



## PSC Baby Zeus™



- 20 Amp Hour LiFePO4 Battery
- 12 Amp High Reliability AC Power Supply/Charger
- One 6 Amp Output, Seven 3 Amp Outputs
- Properly Engineering System Cooling
- Rapid Recharge LiFePO4 Battery
- Exclusive PSC Silent Power Technology
- 4 Amps of USB Charging Power Available
- Convenient multi-Colored battery “Fuel gauge”
- Built in Battery Cell Balancing for Longer Battery Life
- Reversible, Offsetable Rack Mount Brackets
- PSC has Been Providing Reliable Power Solutions Since 1986

### Operation Manual Version 1.0

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28085 Smyth Drive, Valencia, CA 91355 USA

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Thank you for purchasing your new PSC Baby Zeus re-chargeable power distribution system. This new power system combines an AC Power Supply, Charger, LiFE Rechargeable Battery, Power Distribution, Power Filtering, Monitoring and Protection Circuitry all in a 2U High, Half width rack mount space. We believe this design is the new gold standard for very compact field power systems. We recommend this product for use with sound carts that draw 10 amps of current or less.

**PLEASE BE SURE THAT YOU HAVE READ AND UNDERSTOOD THIS ENTIRE OPERATIONAL MANUAL BEFORE OPERATING THE PSC BABY ZEUS!**

**CAUTION! THE CASE OF THE BABY ZEUS MAY GET WARM DURING USE. DO NOT ALLOW ANYTHING TO BLOCK THE REAR FAN AIR INLET AND/OR TOP COVER VENT OPENINGS. ALWAYS ALLOW AT LEAST A 1" AIR GAP ABOVE THE TOP COVER VENT OPENINGS. ALL AUXILARY EQUIPMENT SHOULD BE REVERSE POLARITY PROTECTED AND PROPERLY FUSED AT ALL TIMES.**

**THE BABY ZEUS IS DESIGNED FOR USE BY ITSELF OR WITH THE PSC PELICAN LiFE BATTERY AND IS FACTORY ADJUSTED FOR PROPER CHARGING OF LiFEPO4 BATTERIES ONLY! DO NOT CONNECT THE BABY ZEUS TO OTHER BATTERY TYPES OF DIFFERENT CHEMISTRIES OR VOLTAGES. DAMAGE AND/OR FIRE CAN RESULT FROM USING MISMATCHED CHARGERS AND BATTERIES.**

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**LiFE BATTERY SAFETY:** This new product design is based on Lithium Iron Phosphate battery chemistry.....also known as “LiFEPO4”. LiFEPO4 cells offer high capacity in a lightweight package similar to Lithium Polymer or Lithium-Ion cells, but with one big improvement. LiFEPO4 chemistry is much more inherently safe as it does not suffer from temperature runaway conditions like older lithium chemistries do. The older lithium batteries were prone to fire if physically damaged or short circuited. These new LiFEPO4 batteries have proven to be a much safer alternative. While this battery chemistry is considered to be very safe, the TSA (Transportation Safety Authority) has not yet made the distinction between these LiFEPO4 lithium cells and the older less safe Lithium technologies. Please read and understand all transportation regulations before shipping these batteries on public airlines. You can get a full, detailed explanation of these regulations at the TSA website: [http://safetravel.dot.gov/whats\\_new\\_batteries.html](http://safetravel.dot.gov/whats_new_batteries.html) Additional information concerning “Larger Batteries” that applies to this product can be found here: [http://safetravel.dot.gov/larger\\_batt.html](http://safetravel.dot.gov/larger_batt.html) Never ship your PSC Baby Zeus if it has been physically or electrically damaged.

#### **AC POWER SAFETY:**

All AC powered devices should be treated with proper caution and respect. AC power on film sets and on locations may not always be properly grounded and/or distributed. PSC highly recommends that you purchase and use an AC power tester prior to plugging in your PSC Baby Zeus or any other AC powered device while on location. You can purchase simple to use, inexpensive AC testers for less than \$20. They are a simple plug that has 3 or 4 lights on the rear of the plug. These lights indicate good AC, proper grounding, etc. They can also indicate dangerous AC conditions such as Hot and Neutral reversed or missing grounds. These AC testers can be purchased at most electronics stores. Here is an example of a typical AC Tester. PSC does not recommend any specific brand or take responsibility for its use or performance.



