

# ART 4x4 PRO SERIES

PROFESSIONAL GRADE POWER CONDITIONERS WITH ADVANCED POWER FILTERING



## USER'S MANUAL



# IMPORTANT SAFETY INSTRUCTIONS - READ FIRST



This symbol, wherever it appears, alerts you to the presence of uninsulated dangerous voltages inside the enclosure that may be sufficient to constitute a risk of shock.



This symbol, wherever it appears, alerts you to important operating and maintenance instructions in the accompanying literature. Please read the manual.

**Read instructions** Retain these safety and operating instructions for future reference. Heed all warnings printed here and on the equipment. Follow the operating instructions printed in this user guide.

**Do not open** (except to convert the 1/4-inch jacks from inputs to outputs. See page 4.) There are no user serviceable parts inside. Refer any service work to qualified technical personnel only.

**Power sources** Only connect the unit to mains power of the type described in this user guide or marked on the rear panel. The power source must provide a good ground connection.

**Power cord** Use the power cord with sealed mains plug appropriate for your local main supply as provided with the equipment. If the provided plug does not fit into your outlet consult your service agent. Route the power cord so that it is not likely to be walked on, stretched or pinched by items placed upon or against.

**Grounding** Do not defeat the grounding and polarization means of the power cord plug. Do not remove or tamper with the ground connection on the power cord.

**Moisture** To reduce the risk of fire or electrical shock, do not expose the unit to rain, moisture or use in damp or wet conditions. Do not place containers of liquid on it, which may spill into any openings.

**Heat** Do not locate the unit in a place close to excessive heat or direct sunlight, as this could be a fire hazard. Locate the unit away from any equipment which produces heat, such as power supplies, power amplifiers and heaters.

**Environment** Protect from excessive dirt, dust, heat, and vibration when operating and storing. Avoid tobacco ash, drink spillage and smoke, especially that associated with smoke machines.

**Handling** Protect the controls from damage during transit. Use adequate padding if you need to ship the unit. To avoid injury to yourself or damage to the equipment, take care when lifting, moving or carrying the unit.

**Servicing** Switch off the equipment and unplug the power cord immediately if it is exposed to moisture, spilled liquid or the power cord or plug becomes damaged during a lightning storm or if smoke odor or noise is noted. Refer servicing to qualified technical personnel only.

**Installation** Install the unit in accordance with the instructions printed in the user guide.

## Table of Contents:

<b>IMPORTANT SAFETY INSTRUCTIONS - READ FIRST .....</b>	<b>II</b>
<b>INTRODUCTION .....</b>	<b>1</b>
<b>FEATURES.....</b>	<b>2</b>
<b>PROFESSIONAL GRADE POWER CONDITIONERS WITH APF.....</b>	<b>3</b>
<b>OPERATION.....</b>	<b>4</b>
MAXIMUM LOAD .....	5
LAMPS (MODELS SP4x4 PRO & PS4x4 PRO) .....	5
POWER SWITCH.....	5
USB CHARGING PORTS .....	5
METER PREVIEW .....	5
<b>WARRANTY INFORMATION.....</b>	<b>6</b>
LIMITED WARRANTY .....	6
EXCLUSIONS.....	6
<b>SERVICE .....</b>	<b>7</b>
<b>SPECIFICATIONS.....</b>	<b>8</b>

# INTRODUCTION

Thank you for purchasing Applied Research and Technology's **ART 4x4 PRO Series**. After getting familiar with the Power distribution system, you'll realize what a great investment you've just made.

The **ART 4x4 Series** power Distribution System may be used everywhere! Anywhere you need power distribution and conditioning - you'll be using a ART 4x4 PRO Series power conditioner.

**ART 4x4 PRO Series** power distribution systems feature a unique "4x4" AC jack layout on the back of the unit where four of the eight rear outputs are set 1.25-inches apart, allowing the user to plug in wide power cables and multiple wall warts devices.

Built into the **ART 4x4 Pro Series** is a surge and spike protection designed to protect powered equipment from harmful electric surges and spikes that are a commonplace in venues. The unit also has FRI and EMI filtering to eliminate cable induced noise in the AC power.

A front-located brightly illuminated on/off power switch ensures convenient power up and confirmation of the power source. The unit has two USB charging ports. The unit has a total capacity of 1800 watts, and has a conveniently front-mounted, 15 amp circuit breaker for quick resets when necessary.

