

# SOLID STATE ORGAN SYSTEMS



## PowerLight – 55A Variable Voltage Unit - Installation Instructions

Thank you for purchasing the new high performance Solid State Organ Systems PowerLight. This device is designed and built with high quality components to help ensure years of continuous use. The unit is protected by multiple protection features for a long, trouble free life.

Over Current protection – cycle by cycle peak limiting as well as rated current limiting to maximize life. The unit is overload and over temperature protected, but please observe these simple directions to maximize performance.

The units must be given adequate ventilation otherwise they will shut down from overheating and can also be damaged.

### ***Mounting the Unit***

The units may be mounted on either a vertical or horizontal surface. Do not mount in a location where the unit could draw in dust or be subjected to water spills.

### ***Ventilation***

Ventilation is critical. The unit is highly efficient and produces very little heat but if the internal temperature exceeds a safe operating limit the power will shut off until it has cooled down, leaving you with no organ!

**The unit must be mounted with at least one inch of free air on all sides.** If sealed inside a cabinet there must be sufficient air to allow dissipation of the heated air.

The fan is controlled by a unique proportional fan control circuit so that, should additional cooling be required the fan will turn on very slowly, minimizing start up noise.

### ***Technical Specification***

These supplies use switch mode technology to produce a high performance supply in a small size with only one tenth of the weight!

Unlike some power supplies each unit will supply at least the specified output for a continuous period. As with all supplies, this rating is for 12V and should be de-rated with increased voltage.

The unit has a very fast response time to increased load. Stops will move faster and often require less voltage to operate them.

When the maximum output current limit is reached the PowerLight will reduce the output voltage to maintain the current. The unit will not shut down due to excessive current drain unless there is a short circuit.

These units are fitted with a variable voltage control to adjust the voltage between 11.5 and 15.5V.

### ***Caution:***

Do not install this or any electrical accessory in a compartment intended for storing flammable liquids such as thinners or gasoline etc. whose fumes are explosive and can cause injury and death. There are no components in PowerLight which in normal operation cause arcs or sparks (such as in the operation of a relay).

### ***Medical Appliances***

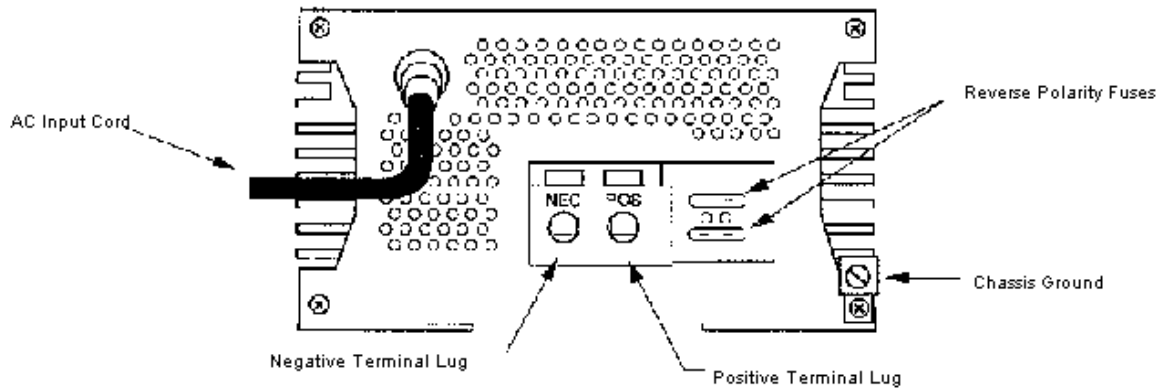
Solid State Organ Systems will not knowingly sell its products for any life support applications. It is strongly recommended that you do not operate, either directly or indirectly, any 12 volt life support equipment from a PowerLight. If the PowerLight should malfunction, or fail to operate due to other conditions, with or without a battery in the system, it is presumed that all low voltage appliances including any connected to life support equipment would also shut down, resulting in a potential risk of medical complications and loss of life.

### ***Compliance to regulations:***

The device complies with Part 15 of the FCC rules. Operation is subject to the two following conditions:

1. This device may not cause harmful interference
2. This device must accept any interference received, including interference that may cause undesired operation.

The units are approved by ETL for compliance with UL (UL 458) and CSA (C.22.2 No. 107.1).



### **Connection:**

#### **Input:**

The units require 108-132 Volts 47-63 Hz.

Input requirement: 925 Watts, allow for switch on surge, maximum current draw 13A at 108V. Maximum inrush current for one cycle 40 Amps.

#### **AC Power Connection**

The US model is supplied with a standard AC input with a removable cable socket to Cable supplied 2ft long with standard US Style 15A Edison plug.

The unit requires 47-63 Hz between 108 and 132V AC.

#### **Fitting other types of connectors**

Only qualified electricians should modify the AC wiring.

If a qualified electrician needs to remove the factory fitted AC connector to fit a version more suited to the local installation please choose the correct cable before doing so.

#### **Output**

DC output connection via recessed screw terminals each capable of feeding a 2 AWG wire (40mm<sup>2</sup>).

Outputs are marked Pos (+), Neg (-) and bare metal (ground) The ground connector is available if needed but is not usually required in organ building.

Outputs can be paralleled or placed in series for higher voltages.

When connecting in series one supply will have the negative connected to the positive of the other, this will cause the negative to ground link inside the second unit to disconnect preventing a short circuit through the ground. Chassis grounds to the units from the ac feed must remain connect for safety. There is no need for any action on your part this is for information only.

#### **55 Amp Supply**

Output Capability: 55 Amps with a variable voltage from 11.5 to 15.5 Volts.

### ***Changing the Voltage:***

The output voltage is adjusted using a small screwdriver or electronic trim tool.

To change the voltage it is necessary to remove the cover by unscrewing the 4 Phillips screws on each side. The cover will then lift off. Once the cover is removed dangerous electrical voltages will be exposed and so this procedure must only be undertaken by a qualified electrician.

Inside the unit is a small screwdriver slot preset control on the circuit board next to the large silver heatsink and the fan.

The tool can now be engaged on the screwdriver slot of the small voltage adjustment control. Clockwise reduces the voltage and counter-clockwise increases it. The control requires 10 turns to go from low to high and so it is easy to accurately set the voltage.

### ***Grounding Issues***

This unit is fitted with an ungrounded negative connection and a separate ground lug. There are a number of options open to you:

With Solid State Organ Systems equipment it is not necessary to connect the ground to negative but it can help reduce lightning damage in some circumstances.

If you are using Peterson MultiPlex systems it is wise not to connect the ground as it may cause loops and instability.

If you are using audio equipment such as electronic voices grounding negative may reduce buzzing in the speakers. A steady 120Hz hum can often be introduced by connecting the ground and so try both options for best effect.

***Dimensions:*** 10" x 5.4" x 3.3" (250mm x 136mm x 83mm)

Weight: 5lb

### ***For more information or product support please contact:***

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