# PROFESSIONAL SURFACE MOUNT SUBWOOFER

## PSUB10X2

## INSTALLATION MANUAL

*Please visit www.originpro.com or scan the QR code using your smart device for the most up to date safety information and use instructions for this product.*

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## IMPORTANT SAFETY INSTRUCTIONS

This product must only be installed by professional AV integrators and installers. If using this product as surface mount, suspended, or any elevated location, be sure to consult a qualified structural engineer for are any questions or concerns regarding the structural integrity to ensure this product is used safely. Always use an assistant or mechanical lifting equipment to securely lift and position the subwoofer. It is the installer's responsibility to ensure this product is installed in accordance with local building codes and regulations. Be sure to consult the local authority for any specific requirements, regulations, and building codes of the jurisdiction in which this suwoofer will be installed.

## IMPORTANT SAFETY INSTRUCTIONS

**1. Read these instructions.**
**2. Keep these instructions.**
**3. Heed all warnings.**
**4. Follow all instructions.**
**5. Do not use this apparatus near water.**
**6. Do not submerge the equipment in water or liquids.**
**7. Do not use any aerosol spray, cleaner, disinfectant or fumigant on, near or into the equipment.**
**8. Clean only with a dry cloth.**
**9. Do not block any ventilation opening. Install in accordance with the manufacturer's instructions.**
**10. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.**
**11. Do not unplug the unit by pulling on the cord, use the plug.**
**12. Only use attachments/accessories specified by the manufacturer.**
**13. Adhere to all applicable, local codes.**
**14. Consult a licensed, professional engineer when any doubt or questions arise regarding a physical equipment installation.**

# 1. Introduction

Thank you for purchasing the Origin PRO Professional PSUB10x2 Subwoofer. All of Origin PRO's speakers are designed to have excellent sound quality, longevity, a simple installation process, and built specifically for commercial applications.

This instruction booklet covers the necessary information for a smooth installation, including: the tools you will need, step-by-step instructions for installation, troubleshooting tips for any errors that may occur, and all warranty information. If for any reason you experience problems or if you have installation questions please call us at (844) 674-4461. Hours of operation are 8:00am to 5:00pm (Pacific Time), Monday through Friday.

## 2. Product Description

The PSUB10X2 Subwoofer boasts dual 10” low Profile, Dual Voice Coil, Flat Honeycomb, Glass Fiber woofers housed within a compact wooden bandpass enclosure constructed with a robust internal bracing.

The subwoofer offers multiple orientation and placement options for a tailored install. The port itself can be easily repositioned to either the longer side or shorter end of the cabinet, facilitating a wide array of install arrangements. Mounting options can be simply hidden under bench seating or ground furniture, or elevated. The PSUB10x2 arrives with an included 2-position bracket for surface mounting, as well integrated M10 fly points for optional suspension.

The internal 70V/100V high-output transformer offers up to 3 different tap settings and can be also be bypassed if low-impedance is required. The PSUB10x2 arrives as the ideal complement for the Origin PRO Professional Series speakers (In-ceiling, Pendant, and Surface Mounts), engineered to provide a harmonious, powerful low-end.

## 3. PSUB10x2 Specifications

**Part: PSUB10X200**
**System Type: Dual 10” Bandpass Surface Mount Subwoofer**
**Driver Components: 2 x 10” Low Profile, Dual Voice Coil,**
**Rigid Flat Honeycomb Glass Fiber Cone Woofers**
**Crossover: Recommended LPF = 120Hz, 24dB, Butterworth**
**Frequency Response: 30Hz-160Hz (-10dB), 38Hz-120Hz (+/-3dB)**
**Maximum SPL @1m (Free Space): 118 dB Pink Noise, 121 dB Continuous, 123 dB Peak**
**System Coverage: 360°**
**Sensitivity, 2.83v/1m: 94 dB**
**Power Handling: 300W Pink noise, 600W Program, 1200W Peak**
**Recommended amp power: 300W - 2000W @ 4 Ohms**
**Rated Impedance : 4 Ohms**
**Input Connectors: Gold Plated Binding Post Terminals**
**Enclosure: MDF**
**Mounting: Two Position Mounting Bracket, 4 x M10 suspension points**
**Transformer Taps 70V: 300W, 150W, 75W**
**Transformer Taps 100V: 300W, 150W**
**Dimensions (H x W x L): 8.98” x 13.78” x 33.86 19/32” (228 x 350 x 860mm)**
**Weight: 62 Lbs | 28.2 Kg (Unit with mounting bracket)**

