



PowerMax

Power Distribution System

Operation Manual Version 1.0
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Professional Sound Corporation
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Thank you for purchasing the Professional Sound Corporation PowerMax power distribution system. PSC is confident that the PowerMax has set new standards for clean, quiet powering of your portable audio equipment. Please feel free to contact us at the address below if you have any comments, suggestions, or questions about your new PSC PowerMax. Additionally, we are always open to suggestions for new products that you would like to see developed.

PSC extends a one-year parts and labor warranty to all PowerMax system owners who return their warranty card at the time of purchase. This warranty gives you specific rights, which are stated on the card, and enables us to keep you informed of product updates.

The PSC PowerMax provides all of the various voltages required to power your entire digital audio recording package. Its rugged design allows for complete confidence that you will have uninterrupted power throughout your recording sessions.

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

CAUTION! THE CASE AND HEATSINK ASSEMBLY OF THE POWERMAX MAY GET HOT DURING USE. DO NOT ALLOW ANYTHING TO TOUCH THE TOP OF THE HEATSINK DURING USE. ALWAYS ALLOW AT LEAST A ONE-INCH AIR GAP ABOVE THE HEATSINK.

ALL AUXILIARY EQUIPMENT SHOULD BE REVERSE POLARITY PROTECTED AND PROPERLY FUSED AT ALL TIMES.

THE POWERMAX IS DESIGNED FOR USE WITH SEALED LEAD ACID BATTERIES ONLY!

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DESCRIPTION:

The Professional Sound Corporation PowerMax power distribution system has been designed and built specifically to provide clean, quiet power for your complete digital audio recording package. This new design easily handles the heavy power requirements of today's digital recorders and mixers. When connected to one or two sealed lead acid batteries it can output 12Vdc at up to 12 amps continuous, as well as 18Vdc to power your audio mixer and wireless receivers. In addition, the PSC PowerMax outputs 6Vdc for use in powering consumer RDAT's, small video monitors and other equipment. The PSC PowerMax contains a high capacity, on board battery charger that is designed to operate from 100 to 240Vac for worldwide operation. Each of the PSC PowerMax's six output connectors contains dedicated EMI/RFI output filters to ensure clean, noise-free power for your equipment.

CHARGING:

The PSC PowerMax contains a built in charger designed to charge up to two external Sealed Lead Acid (SLA) batteries. That means you can connect either one or two separate SLA batteries such as pelican battery boxes to the PowerMax. The PSC PowerMax will operate from 100 to 240Vac so you can plug it in anywhere worldwide without adjustment or modifications. The charger circuits used in the PowerMax have 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. Using a typical 33amp/hour SLA battery you expect a recharge time of 4 hours. When using two 33amp/hour SLA batteries, you can expect a recharge time of 8 hours. The charging function is automatic and thus, it does not require your assistance in any way. Simply plug the PSC PowerMax into any AC outlet and the charging begins. Beware that the heat-sink top of the PowerMax may get hot during use. Do not touch this surface and be sure to allow at least a one-inch air gap above the heat-sink surface for proper heat dissipation.

Because the PSC PowerMax is equipped with a high capacity charger, care must be exercised in the type and condition of batteries to be charged. The PowerMax is designed to charge Sealed Lead Acid (SLA) batteries only. Additionally, it is recommended that you inspect your batteries monthly for any signs of damage such as case cracks, leaks or bulging cases. **Do not connect the PSC PowerMax to batteries that are damaged, or beyond their recommended life span.** Failure to heed this warning could result in product damage and/or personal injury. Bulging battery cases are a sure sign of a damaged battery and/or shorted battery cell. Charging a battery in this condition can result in excessive heat build up and battery venting (hydrogen gas discharge).

The PSC PowerMax is designed for use with Sealed Lead Acid batteries. These batteries do not have the memory effects associated with NiCad batteries and

unlike NiCads, SLA batteries life expectancy is based on how deeply it is discharged, how long it is left in that condition and the number of discharge cycles. Thus if you want to get the greatest life from your SLA batteries, you should keep them charged at all times. This is easily accomplished with the PSC PowerMax as it can be used while charging. The PSC PowerMax has a built in "fuel" gauge style battery meter that allows you to visually see the remaining battery capacity at a quick glance. The PowerMax is also designed to protect your batteries from over discharge. When your battery voltage drops to a pre-determined level (approximately 10.8Vdc) the PowerMax will automatically shut itself off and disconnect the load from the battery. Thus you cannot over discharge your batteries from misuse or by accidentally leaving your equipment on over a weekend, etc. The battery meter is also color coded from green to red as it falls from "FULL" towards "EMPTY". When the last red LED turns off, so does the PowerMax.

BATTERY STORAGE:

Even though the PowerMax does not contain any built in batteries, we can offer you a word of advice. Always make sure to charge your batteries before putting them into storage. Your batteries should not be allowed to go below 10.6Vdc for any extended period of time. It will permanently damage them. Because all rechargeable batteries slowly self discharge while in storage, it is recommended that you charge them every two to three months when you are not using them for extended periods of time. This will ensure that the batteries never self discharge to a damaging level.

