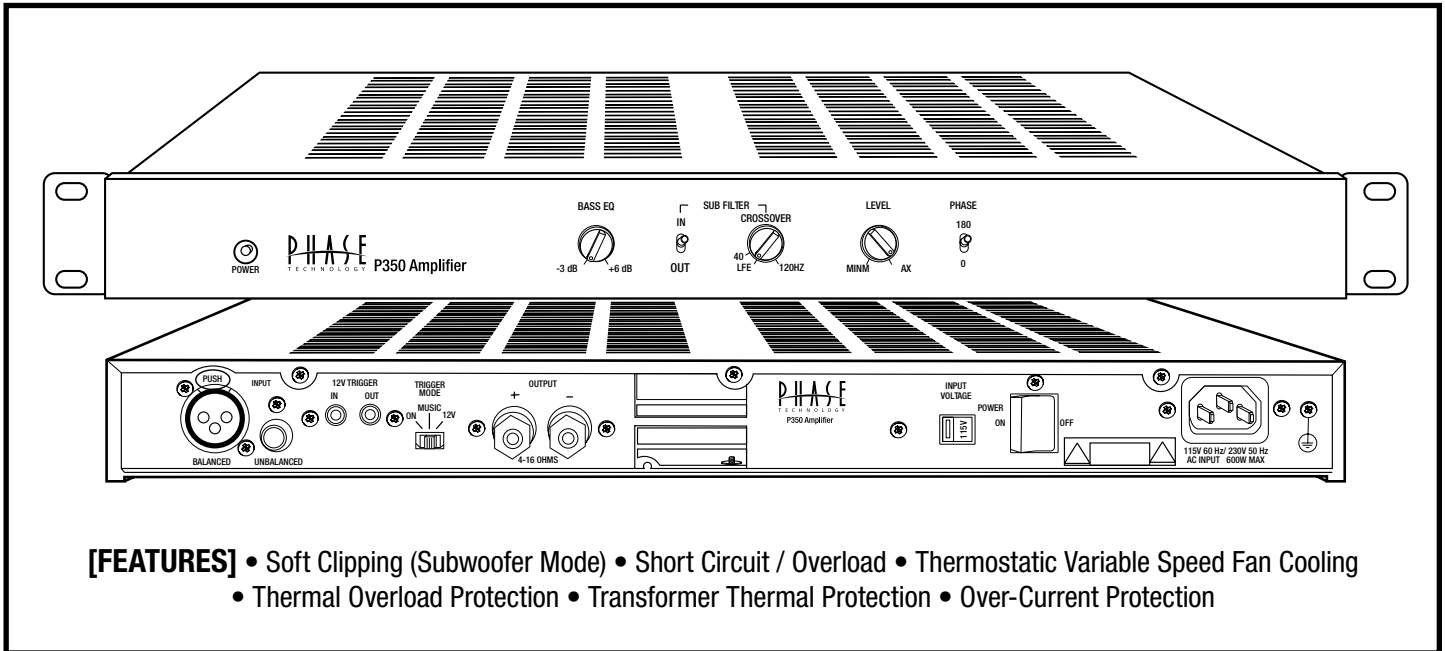


[P350] subwoofer amplifier



OWNER'S MANUAL & INSTALL GUIDE P350 CLASS-G HIGH CURRENT MONO BLACK AMPLIFIER



- [FEATURES]** • Soft Clipping (Subwoofer Mode) • Short Circuit / Overload • Thermostatic Variable Speed Fan Cooling
• Thermal Overload Protection • Transformer Thermal Protection • Over-Current Protection

Thank you for choosing Phase Technology® speakers. We know there are a wide variety of choices available today, and we sincerely appreciate your purchase of our product. Phase Technology speakers are built to exacting standards and will provide many years of listening enjoyment.

The P350 is the companion amplifier to Phase Technology custom in-wall subwoofer systems but its use is not limited to only subwoofer applications. It also has the flexibility of operation as a full range high current, high performance, mono-block audio power amplifier.

Our speakers are the result of over five decades of designing and manufacturing. We hold many key patents in loudspeaker technology including the soft-dome tweeter. Our mission, our passion is to constantly advance the art and science of accurate audio reproduction. Our dedication insures your new speakers will accurately reproduce all the impact, detail and delicacy of today's digital technology.

Regardless of application, serious audiophile listening or home theater, we recommend that you take the time to read this manual thoroughly before connecting speakers to your amplifier or receiver. In the highly unlikely event that you should experience

a problem with set-up or operation, please contact one of our authorized dealers for assistance, or contact us directly.