***All product information is subject to change. Please refer to the dealer portal for the latest information.**

## 4. Required Tools

- Speaker Wire
- Pencil
- Wire Stripper
- Drill
- Drill Bit
- Stiff Wire
- Stud Finder
- Fish Tape
- 6 x M10 or 3/8” bolts (or high-quality, graded lag bolts or similar fasteners rated for: > 150 lbs (180kg) each of shear working load)

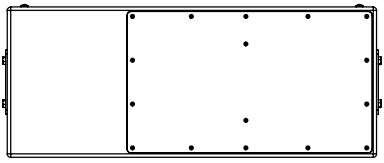
## 5. What's Included

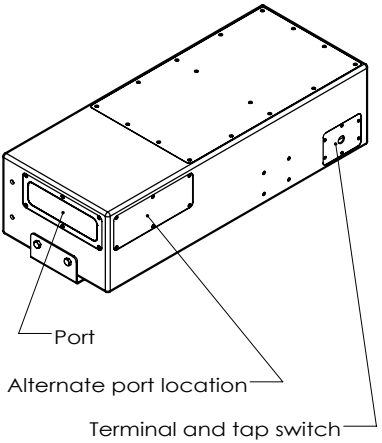
1. PSUB10x2 Subwoofer
2. Terminal Cover with 4 x Screws
3. 4 x Rubber Feet
4. Quickstart Guide

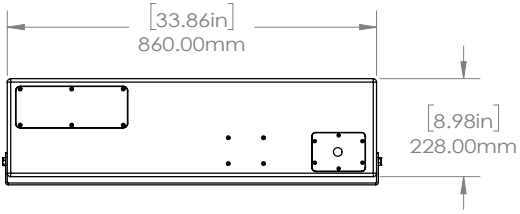
## 6. Mounting Components

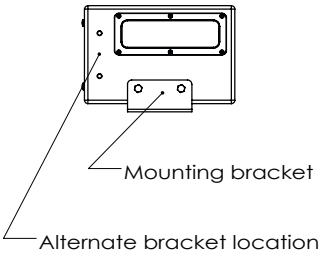
1.Subwoofer Bracket
2. 4 x M10 x 1.5mm Bolts
3. 4 x Washers

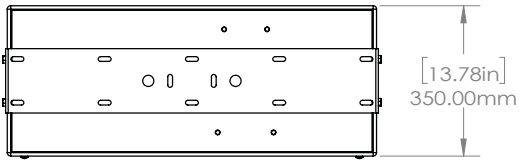
## 7. Subwoofer Features





## 8. System Wire Routing Considerations

Plan how you will route the wire to the desired speaker location. There are several methods for routing the wire, and you may need to combine several of them.

**Behind the Baseboard** The wire can be routed behind the baseboard by cutting a groove out of the back of the baseboard, or by buying special baseboard designed for concealing wires.

**Through Walls** When running wires through a wall, be sure to avoid all obstacles such as AC wiring, pipes, and ducts.

**Attic or Basement** When available, you can route the wire through an attic or crawlspace.

**Under the Carpet** One option is to lift up the carpet and route “tape wire” under the carpet.

**For New Construction** If these speakers are being installed in a new home during construction, the installation process will be a bit different (although much simpler). For these situations, it is recommended you purchase a bracket. Instructions on how to install the speakers are provided with the bracket, or can be found on our website.
Visit www.originpro.com for more information.

## 9. Subwoofer Placement Considerations

When planning the subwoofer placement, remember that positioning it near the speakers is sonically advantageous; and being close to walls, especially corners, is very helpful when maximum loudness is important.

The subwoofer offers multiple orientation and placement options for a tailored install. The port itself can be easily repositioned to either the longer side or shorter end of the cabinet, facilitating a wide array of install arrangements.

Mounting options can be:

**FLOOR MOUNTED:** simply hidden under bench seating or within cabinetry or ground furniture

**ELEVATED/ SURFACE MOUNTED**: using the surface mount bracket and/ or suspension.

**CEILING MOUNTED:.** For the subwoofer to fit between joists, they should be at least 9.5" apart.

**SUSPENDED:** The PSUB10x2 arrives with an included 2-position bracket for surface mounting, as well integrated M10 fly points for optional suspension.

