu without saving, press "SET" while the cursor is placed on any other option.