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SAFETY INSTRUCTIONS	2
GETTING STARTED AND PRECAUTIONARY NOTES	2
SUBWOOFER PLACEMENT	3
SPEAKER CONNECTIONS	3
OPERATING INSTRUCTIONS & CONTROLS	3
RACK MOUNTING	4
CARING FOR YOUR SPEAKERS	4
MAINTENANCE AND SERVICE	4
TROUBLESHOOTING	4
WARRANTY	4
SPECIFICATIONS	4

[SAFETY INSTRUCTIONS]



CAUTION

**RISK OF ELECTRIC SHOCK
DO NOT OPEN**



CAUTION: To reduce the risk of electric shock, do not remove cover (or back). No user-serviceable parts inside. Refer servicing to qualified service personnel.

Explanation of Graphical Symbols



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert you to the presence of un-insulated "dangerous voltage: within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert you to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

1. Read Instructions - All the safety and operating instructions should be read before the appliance is operated.

2. Retain Instructions - The safety and operating instructions should be retained for future reference.

3. Heed Warnings - All warnings on the appliance and in the operating instructions should be adhered to.

4. Follow Instructions - All operating and other instructions should be followed.

5. Water and Moisture - The appliance should not be used near water - for example, near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool, etc.

6. Carts and Stands - The appliance should be used only with a cart or stand that is recommended by the manufacturer.

PORTABLE CART WARNING



7. Wall or Ceiling Mounting - The appliance should be mounted to a wall or ceiling only as recommended by the manufacturer.

8. Ventilation - The appliance should be situated so that its location or position does not interfere with its proper ventilation. For example, the appliance should not be situated on a bed, sofa, rug, or similar surface that may block the ventilation openings; or placed in a built-in installation, such as a bookcase or cabinet that may impede the flow of air through the ventilation openings.

9. Heat - The appliance should be situated away from heat sources such as radiators, stoves, or other appliances that produce heat.

10. Power Source - The appliance should be connected to a power supply only of the type described in the operating instructions or as marked on the appliance.

11. Power Cord Protection - Power supply cords should be routed so that they are not likely to be walked on or pinched by items placed up or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the appliance.

12. Cleaning - The appliance should be cleaned only as recommended by the manufacturer.

13. Nonuse Periods - The power cord of the appliance should be unplugged from the outlet when left unused for a long period of time.

14. Object and Liquid Entry - Care should be taken so that neither objects fall nor liquids spill into the inside of the appliance.

15. Damage Requiring Service - The application should be serviced by qualified service personnel when:

- a. the power supply cord or the plug has been damaged,
- b. objects have fallen onto or liquid has been spilled into the appliance,
- c. the appliance has been exposed to rain,
- d. the appliance does not appear to operate normally or exhibits a marked change in performance, or
- e. the appliance has been dropped or the cabinet damaged.

16. Servicing - The user should not attempt to service the appliance beyond those means described in the operating instructions. All other servicing should be referred to qualified service personnel.

17. Grounding or Polarization - Precautions should be taken so that the grounding or polarization means of an appliance is not defeated.

APPLICABLE FOR USA, CANADA OR WHERE APPROVED FOR USAGE

CAUTION: TO PREVENT ELECTRIC SHOCK, MATCH WIDE BLADE PLUG TO WIDE SLOT, INSERT FULLY.

ATTENTION: POUR EVITER LES CHOCS ELECTRIQUES, INTRODUIRE LA LAME LA PLUS LARGE DE LA FICHE DANS LA BORNE CORRESPONDANTE DE LA PRESE ET POUSSER JUSQU'AU FOND.

[GETTING STARTED AND PRECAUTIONARY NOTES]

For proper connection and therefore full enjoyment of your new Phase Technology speakers, we encourage you to read this owners' manual thoroughly, even if you are very familiar with installing speakers and home entertainment equipment. Speaker placement is very subjective. Placement follows the guidelines for the developers of multi-channel home entertainment systems, yet is also guided by personal preferences. The proper spacing, location and adjustment of front, rear and center-channel speakers as well as subwoofers are critical for complete enjoyment of your new speakers. This manual covers these topics thoroughly.

Before connecting your new speakers or other system components, turn the system power off and unplug your amplifier to avoid any possibility of damage from power surges or unbalanced loads before the system is properly connected. Observe speaker polarity carefully! Every cable, speaker terminal and amplifier connection are clearly marked to show their positive (+) and negative (-) polarities. For ideal system performance, always connect the positive side of the cable (marked with a stripe, color and/or other indicator) to the positive terminals on your speakers and amplifier and the negative side of the cable to the negative terminals.