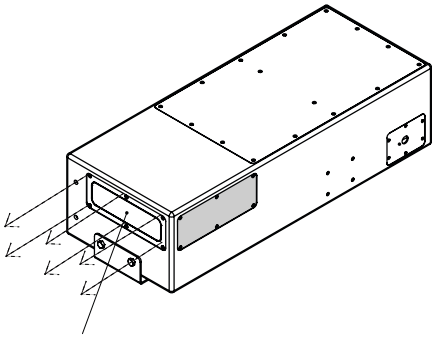
***Once you decide your ideal placement location, you may then start to decide where you want the port opening to be, on the enclosure.***

## 9a. Port Placement Considerations

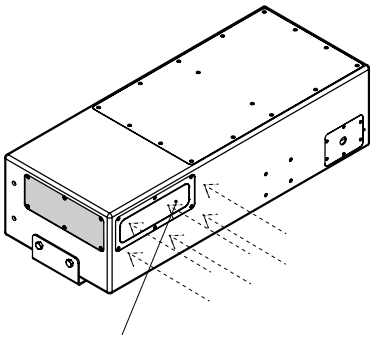
The port can be easily repositioned to either the long side or short side of the cabinet enclosure, to facilitate a wide range of installation contexts.

**IMPORTANT: If re-locating the port, do not remove or damage the pre-installed gaskets that seal the port and port cover.**

1. Carefully remove port screws, port grille, and the port cover screws.
2. Slide & pull out port, removing the port cover.
3. Swap to the desired location, and replace the port and port cover.
4. Secure port, port grille, and port cover with screws as previously installed.



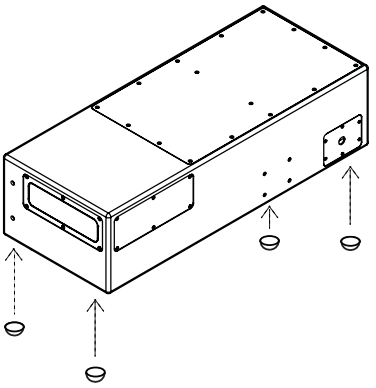
① Remove Port components from current port location



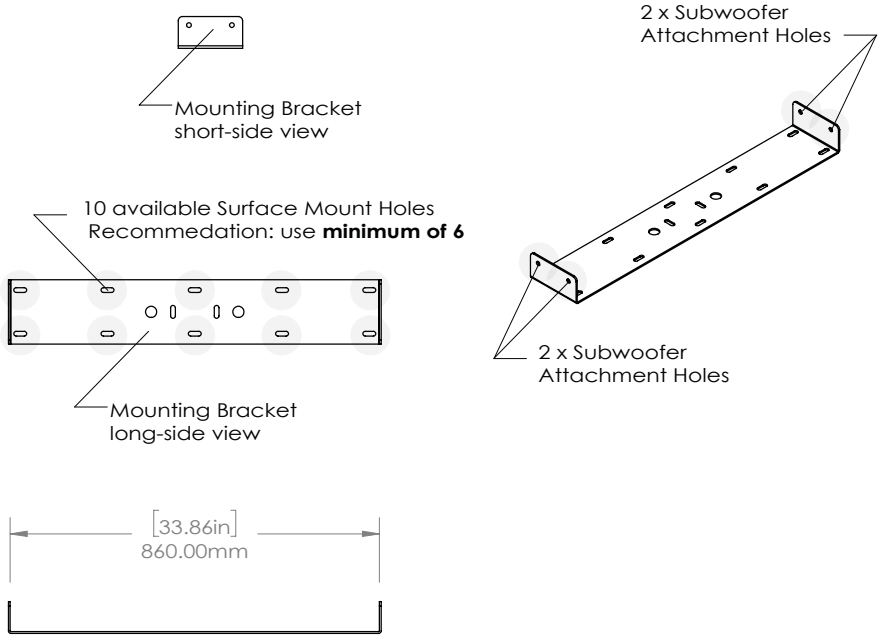
③ Replace Port components into alternate port location

## 9b. Floor Mounting Rubber Feet

In floor-mount applications, for example, under bench seating or within cabinetry, you may use the 4 included adhesive-backed rubber feet to prevent any sliding, marking or vibration transference.