**Typical AC Tester of the type you should use before plugging into AC on a film set or location.**

## FRONT PANEL:



The front panel of the PSC BABY ZEUS contains eight (8) DC power output connections on 4 pin female XLR's. A SpeakOn connector used to connect the unit to an external battery (PSC Pelican LiFE Battery). A 5-pin female XLR used to connect the BABY ZEUS Remote Control. An AC indicating BLUE LED. A Multi Colored LED "Fuel Gauge" to indicate battery charge level. Power "ON" and "OFF" push button switches (delayed action for "OFF" switch). AC Input Connector.

**AC CONNECTION:** On the front panel of the Baby Zeus you will find the AC power connection. This connection accepts a standard IEC power cord. You will also notice that as part of the AC receptacle there is a built fuse holder that holds the AC protection fuse. This unit uses a 250v, 15 Amp, slow blow, 5 x 20mm fuse. A spare fuse is included inside the fuse holder drawer.



AC input with fuse holder

**RACK MOUNTING:** Your new Baby Zeus is designed to be rack mounted. It comes with a pair of heavy duty rack mount brackets. These brackets can be used from the front of the unit or the rear of the unit. The brackets are designed to allow flush mounting of the Baby Zeus to the rack rails or recessed mounting allowing room for the XLR power connectors to not stick out beyond the rack rails. The screws for installing these brackets are included. **Please only use 6-32 x 0.375" screws with this Baby Zeus. The use of longer screws may cause internal damage to the unit.**

**HEAT DISSIPATION:** The PSC Baby Zeus uses a special, slow speed, low noise fan to provide proper system cooling. This properly engineered cooling system uses linear air flow cooling to pull heat away from the unit's power supply. Over time, the fan grill and internal electronic components will build up a layer of dust and dirt. This happens faster in dusty environments. PSC recommends that you blow the dust out of the unit using compressed air from time to time to keep the unit clean and cool running. You must leave open space above and to the rear of the PSC Baby Zeus for proper cooling to take place. Likewise, this product should not be used in fully enclosed rack case or other enclosures that limit air flow. Failure to provide proper ventilation can and will damage the unit and will void your warranty.

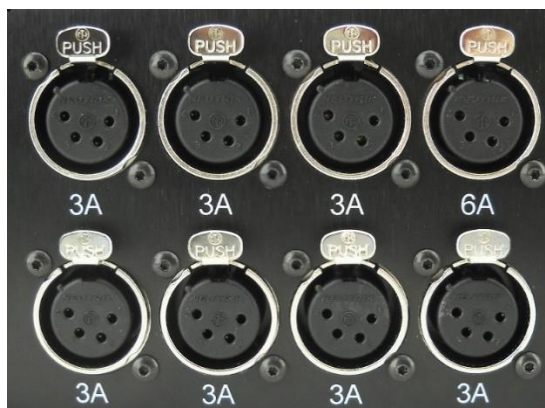


**View of rear panel fan air inlet, this must be kept unobstructed**



### Close up view of vents that must remain unobstructed

**DC CONNECTIONS:** There are eight (8) XLR female DC output connectors located on the front panel of the Baby Zeus. Seven (7) of the XLRs are rated for 3 Amps of output current. The remaining one (1) output connector is rated for 6 Amps of output current. Each connector is individually Poly Fuse protected and filtered so as to deliver clean, reliable power. If you ever have any questions about this, please do not hesitate to call PSC and ask to speak with our service technician. We are always available to help you in any way needed. Pin outs are industry standard. Pin 1 is Ground and Pin 4 is Positive (+).