Amplifier selection is critical to your enjoyment of your new speakers. If you are considering upgrading your current component amplifier or multi-function receiver, we suggest purchasing as much power as your budget can afford. It will always be preferable to have an affordable high-powered model with fewer "bells and whistles" than a lower-powered model straining to operate near its power limits. High volume settings that produce audible distortion – indicating an under-powered amplifier – could eventually damage your speakers and your amplifier.

Begin and end listening sessions at low volume levels so you will not power up your system the next time with possibly harmful high voltages. A damaging surge also could result if you change the input source (from FM tuner to CD player, for example) at high volume levels. If you suspect that one channel of your amplifier has failed, have it repaired immediately by your dealer. Damage to your speakers could occur if you switch between the good and defective channels.

[SUBWOOFER PLACEMENT]

Subwoofer placement is less critical, because the frequencies they reproduce are omni directional. This means the human ear doesn't perceive these low frequencies as coming from a specific direction, enabling placement of a subwoofer virtually anywhere in the listening room.

It's best, however, to keep a subwoofer within the sound field of the other speakers. The closer the subwoofer is to a wall, the louder and more intense its bass output will be: this effect is even stronger when the sub is placed in or near a room's corner. If using two subwoofers, start by placing them next to the front left and right speakers, in both front corners or one in the corner and one 1/3 of the way along the front wall from the corner. Each room is different. Experiment with these options or try other locations until you get the best results. If you must choose a less-than-ideal position, the output level of Phase Technology powered subwoofers is adjustable to compensate for your listening environment.

[SPEAKER CONNECTIONS]

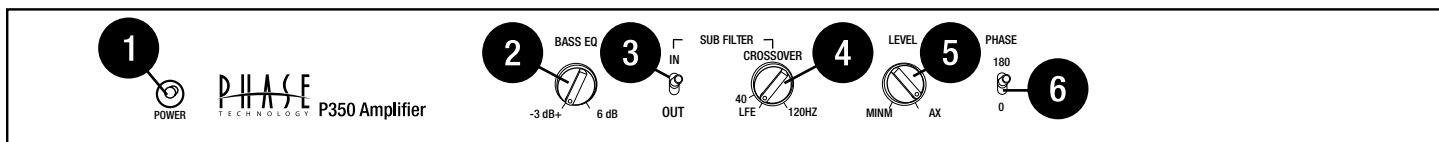
The following instructions apply whether you are using a separate amplifier or Home Theater receiver. For simplicity we will use the term "amplifier" throughout this manual to mean both.



SPECIAL NOTE: TURN OFF AND UNPLUG YOUR AMPLIFIER BEFORE CONNECTING SPEAKERS. SPECIAL NOTE: OBSERVE SPEAKER POLARITY CAREFULLY!

Every cable, speaker and amplifier is clearly marked to show their positive (+) and negative (-) terminals. Amps and speakers may use some combination of these symbols and/or colors to indicate positive (usually red) and negative (usually black or white) connections. One strand of your cable will also be ridged and/or marked with a colored line or other indicator on the positive side. For proper polarity and, thus, ideal system performance, always connect the positive side of the cable to the positive terminals on your speakers and amplifier and the negative side of the cable to the negative terminals.

[OPERATING INSTRUCTIONS AND CONTROLS] FRONT PANEL



1. POWER: The power LED on the front panel indicates the P350 status. A red indicator light means the main power is on and the P350 is in the standby mode. A green indicator LED means that the P350 is active and should be reproducing an audio signal. An orange or flashing red to orange LED means that the P350 has a problem or is overheated. Please check to be sure that your speaker is hooked up properly and is not shorted and there is adequate ventilation around the P350.

2. BASS EQ: The bass equalizer control allows the adjustment of bass equalization around 30Hz to compensate for subwoofer placement. The adjustment range is from -3 dB to +6 dB. This control is active in both the Subwoofer and LFE modes.

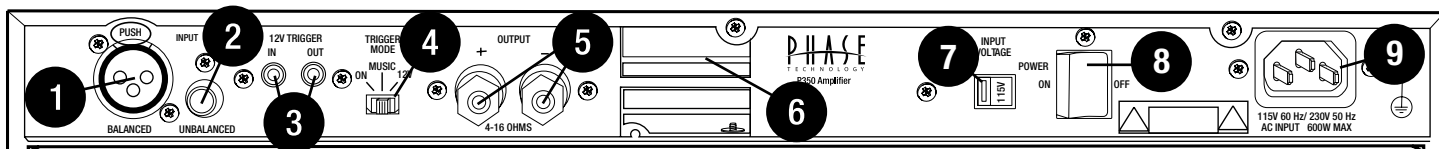
3. SUB FILTER, IN/OUT SWITCH: The mode selector switch selects the operating mode of the amplifier for either a full range audio mono-block amplifier (OUT) or mono subwoofer amplifier (IN). In the OUT full range position the BASS EQ, CROSSOVER, LFE, PHASE and Soft Limit circuits do not function.