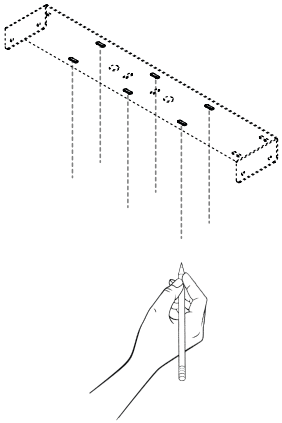


## 9c.Subwoofer Bracket Features

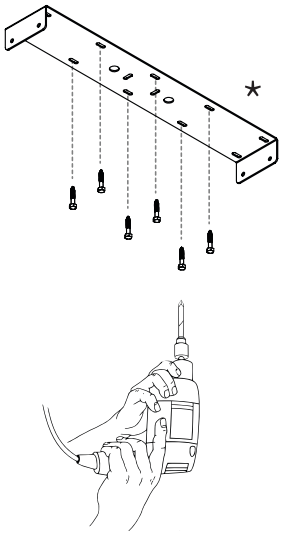


## 10. Surface Mounting Installation Steps

1. Using a pencil, mark at least four mounting points into the wall/ceiling surface as shown, (six locations recommended).



2. Using high-quality, graded lag bolts or similar fasteners rated for >150 lbs (180kg) each of shear working load, secure the bracket to the installation surface. M10 or 3/8" bolts are recommended, not included.



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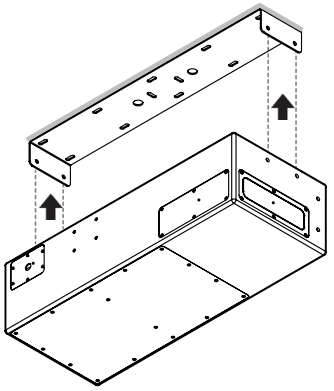
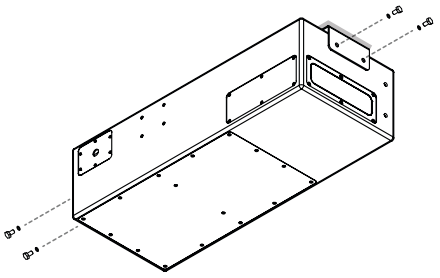
Place a damping material (for example, mass-loaded vinyl, neoprene foam, rubber sheets, etc. between the bracket and installation surface, in order to prevent vibration transference.

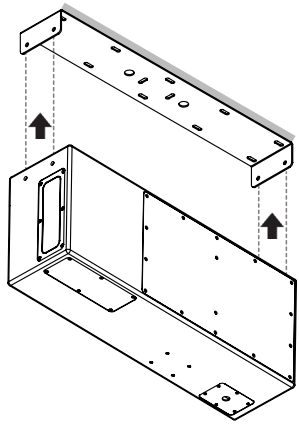
3. Lift the subwoofer into place and use the 4 included M10 x 1.5mm bolts and lock washers to install the subwoofer securely into the bracket. Ensure that all safety measures are observed, as mentioned previously, and employ the help of an assistant. The subwoofer can be installed in two orientations as shown below.

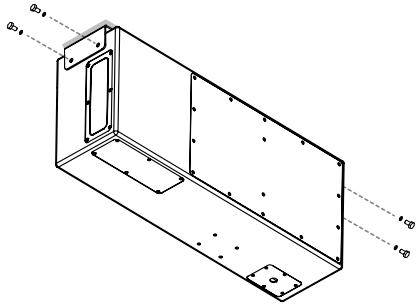
**Bracket Position A**





**Bracket Position B**



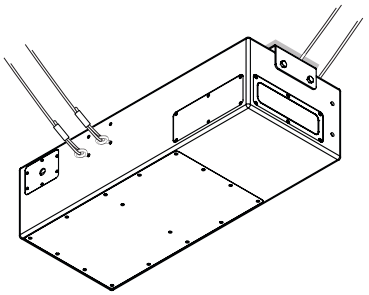


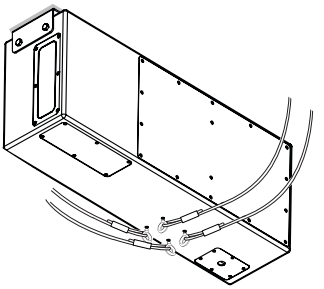
## 11. Final Suspension Safety Measures

It is highly recommended to use the built-in M10 fly points on both ends of the cabinet enclosure to suspend the subwoofer to the ceiling surface, as an added safety measure.

Eye bolts and rigging (not included) can be connected to support the load, and using the existing M10 x 1.5mm fly points on the enclosure.