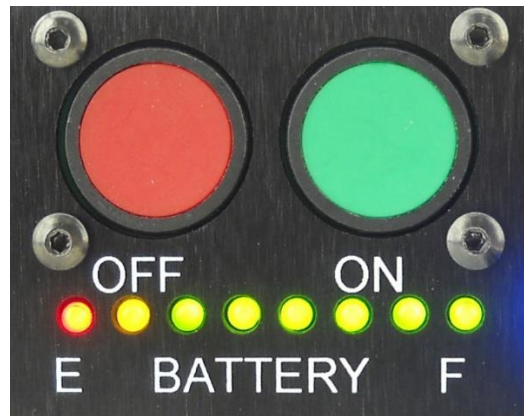


**Seven (7) Output Connectors @ 3 Amps**

**One (1) Output Connectors @ 6 Amps**

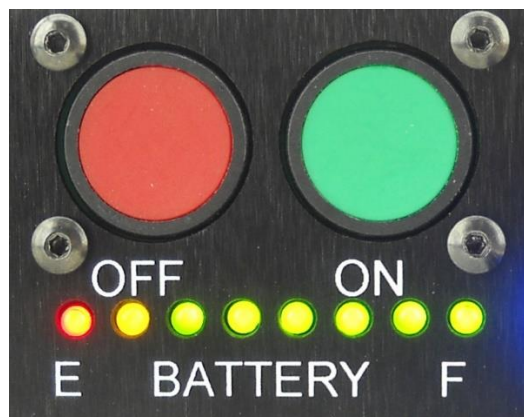


**POWER SWITCHES:** There are two round, momentary push button switches used to turn the unit on and off. The GREEN “ON” push button switch is used to turn the unit on. The RED “OFF” push button is used to turn the unit off. Please note that the RED “OFF” push button switch is equipped with a time delay circuit. You must press and hold this push button switch for 3-4 seconds before the unit will shut off. This time delay function serves to keep you from accidentally shutting down the PSC Baby Zeus unexpectedly while working.



**RED and GREEN Power ON and OFF switches**

**FUEL GAUGE:** The PSC Baby Zeus is equipped with an easy to read and easy to understand multi-colored battery “Fuel Gauge”. Just a quick glance and you will immediately know the charge condition of your battery. A full row of Green LEDs indicates a fully charged battery. As the battery is discharged, the LEDs slowly go out. It is similar to reading the fuel gauge in your car. When the last (left most) RED LED goes out, the unit will shut down to protect the LiFE batteries from deep discharge. The unit must then be plugged into AC power to re-charge the batteries and/or power up your equipment. Both charging and use can be done simultaneously.



**Battery “Fuel Gauge” indicating a fully charged battery**

**AC INDICATOR:** Whenever the unit is plugged into AC power, the BLUE “AC” LED will light indicating AC power is connected. Whenever the AC indicator is lit, the batteries will be charged (if needed). In addition, you can power your equipment anytime the unit is connected to AC power whether or not the battery is fully charged. **Please note that the AC indicator may stay on after the unit is unplugged for several minutes if the unit was in a high charge mode when it was unplugged. This is normal and nothing to be concerned with.**



**BLUE LED indicating AC power is connected**

**BATTERY PROTECTION FUNCTION:** The Internal protection circuitry protects the LiFEPO4 battery in four different ways:

1. It protects the battery from deep discharge conditions.
2. It protects the battery from over charge conditions.
3. It protects the battery from overly high discharge rates (short circuits).
4. It protects the battery from excessive charge currents.

If you were to somehow short out multiple outputs of the PSC Baby Zeus, the battery protection will disconnect the batteries from the load. If this happens, the protection circuit can be reset by plugging in the PSC Baby Zeus to AC power and the protection circuitry will automatically be reset.



**REMOTE CONTROL:** The remote-control box that is included with your PSC Baby Zeus serves several functions. It can be used to remotely turn on and off the unit. This will allow you to mount the Baby Zeus main housing in a convenient place on your sound cart. The remote control also has a battery charge level indicating “Fuel Gauge” that duplicates the meter on the main unit. Additionally, the remote-control features two (2) USB charging ports for your convenience. These two USB charging ports output 5Vdc up to a total of 4 Amps of output current. Lastly, the remote control box features a bright BLUE LED indicating AC power is connected to the Baby Zeus.