4. CROSSOVER/LFE: The Low Pass crossover control is adjustable from 40-120 Hz. This control should be adjusted to obtain the smoothest transition in sound between the subwoofer and your main speaker system when other electronic crossovers are not being used such as a home theater receiver or processor. When using the P350 amplifier with a home theater receiver or processor set the switch to the LFE position. This will allow you to properly crossover the subwoofer with your other speakers using the receiver or processor. Please check the owner's manual of your receiver or processor for the proper setting.

5. LEVEL: This control is used for level matching of the subwoofer system to the main loudspeakers. We recommend that you start with this control in about the 9-10 o'clock position as an initial setting and then adjust as necessary to match your other speakers. Use the level controls on the main equipment for fine adjustment of the overall speaker levels.

6. PHASE: This switch is for adjusting the P350 amplifier output phase to match that of the main speakers. In the 0° setting the amplifier signal input and output are in phase. In the 180° setting the output signal of the amplifier is inverted or out of phase with the main speakers. Please experiment with this setting. The correct setting is that which yields the fullest bass and smoothest blend of the subwoofer with your main speakers. This control is active in both the Subwoofer and LFE switch setting positions.

[OPERATING INSTRUCTIONS AND CONTROLS] BACK PANEL



1. BALANCED INPUT: This connector is for a balanced audio line level input and accepts standard XLR type connectors.

2. UNBALANCED INPUT: This connector accepts a standard RCA audio interconnect cables.

3. 12 V TRIGGER: The IN connector accepts a standard mini style phone plug and is used to remotely turn the P350 from standby to on. Connect one end to the P350 in and the other to your receiver or processor trigger out. The OUT connector on the P350 acts as a remote trigger to turn additional equipment on and off.

4. TRIGGER MODE: The selector switch allows you to choose the standby mode of operation for the amplifier. The ON position means that the P350 is constantly on and will not revert to the standby mode. Use this mode if you are turning the power on and off from another source such as a switched outlet. The MUSIC position will wake up the amplifier when there is an audio signal present at the input connectors. The P350 will return to the standby mode in about 10 minutes after the input signal ceases. The 12V mode is for use in conjunction with remote 12 volt trigger features on your main receiver or processor.

5. OUTPUT: The speaker output connection terminals are 5-way binding posts. They accept banana plugs, pins or bare wires on your speaker cables. We recommend that you use at least 14-gauge speaker wire for these hookup connections. The black terminal is the speaker negative (-) connection and the red terminal is the speaker positive (+) connection. The speaker output of the P350 is compatible with standard 4-8 ohm speakers.

6. EXHAUST VENT: This is the exhaust opening for the internal cooling fan. It is very important that this opening and the ventilation holes on the top and bottom of the P350 are not blocked. Please allow adequate space around the amplifier for ventilation.

7. INPUT VOLTAGE: The A/C power line voltage selector is used for properly matching the line voltage of your wall outlet to the P350 amplifier. For the USA and Canada this switch is set to the 110-120V position. For other countries check with your retailer for the proper setting and line cord requirements.

8. POWER ON/OFF: This is the master ON/OFF power control switch for the P350 amplifier.

9. 3-PIN POWER CONNECTOR: The power line cord socket is for the connection of the main power cord from your wall outlet to the amplifier. In the USA and Canada the amplifier is supplied with a standard IEC polarized power cord. For other countries you should check with your retailer for the proper line cord requirements.

[RACK MOUNTING]

The P350 is supplied with rack mounting adapters for the convenience of installing the amplifier in standard 19" equipment racks. The P350 occupies one (1) standard rack unit position. The supplied adapters are easily attached to the left and right side of the P350 chassis with the supplied screws. Depending on the application it may be necessary to remove the rubber isolation feet.

[CARING FOR YOUR PHASE TECHNOLOGY SPEAKER]

All Phase Technology speakers are finished with a high degree of craftsmanship in either hand polished paint or vinyl laminates. We recommend using a lint-free rag with a small amount of glass cleaner to maintain the long-lasting beauty of the finish. Avoid products containing silicones, oils, oil derivatives, or solvents. Enclosures finished in vinyl laminates may be cleaned with a damp cloth as necessary.