In each scenario, check that local codes and regulations are being followed with a qualified structural engineer. Be sure to get approval from your engineer to ensure the correct installation plan, rigging hardware, and mount points are used, and can adequately support the load at each site.





**Note:** These fly points can also be used to suspend the subwoofer as the main mounting style.

## 12a. Speaker Wire Polarity: Notes & Guidance

You will need a wire that has at least two conductors; one that can be identified as the positive and the other as the negative. All two conductor wires have some means of identifying which conductor is which, but at times this identification may be subtle. It's crucial that you keep track of which wire you use for positive (+) and negative (-). Typically if the wires are colored red and black, the red wire is used for positive and the black wire is used for negative, but sometimes other colors or patterns are used. You can choose whichever color of wire you want to be positive and negative as long as you remain consistent throughout the install.

On both your amplifier and your subwoofer the connectors will be identified as red for positive and black for negative. It is very important to look carefully at the speaker wires and be certain that the same wire that is attached to the positive connector in the amplifier is attached to the positive connector in the subwoofer.

## 12b. Speaker Wire Gauge: Notes & Guidance

The gauge of wire used can have an impact on the performance of your speakers. Generally, speaker wire is determined by the length of the run and wattage utilized. The longer your run is, the smaller the wire gauge must be.

*On commercial 70 Volt systems, 18 gauge, 2 conductor, stranded and jacketed without shield wire is commonly used.*

| Wire Length | Wire Gauge | System |
|---|---|---|
| 0 -200' (0 - 60m) | 18 | 70V / 100V |
| 200-500' (60 -150m) | 16 | 70V / 100V |
| Over 500' (150m) | 14 | 70V / 100V |

*In residential systems, for relatively short runs (less than 50 feet) to 8 ohm speakers, 16 gauge wire will be usually suitable.*

| Wire Length | Wire Gauge | System |
|---|---|---|
| 0 - 50' (0 - 15m) | 16 | 8 Ohm |
| 50 - 100' (15 - 45m) | 14 | 8 Ohm |
| Over 100' (30m) | 12 | 8 Ohm |

## 12c. Wire Gauge – 4 Ohm System Notes

**If using the PSUB10x2 in a 4 Ohm system, the total wire resistance must be less than 10% of the speaker impedance**.

For example, since the speakers are nominally 4 ohms impedance, the total calculated wire resistance should be no more than 0.4 ohms.

Otherwise, the extra resistance from the wire will impede the sound quality of the speaker system.

For example, the result may be less dynamic, with a reduction in definition of bass frequencies , or attenuated high frequencies, if the wrong speaker wire is used. Remember that the amplifier power is also diminished in the wire, resulting in a lower maximum output level of the system. For this reason , please refer to the previous charts when deciding on the appropriate wire gauge for your context.

## 12d. Wire Gauge – 70V/100V System Notes

The most common wire used on commercial 70 volt systems is 18 gauge, 2 conductor, stranded, and jacketed without a shield. The wire starts at the amplifier location and is paralleled at each speaker location. Maximum recommended wire length using 18 gauge is up to 700 feet with a 100 watt load. If you double the load (sum of your tap settings), you will reduce the footage by half, to 350 feet. Conversely, if you halve the load, you may double the acceptable wire length, i.e., a 50 watt load is safe over 1400 feet of 18 gauge. Stepping up to 16 gauge wire extends the allowable run length by approximately 35%. For example, a 100 watt load can go 700 feet on 18 gauge; the same load may be placed on 1100 feet of 16 gauge.

## 13a. 70V/100V System Notes & Guidance

70/100-Volt systems are advantageous when the design calls for multiple speakers from the same amplifier and/or long-distance wire runs.

***NOTE: 70V is common in the U.S. while 100V is the common voltage internationally, especially in Europe.***

## 13b. 70V/100V Parallel Wiring Notes & Guidance

- Use 1 SEPARATE wire run for: **SUBWOOFERS**
- Use ANOTHER wire run for: **SPEAKERS**

- **THE SUBWOOFER WILL BE RUN IN PARALLEL.**

This means the positive connection on the amplifier will be connected to the positive connection on Subwoofer 1, 2, 3, etc. The negative connection will be connected to the negative connections on the Subwoofers as well. This can be accomplished with a single pair of wires in a “daisy chain” where the amplifier is at one end and the Subwoofers are connected consecutively.

• Alternatively, you can also wire in a star pattern where each speaker is directly wired back to the amplifier.