USE:

The PSC PowerMax is designed for use in powering your entire digital audio recording package. The PowerMax's six, 4-pin female XLR output connectors provide all of the various output voltages at all times when the PowerMax is switched on. Thus all power cables wired for use between the PowerMax and your equipment must be wired correctly and professionally. Anytime the PowerMax is plugged in; its battery charger is turned on. Thus your batteries may be charged without the PowerMax's front panel electronics turned on. By pressing the "ON" button, the PowerMax will turn on and begin to supply all of the various output voltages to your equipment. If the PowerMax is connected to a battery, but not plugged into AC, all of the power will come from the battery. If the battery is discharged below a safe point, the PowerMax will not stay on when the "ON" button is pressed. If the battery level is good, the PowerMax will latch on. When the batteries are discharged to the point where the battery meter is reading empty, the PowerMax will automatically shut itself off. You can also shut off the PowerMax at any time by simply pressing the "OFF" button. You can also operate the PowerMax without batteries connected by simply plugging the PowerMax into AC and pressing the "ON" button. The PowerMax will output all

of the various voltages and supply up to approximately 150 watts of total output power when connected to AC only.

OUTPUT OVERLOAD PROTECTION:

The PSC PowerMax is equipped with Raychem Polyswitch automatically resettable fuses to protect the outputs of the PowerMax. These solid state devices act like ordinary fuses or circuit breakers. They interrupt the flow of dangerously high electrical current in the case of a fault condition in the equipment being powered. A front panel "Fault" LED will light up when a particular Polyswitch has been tripped. For example, if the 12Vdc output is overloaded, the Polyswitch that protects the 12Vdc output will trip and the "12V Fault" LED will light up. The Polyswitch will only reset after the fault has been removed and the Polyswitch allowed time to cool down (approximately 30 seconds). The Polyswitch requires no manual resetting or replacement eliminating the need to carry spare fuses in the field. Please note that these output protection devices should not trip during normal use of the PowerMax! If you experience tripping of these devices on any continuing basis, something is wrong and a qualified technician should check your equipment and cables immediately.

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.

NOTE: Use only the pins required for the correct voltage to operate your specific piece of equipment! For example, if your RDAT recorder requires 12Vdc to operate, then you should only connect pins 1 (ground) and pin 4 (12Vdc). In this case you should not use pins 2 (6Vdc) or pin 3 (18Vdc) as these voltages are not required and could potentially damage your equipment. Many pieces of equipment use pins 2 and 3 for other functions such as battery charging and there are no industry standards for the use of these pins. Their use may not be compatible with the PowerMax. Remember, use only 2-conductor cable and wire only 2 pins on your connectors!

It is highly recommended that you have your cables built by qualified personnel and tested prior to use with your PowerMax. All power cables should be clearly labeled on both ends as to what they are to be connected to. For example, label one end "PowerMax" and the other end "Fostex PD6". 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!



REAR PANEL CONNECTIONS:

AC Cord

2x Battery Connections

6x Power Outputs

WARNING!

THE PSC POWERMAX OUTPUTS MULTIPLE VOLTAGES AT SUBSTANTIAL CURRENT! ALL AUXILIARY EQUIPMENT SHOULD BE REVERSE POLARITY PROTECTED AND PROPERLY FUSED TO MANUFACTURERS RECOMMENDATIONS AT ALL TIMES! THE PSC POWERMAX IS CAPABLE OF SUPPLYING MORE THAN 12 AMPS OF OUTPUT CURRENT INTO A SHORT CIRCUIT BEFORE THE INTERNAL POLYSWITCH TRIPS. THIS IS MORE THAN ENOUGH POWER TO SEVERELY DAMAGE UNPROTECTED EQUIPMENT!

DO NOT DISASSEMBLE THE PSC POWERMAX! IT CONTAINS NO USER SERVICEABLE PARTS OR ADJUSTMENTS. HIGH VOLTAGE AND CURRENT MAY BE PRESENT. REFER ALL SERVICE TO QUALIFIED PERSONNEL ONLY.

TERMS OF USE:

THE IMPROPER CONNECTION OF THIS POWER SUPPLY TO AUXILIARY EQUIPMENT MAY RESULT IN DAMAGE TO SAID EQUIPMENT AND/OR PERSONAL INJURY. THE OPERATOR OF THIS POWER SUPPLY ASSUMES ALL RESPONSIBILITY AND LIABILITY! 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 POWERMAX CONSTITUTES AGREEMENT WITH THESE TERMS.

SPECIFICATIONS:

Size: 10" x 8" x 3.25" (25.4cm x 20cm x 8.2cm)

Weight: 7Lbs (3.2Kg)

AC Input Power: 100 to 240Vac, 50/60Hz

DC Input Power: SLA batteries, minimum capacity of 33Amp/hour each
Pins 1&2 Ground
Pins 3&4 +12Vdc

Output Power: Pin 1 = Ground
Pin 2 = +6Vdc @ up to 5 amps
Pin 3 = +18Vdc @ up to 5 amps
Pin 4 = +12Vdc @ at up to 12 amps

Charging Time: 4 hours (typical per 33amp/hour battery)

Charger Type: Constant Voltage Type, Current Limited to 9 amps.

Warranty: Limited, One Year, Parts and Labor.