The rugged, all steel chassis occupies 1U rack spaces and is intended for installation into standard 19-inch equipment racks. Applications for the 4x4 Pro Series Power Distribution Systems include live sound systems/PA systems, DJ sound systems, home and project recording systems and monitor systems.

Please read all instructions carefully before operating.

# FEATURES

## **All 4x4 PRO SERIES Models (PB4x4 PRO - SP4x4 PRO - PS4x4 PRO) feature:**

- Advanced Power Filtering (APF)
- Front-Mounted Circuit Breaker Reset Switch
- Front-Mounted Unswitched Power Outlet
- Two USB Charging ports 1A, 2.1A
- Surge & Spike Protection
- EMI & RFI Filtering
- Handy “4X” Distribution on the back - Four of the eight rear switched outputs are wider for AC adapters
- Total Power Capacity of 1800 watts
- Durable All-Steel Chassis Occupies 1u Rack Space
- Rear mounted portable gooseneck 12V lamp – detachable (included with unit)

## **4x4 PRO SERIES Model SP4x4 PRO adds:**

- 2 Front Pull Out LED Light Pipes
- LED digital readout to monitor Input Voltage
- Separate On/Off Light Switch with variable Dimmer
- Meter Preview momentary rocker switch

## **4x4 PRO SERIES Model PS4x4 PRO has all of the features of the Model SP4x4 PRO, and adds:**

- LED digital readout to monitor Load Current

# Professional Grade Power Conditioners with APF



Domestic units (shown) Exports units use a Male IEC receptacle, as shown on the rear Export panel



Rear layout (Domestic) the rear panel is the same for all three 4x4's.



Rear layout (Export) the rear is the same for all three 4x4's.

## OPERATION

**All PRO SERIES** models have an additional internal discrete module called APF (Advanced Power Filtering), which filters out digital and dimmer hash as well as any high frequency noise that is above the audio range. Many off-the-shelf add-on modules saturate and lose their filtering effectiveness as the load increases, but by using a high power discrete design we were able to create a filter that stays effective over the full operating range.

By using both Common Mode and Differential Mode topologies in series for the filter design we are able to block virtually all of the unwanted noise that is between the AC line and ground, and also the two sides of the AC line. This has the additional benefit of reducing ground loop problems in your system.

High frequency noise currents in particular are highly attenuated in both directions so that any line noise that could be generated by one of your components is not allowed to get back into your main AC wiring, so if you use a number of **PRO SERIES** Power Conditioners in your setup, you can distribute and isolate the noisy components from the sensitive components in your system. Additionally, any signals above 10kHz are filtered from the line with over 40dB of attenuation above 100kHz.

**The ART 4x4 PRO SERIES** Power Distribution Systems also protect your delicate electronic equipment with high voltage varistor (MOV) surge and transient suppressors. The fast-acting suppression circuit responds in less than a nanosecond, clamping transient voltages to safe levels.

**The SP4x4 PRO and PS4x4 PRO** units feature a front panel METER PREVIEW function. This momentary switch will allow the meters to measure the incoming line voltage and current while the main POWER switch is in the OFF position and no power is being applied to the rear outlet receptacles. This can be a useful check prior to applying power to equipment connected to the 4x4 PRO outlets.

## **MAXIMUM LOAD**

The eight circuit breaker protected outlets are rated at 15 amps total, which is equivalent to 1800 watts at 120 volts. If the total load on the 4x4 PRO Series Power Distribution System's outlets (and rack lights on the SP4x4 PRO & PS4x4 PRO) exceeds 15 amps, the circuit breaker will trip, cutting off power to your rack. If this happens, reduce the load by unplugging one or more units from the unit, then push the circuit breaker button in to reset it.

## **LAMPS (Models SP4x4 PRO & PS4x4 PRO)**

The 4x4 PRO Series Power Distribution Unit's lamps pull out easily and may be aimed to provide the best illumination for your equipment. Adjust the DIMMER control for the desired brightness. You should set the RACK LIGHTS switch to the OFF position if not using the lights for an extended period of time.

## **POWER SWITCH**

The 4x4 PRO Series Power Distribution Units have a master POWER switch for the rear outlets as well as the lights (SP4x4 PRO & PS4x4 PRO). This switch glows when the unit is on.

## **USB CHARGING PORTS**

Two charging ports are located on the front of the unit, max current draw are 1A and 2.1A.