## 13c. 70V Amplifier Selection Notes & Guidance

A simple calculation is used to determine how many speakers can be driven on a single amplifier channel.

**First, for safety purposes, it is recommended to make the calculations based on 80% of the amplifiers rated power.**

• For example, 80% of an amplifiers rated power will mean that a 500W amplifier would safely deliver 400W of usable power (500W x 0.8 = 400W). Now, it is simply a matter of dividing 400 by the number of speakers and the tap setting being used in the system.

• For example, with speakers set at a 15W tap, the 500W amplifier would be capable of driving 26 speakers per channel (15W x 26 = 390W required power). At a 30W tap, it would run a maximum of 13 speakers (30W x 13 = 390W required power). At a 60W tap that would be 6 speakers (60W x 6 = 360W required power), and so on.

In this way, if you need coverage over a wide area and it requires numerous speakers, a 70V/100V system presents a tremendous advantage.

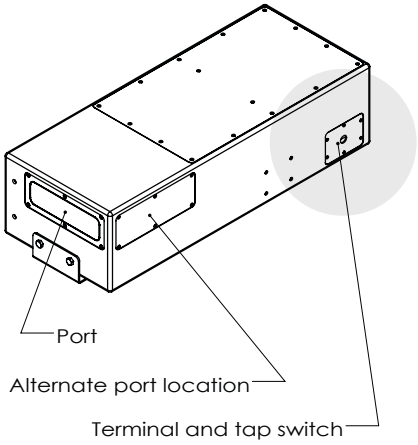
**The tap setting determines how much wattage each speaker will draw from the amplifier. When daisy-chaining multiple speakers: add the combined wattages of all tap settings, to determine the wattage draw on the amplifier.**

**THE COMBINED TOTAL WATTAGE SHOULD NEVER EXCEED THE WATTAGE RATING OF THE AMPLIFIER.**

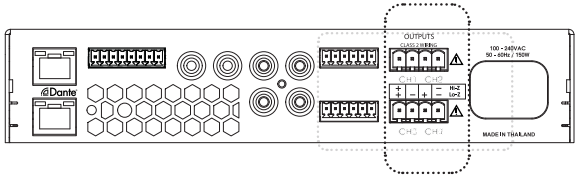
**Lastly, please noted that the higher the wattage tap, the higher the fidelity and the greater SPL that can be delivered from each speaker. So:**
***It is best to determine the total number of speakers needed and set the taps as high as possible WITHIN the amplifier's power output rating.***

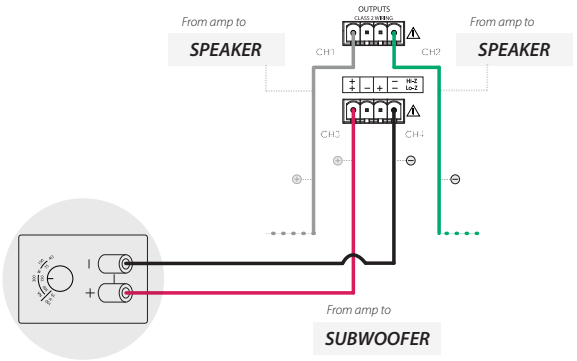
# 14. Subwoofer Wiring Steps

1. Run the wiring from the amplifier (and any other speakers running in parallel) through the punch out in the terminal cover, and into the Subwoofer Input Terminals.



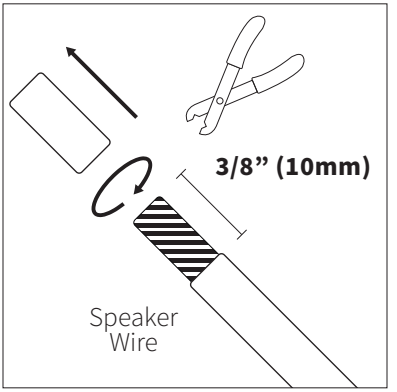

Be sure that the **POSITIVE WIRE** is being attached to the corresponding **RED TERMINAL** and the **NEGATIVE WIRE** is being attached to the corresponding **BLACK TERMINAL.**



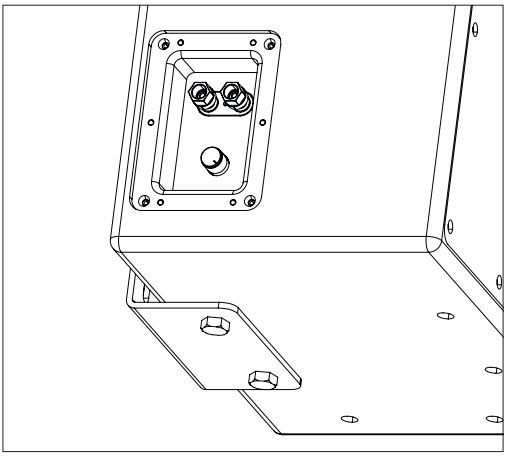



2. To connect the amplifier wires to the Terminal Input Connectors on the Subwoofer:

First, strip approximately 3/8” (10mm) of the insulation off each wire.