**Baby Zeus Remote Control Box**

**SPEAKON CONNECTOR:** The Baby Zeus is equipped with one 2 pole SpeakOn connector. This connector is used for the connection of an external battery. Using this connector, you can add a PSC Pelican LiFE Battery for extra battery capacity. The polarity of this connector is conventional SpeakOn. The center most contact is Positive (+) and the outer ring connection is Negative (-)



**SpeakOn Connector used to external battery connection**

**CHARGING:** Your new Baby Zeus contains a built-in charger designed to charge the internal LiFePO4 battery and also charge most external LiFePO4 batteries such as the PSC Pelican Life Battery. This connector allows you to connect an external battery to increase the battery capacity of the Baby Zeus. The PSC Baby Zeus will operate from a wide range of AC power so you can plug it in anywhere world without having to worry about making adjustments. The charger circuit used in the Baby Zeus has been specifically designed for charging the batteries while the batteries are in use powering low noise audio equipment. Unlike most battery chargers, ours have a very low noise floor. Typical recharge time ranges from 1 to 2 hours with your equipment turned off. The charging function is automatic and thus, it does not require your assistance in any way. Simply plug the PSC Baby Zeus into an AC outlet and the charging begins (when needed). Be aware that the Baby Zeus may get warm during use. Be sure to allow ventilation air gaps around the top panel and rear panel of the Baby Zeus for proper heat dissipation. When using an additional external battery such as the PSC Pelican LiFe Battery, be sure to use a heavy-duty interconnect cable. This cable should be made with 12AWG wire and must use SpeakOn connectors. Please keep this and all battery cables as short as possible for best performance. We recommend a maximum external battery cable length of 3' (1M). Charging time will increase when using an external battery as the charger has more work to do.

**EQUIPMENT POWER CABLES:** PSC recommends that you use only two conductor, unshielded 16AWG power cable for power distribution. Shielded cable is not recommended as the shield may cause short circuits between adjacent pins on the connectors. Please keep all cables as short as possible as this will minimize DC voltage drop across the cable.

**WARNING:** It is highly recommended that you have your cables built by qualified personnel and tested prior to use with your Baby Zeus. All power cables should be clearly labeled on both ends as to what they are to be connected to. For example, label one end "Baby Zeus" and the other end "Lectrosonics XXX". This will help prevent inadvertently connecting the cables to the wrong piece of equipment. We cannot stress enough the importance of good quality power cables and careful connections. Poorly constructed and/or labeled cables can result in equipment damage!

**POWER FILTERING:** All PSC power products contain PSC Quiet Power Technology tm. This power filter technology allows the PSC Baby Zeus to deliver clean, quiet DC power for all of your sound equipment powering needs. These filters include both audio and RF frequency filters to ensure trouble free DC power distribution in the field. Nearly all of today's audio equipment contain DC to DC convertors within their power supplies. These convertors can and will cause inter-modulation noise when connected to common DC power sources such as a battery. Here at PSC we firmly believe that proper DC filtering can and will eliminate most noise issues in the field. Our competitors do not understand inter-modulation noise and thus do not take the additional steps to prevent it like we do at PSC. Though not every piece of equipment will suffer

from inter-modulation noise issues. Here at PSC believe that the extra parts cost and design time are worth it if because we think you deserve the best quality DC power available.



**PSC Quiet Power™ Filters partially shown behind output XLRs.**

**FUSING:** Internally, the LiFEPO4 cells are protected against many typical faults via electronic monitoring and automatic fault protection. In addition, there is a 40 Amp Slow Blow automotive blade style fuse for ultimate safety. This fuse should never blow in normal use. If you ever experience a blown fuse, something is wrong with your setup. Please call PSC for technical assistance.

**STORAGE:** Please note that all rechargeable batteries slowly self discharge while in storage. If you store this battery, it must be fully recharged prior to storing it. It should also be charged every two months while in storage. Failure to follow these instructions will cause damage to the battery and will not be covered under the PSC warranty.

#### **TERMS OF USE:**

THE IMPROPER CONNECTION OF THIS POWER SUPPLY TO AUXILIARY EQUIPMENT MAY RESULT IN DAMAGE TO SAID EQUIPMENT AND/OR PERSONAL INJURY. THIS PRODUCT IS DESIGNED TO BE OPERATED BY PROFESSIONALS IN THE FILM AND TELEVISION INDUSTRIES. THE PSC BABY ZEUS SHOULD ONLY BE OPERATED AFTER READING AND UNDERSTANDING THIS ENTIRE INSTRUCTION MANUAL. THE OPERATOR OF THIS POWER SUPPLY ASSUMES ALL RESPONSIBILITY AND LIABILITY FOR PROPER USE AND OPERATION OF THIS EQUIPMENT! PROFESSIONAL SOUND CORPORATION AND/OR ITS EMPLOYEES AND OFFICERS ASSUME NO RESPONSIBILITY OR LIABILITY FOR PERSONAL AND PROPERTY DAMAGE INCURRED DUE TO ACCIDENT, CARELESS HANDLING, ABUSE OR MISSUSE, IMPROPER CONNECTION, AND/OR INSTALLATION, IMPROPER ELECTRICAL CONTACT OR GROUNDING. OWNERSHIP AND/OR USE OF THE PSC BABY ZEUS CONSTITUTES AGREEMENT WITH THESE TERMS.