## **METER PREVIEW**

This momentary switch will activate the digital meters to measure the incoming line voltage (and current on PS models) while the main POWER switch is off. NOTE: Normally there would be no current flowing since the rear panel output jacks are off, however the front panel outlet is always on, so the digital ammeter will still display any current flowing through the front panel outlet. The primary application of this switch is to check the incoming voltage prior to turning on the main POWER switch.



# WARRANTY INFORMATION

## Limited Warranty

Applied Research and Technology will provide warranty and service for this unit in accordance with the following warrants:

Applied Research and Technology, (A R T) warrants to the original purchaser that this product and the components thereof will be free from defects in workmanship and materials for a period of **three** years from the date of purchase. Applied Research and Technology will, without charge, repair or replace, at its option, defective product or component parts upon prepaid delivery to the factory service department or authorized service center, accompanied by proof of purchase date in the form of a valid sales receipt.

## Exclusions

This warranty does not apply in the event of misuse or abuse of the product or as a result of unauthorized alterations or repairs. This warranty is void if the serial number is altered, defaced, or removed.

A R T reserves the right to make changes in design or make additions to or improvements upon this product without any obligation to install the same on products previously manufactured.

A R T shall not be liable for any consequential damages, including without limitation damages resulting from loss of use. Some states do not allow limitations of incidental or consequential damages, so the above limitation or exclusion may not apply to you. This warranty gives you specific rights and you may have other rights, which vary from state to state.

For units purchased outside the United States, an authorized distributor of Applied Research and Technology will provide service.

# SERVICE

The following information is provided in the unlikely event that your unit requires service.

1. Be sure that the unit is the cause of the problem. Check to make sure the unit has power, all cables are connected correctly, and the cables themselves are in working condition. You may want to consult with your dealer for assistance in troubleshooting or testing your particular configuration.
2. If you believe that the ART unit is at fault, go to **www.artproaudio.com**.
3. Select “*Support*”, then “*Return Authorization Request*” to request a return authorization number.
4. If you are returning the unit for service, pack the unit in its original carton or a reasonable substitute. The original packaging may not be suitable as a shipping carton, so consider putting the packaged unit in another box for shipping. Print the RA number clearly on the outside of the shipping box. Print your return shipping address on the outside of the box.
5. Include, with your unit, a note with the RA number and your contact information, including a return shipping address (we cannot ship to a P.O. box) and a daytime phone number, and a description of the problem, preferably attached to the top of the unit. Also include a copy of your purchase receipt.

## Fill in the following information for your reference

Date of purchase \_\_\_\_\_

Purchased from \_\_\_\_\_

Serial Number \_\_\_\_\_

# SPECIFICATIONS

<b>Power Capacity</b>	1800 Watts
<b>Circuit Breaker</b>	15 Amp Domestic, 8 Amp Export Front Location
<b>Power Outlets</b>	Rear Outlets (x 8) Front Outlet (x 1)
<b>USB Charger</b>	5V/3.1A (OVP&OCP)
<b>Power Switch</b>	Front Location - On/Off
<b>Power Switch Illumination</b>	Yes - In "On" Position
<b>Surge &amp; Spike Protection</b>	Yes
<b>Power Dissipation</b>	1800 Joules
<b>Filtering</b>	APF, EMI & RFI
<b>Construction</b>	All - Steel Chassis
<b>Light Pipes</b>	PB4x4Pro - None SP4x4Pro - 2 Front Pull-Out Shock Mounted w/dimmer PS4x4Pro - 2 Front Pull-Out Shock Mounted w/dimmer
<b>Metering</b>	PB4x4Pro - None SP4x4Pro - Input Voltage PS4x4Pro - Input Voltage, Load Current
<b>Dimensions (HWD)</b>	1.75-inch x 19-inch x 6.5-inch 44mm x 482mm x 165mm
<b>Weight</b>	5.5 lbs. (2.5 kg) PB4x4PRO 6.3 lbs. (2.8 kg) SP4x4PRO 6.6 lbs. (3.0 kg) PS4x4PRO

ART maintains a policy of constant product improvement. Therefore, specifications are subject to change without notice.



**[www.artproaudio.com](http://www.artproaudio.com)**  
**E-mail: [support@artproaudio.com](mailto:support@artproaudio.com)**

© 2019 Applied Research & Technology