Then, locate the 5-way binding post and insert each wire into the opening with the correct polarity. **Remember that the POSITIVE WIRE is attached to the RED CONNECTION and the NEGATIVE WIRe is being attached to the BLACK CONNECTION.**



***If the wires are switched, speaker performance will be drastically impacted.***

3. When using multiple speakers, you can connect the speakers in the **PARALLEL** connection method.

4. Select the proper tap wattage setting for each speaker or subwoofer in the system and set each transformer tap selector. **( Refer to 70V Wiring Notes & Guidance Section)**

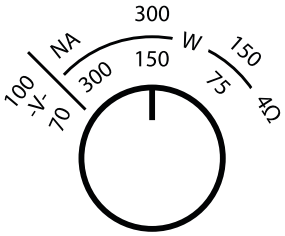
5. Lastly, replace and install the terminal cover with the included screws.

## 15. Tap Settings: Notes & Guidance

This Professional PSUB10x2 features 3 different tap settings off the transformer, adjusted by a rotary switch on the side face of the speaker. The higher the wattage selected, the more output will be generated by the speaker.

***The following table lists the power tap settings for the subwoofer:***

| Model | Position | 1 | 2 | 3 | 4 |
|---|---|---|---|---|---|
| PSUB10x2 | 100V | N/A | 300W | 150W | - |
| | 70V | 300W | 150W | 75W | - |
| | 4Ω | - | - | - | 4Ω |




**WARNING NOTE:** **THERE IS A 4Ω SETTING THAT BYPASSES THE TRANSFORMER ENTIRELY.**

**USE CAUTION TO AVOID THIS SETTING WHEN CONNECTED TO A 70V/100V AMPLIFIER AS THIS CAN DESTROY THE LOUDSPEAKER.**
**(THE 4 Ω POSITION CANNOT BE USED WITH A 70/100V CONNECTION AS IT WILL DAMAGE OR DESTROY THE SPEAKER.**

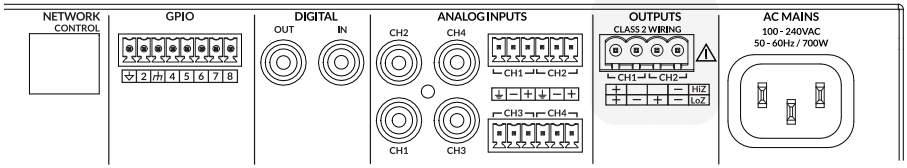
***Should you be uncomfortable designing or installing a 70/100V system, or if you have any questions please contact our Origin Technical Support team.***

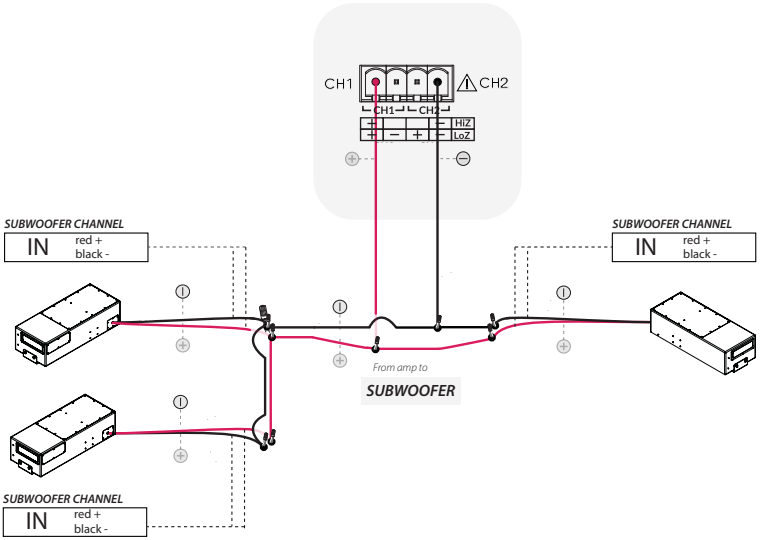
# 15a. 70V Hi-Z Example Wiring Diagram

3 X PSUB10X2 HI-Z Wiring with PROA1200.1 Amp

(PSUB10X2 is set to 300W / 70W Tap Setting)