[MAINTENANCE AND SERVICE]

Because of Phase Technology's uncompromising quality control programs, it's unlikely that your speakers will ever need service if connected and used as outlined in this Owners' Manual. In the unlikely event that a problem does occur, please contact your Phase Technology dealer. Your dealer has the necessary factory-authorized parts and trained technicians to quickly restore your speaker to its original performance specifications.

[TROUBLESHOOTING]

NO SOUND

1. Verify that all components are plugged in and turned on.
2. Check all speaker wires and cables for loose connections.
3. Check to see if you have selected the proper source on your amplifier.

VOICES DO NOT APPEAR TO COME FROM BETWEEN THE SPEAKERS / BASS RESPONSE IS WEAK

1. Verify that all speaker connections from the amplifier to the speakers are running PLUS+ to PLUS+ and MINUS- to MINUS-.
2. Check to see if there are any furnishings or plants that may be blocking the output of a speaker.

SOUND, BUT NO BASS (MOST LIKELY IN SYSTEMS WITH A SUBWOOFER)

1. Verify that the subwoofer is plugged into an AC outlet and power is turned on.
2. Check that the speaker wire / cable going from the amplifier/receiver to the subwoofer is securely fastened.
3. Check the volume control of the subwoofer.
4. Refer to your amplifier/receiver manual to make sure you have adjusted its bass output properly.

MUDDY OR BOOMY BASS

1. Check the volume control for the subwoofer. Excess volume can cause speakers to sound distorted and unnatural.
2. Try adjusting the crossover control on the subwoofer or the subwoofer setup on your receiver to a slightly lower frequency (example: reduce from 120 Hz to 80 or 60 Hz).
3. If the subwoofer or full size speaker is close to a corner, side or back wall, try moving it away from the wall. This may reduce the "boomy" bass considerably.
4. Bookshelf speakers placed in a semi-enclosed space or cabinet can artificially emphasize bass output. Reduce the bass control on your amplifier or move the speakers to the front of the cabinet. Alternatively, reposition the speakers to a more open location.

DISTORTED SOUND FROM THE SPEAKERS

1. This problem is usually caused by setting the volume control too high. Reduce the amplifier/receiver volume to a lower level.
2. If noise and distortion are audible at higher volume levels, your amplifier may not be powerful enough. Consider upgrading to a unit with higher power.

NOTE: Remember, even though your Phase Technology speakers can handle considerable power levels, ANY speaker if used improperly can be damaged. Consult your Phase Technology dealer for assistance in choosing a new amplifier or receiver.

[WARRANTY]

LIMITED WARRANTY: Phase Technology warrants its loudspeakers to be free from defects in material and workmanship for a period of ten (10) years for speaker product, limited lifetime for CI speakers, and three (3) years for the electronic components to the original purchaser. Purchase must be made from an authorized Phase Technology dealer.

This warranty does not cover service or parts to repair damage caused by misuse, abuse, damage while in transit, alterations, unauthorized repairs, failure to follow instructions, fire, flood or any other cause beyond the reasonable control of Phase Technology. Defects in speaker cabinets or grilles must be brought to the attention of your dealer immediately after purchase. This warranty will be void if the products' serial number has been altered or removed.

Should your Phase Technology product require service, please call the MSE Audio customer service department for a return authorization. All merchandise returned to Phase Technology without prior authorization will be refused. For your return authorization number, please call 855.663.5600 or email sales@mseaudio.com.

[SPECIFICATIONS]	P350 CLASS-G HIGH CURRENT MONO BLOCK AMPLIFIER
MODES	Sub, LFE, Wide-Range
AMPLIFIER POWER	350 Watts RMS >.5% THD @ 4 Ohms, 700 Watts peak 225 Watts RMS >.5% THD @ 8 Ohms, 400 Watts peak
CROSSOVER FREQUENCY	Low Pass 40 - 120 Hz; 24 dB/octave
LFE FREQ RESPONSE	20 - 500 Hz
FULL-RANGE RESPONSE	10 Hz - 20 kHz +0/- .25 dB; 5 - 60 kHz +0/-3 dB
LOW FREQUENCY EQ	-3 dB to +6 dB @ 30 Hz
INPUTS	Gold-Plated Balanced RCA; Balance XLR
INPUT SENSITIVITY	175 mV For Full Output Unbalanced/ 220 mV Balanced
DAMPING FACTOR	<200
INPUT IMPEDANCE	22K Unbalanced, 37.5K Balanced
CURRENT CONSUMPTION 120V	3 Amps @ 8Ω; 5.5 Amps @ 4Ω Continuous
DIMENSIONS (OVERALL)	2" H x 17.25" W x 13.25" D
WEIGHT	17 lbs.