## Limited Warranty Certificate

Professional Sound Corporation warrants the entire Baby Zeus to be free of defective material and workmanship for a period of one year from the original date of purchase and agrees to repair or replace such defective parts or the whole product at its option, provided that the equipment is returned to Professional Sound Corporation. Shipping and insurance costs to and from Professional Sound Corporation must be prepaid by the owner. This warranty does not cover damage due to accident, careless handling, abuse or misuse, improper connection and/or installation, improper electrical contact, charging or grounding. This warranty will be null and void in the event of removal, alteration or tampering with the serial number, or by service or repair work not performed by Professional Sound Corporation. Proof of purchase date (copy of purchase invoice) must be furnished before warranty service will be performed. This warranty is in lieu of any other warranty, expressed or implied, including warranties without limitation, products being merchantable at the time of purchase or suitable for a particular purpose. This warranty does not extend to, or include consequential damage.

### **SPECIFICATIONS:**

<b>SIZE:</b>	<b>8.5" wide, 8.50" deep, 3.5" high (22cm x 21cm x 9cm)</b>
<b>WEIGHT:</b>	<b>9Lbs (4Kg)</b>
<b>TEMPURATURE RANGE:</b>	<b>Use: -4F to +124F (-20C to +50C)</b>
<b>AC INPUT:</b>	<b>90 – 260Vac, 47Hz -63Hz</b>
<b>OUTPUTS:</b>	<b>1x 6 Amp, 7 x 3 Amp</b>
<b>OUTPUT VOLTAGE:</b>	<b>12.8Vdc Nominal</b>
<b>OUTPUT CURRENT:</b>	<b>On LiFEPO4 Battery, 20 Amps. AC only, 12 Amps</b>
<b>CHARGING TIME:</b>	<b>Typical Cart 1.5 hours, No Load (all equipment off)</b>
<b>USB CHARGING PORT:</b>	<b>2 Ports, Total Output 5Vdc at 4 Amps</b>
<b>LIFE BATTERY CAPACITY:</b>	<b>12.8 Volts @ 20 Amp Hours (256 watts)</b>
<b>BATTERY CONNECTOR:</b>	<b>SpeakOn 2 Pole (Mating connector Neutrik NL2FC)</b>
<b>Warranty:</b>	<b>Parts and Labor, 1 year, Limited</b>

# CE

## DECLARATION OF CONFORMITY

**EMC:** This product is in compliance with the Electromagnetic Compatibility Directive, 89/336/EEC as defined in EN 50081-1, EN55022 and EN 50082-1. IEC801-2, IEC801-3 and IEC801-4.

**LVD:** This product is in compliance with the requirements of the Low Voltage Directive, 73/23/EEC. 93/68/EEC as defined in EN60065, 1993 and/or EN60950/A1/A2/A3: 1995

<b>TRADE NAME:</b>	<b>PSC</b>
<b>MODEL:</b>	<b>Baby Zeus Power Distribution System</b>
<b>RESPONSIBLE PARTY:</b>	<b>Professional Sound Corp. 28085 Smyth Drive  Valencia, CA 91355 USA</b>
<b>CONTACT PERSON:</b>	<b>Ronald Meyer  (661) 295-9395</b>
<b>TYPE OF PRODUCT:</b>	<b>Rechargeable Battery, Power Distribution</b>
<b>MANUFACTURER:</b>	<b>Professional Sound Corp.  28085 Smyth Drive  Valencia, CA 91355 USA</b>

**We hereby declare that the equipment bearing the trade name and model number listed above has been tested in accordance with the requirements contained in the above listed directives. All necessary steps have been taken and are in force to assure that production units manufactured will conform to Directive guidelines.**

**June 2022**

**Professional Sound Corporation.**