(Amp set to HI-Z 70V Output Mode)




**Amp Output mode set to Hi-Z -70V [Bridge mode]**

• OUTPUT CH1/CH2 for Subwoofers

**PLEASE:**

**CONTACT OUR CUSTOMER SERVICE FOR ANY INQUIRY REGARDING SETUP.**

# 16. Troubleshooting

If you have a problem, try isolating it first. For example, if you're playing a DVD and there is no sound, try replacing the DVD with another audio source to see if you get sound. If it does work, then the problem is with the television, DVD player, or the cables connecting them. If it doesn't work, the problem will be with the amplifier, speakers, or those cables.

| Problem | Possible Cause |
|---|---|
| **No Sound** | The volume may be turned down or muted. Check the volume settings on both the amplifier and the television/computer/CD player/etc. |
| **No Sound** | Make sure the proper source is selected on the amplifier or receiver. |
| **No Sound** | Check the cord connecting the amplifier with the source. The cord may be damaged or plugged into the wrong input or output. |
| **No Sound** | Check the wires connecting the amplifier with the speakers. Make sure they're connected properly and not damaged in any way. |
| **Poor Sound Quality** | If you hear something like static, or the sound is cutting in and out, check the audio cables. If the problem increases when a cable is being moved, then the cable is most likely faulty or not connected properly. |
| **Poor Sound Quality** | Today's audio systems may have several places to adjust the volume, for example your MP3 player may have a volume control, and your amplifier may also have one. Check to be certain that the volume isn't turned up past 80% on any device. |
| **Poor Sound Quality** | Try changing sources to be certain that the selection you've chosen is a good quality recording. |

## 17. Technical Assistance

If you have any questions or concerns about installing or using this product, you can reach us through one of the following methods:

**Phone: (844) 674-4461**

**Hours of operation: 8:00am - 5:00pm (Pacific Time), Mon - Fri**

If you are having technical trouble, please have ready your model number and be prepared to briefly explain what steps you took to resolve the problem, to be best helped over the phone. If you are considering returning the product, it's required that you contact Origin PRO prior to any return attempts. This way we can determine if the issue can be resolved without returning the product, or if needed we can provide instructions and support for the return process.

## 18. Limited 5-Year Warranty

Origin PRO warrants to the original retail purchaser only that this Origin PRO product will be free from defects in materials and workmanship, provided the speaker was purchased from an Origin PRO authorized dealer. If the product is determined to be defective, it will be repaired or replaced at Origin PRO's discretion. If the product must be replaced yet it is no longer manufactured, it will be replaced with a model of equal to or greater value that is the most similar to the original. If this is the case, installing the replacement model may require mounting modifications; Origin PRO will not be responsible for any such related costs.

***Requirements & Warranty Coverage***

This warranty may not be valid if the product was purchased through an unauthorized dealer. This warranty only applies to the individual that made the original purchase, and it cannot be applied to other purchases. The purchaser must be prepared to provide proof of purchase (receipt). This warranty will not be valid if the identifying number or serial number has been removed, defaced, or altered.

***Not Covered by Warranty***

- Accidental damage
- Damage caused by abuse or misuse
- Damage caused by attempted repairs/modifications by anyone other than Origin PRO or an authorized dealer
- Damage caused by improper installation
- Normal wear, maintenance, and environmental issues
- Damage caused by voltage inputs in excess of the rated maximum of the unit
- Damage inflicted during the return shipment

**ALL WARRANTIES AND WARRANTY CONDITIONS ARE SUBJECT TO CHANGE PLEASE REFER TO WWW.ORIGINPRO.COM FOR THE LATEST INFORMATION.**

## 19. Return Process

Before making any return attempts, it is required that you first contact Origin PRO. Return product to Origin PRO or your dealer, either in person or by mail. It's preferable if the product is returned in the original packaging. If this is not possible, the customer is responsible for insuring the shipment for the full value of the product. This warranty is in lieu of all other expressed or implied warranties. Some states do not allow limitations on implied warranties, so this may not apply depending on the customer's location. (For more information, see Magnuson-Moss Warranty Act.)