

**DP4000**

Thank you for purchasing Phase Technology's revolutionary dARTS (Digital Audio Reference Theater System). This exciting entertainment system will provide the best possible sound reproduction of music and video programming in any room environment, and at every seat in that room.

Please take a few moments to study this Installation Guide to get the most out of your dARTS system. Your professional installer will make every effort to place the speakers to take into account your room's natural acoustics, but will also accommodate your needs in making them fit into your decorating plans. Phase Technology's perfectly matched speakers, and the Audyssey Laboratories MultEQ XT 32 room correction software as implemented by your installer, will then work together to overcome the acoustic anomalies of your room and give you ideal sound at every seating location.

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**DP4000 Features:**

- Audyssey MultEQ XT32 calibration software
- Molded aluminum enclosure
- Large dual mode power supply
- Eight (8) XLR balanced Inputs
- Sixteen (16) configurable input/output channels
- Controls up to four (4) rooms of stereo
- Auto switch



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## SAFETY INSTRUCTIONS

	<b>CAUTION</b>	
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.

## Audyssey MultEQ XT32 Software Installation

Referring to Audyssey's calibration guide, your installer will use a professional calibration microphone and a digital audio interface with his laptop computer to analyze your room's acoustic properties as they affect the entire seating area. This will give him the information to properly set up the volume levels and delays for each speaker, and then it will automatically generate a series of correction filters to load into your Phase Technology DP4000 amplifier/speaker controller. This correction process will then return your speakers to their original perfectly matched levels, and remove the room's harmful acoustic contributions, leaving you with superb sonic performance that sounds the same at every seat in the room.

### Speaker Placement

Phase Technology's ability to precisely match each speaker to one another yields a much more enveloping and accurate soundfield. This immersive entertainment experience will be enhanced if you will follow a few basic rules of speaker placement. The front speakers (left, center, right) should all be placed in as close to a horizontal line as possible, and should be at or slightly above ear level while seated. The left and right speakers should be far enough apart (6- 8 feet if seated no more than 12 feet from your video display) to separate the information from each channel, but not so far as to create a discontinuity with the image on the video display. With a large projection screen, they should be placed as close to the sides of the screen as is practical. In addition to being in line with the front channels, the center speaker should be as close to the center of the display as possible, whether above/below the display, or behind a perforated projection screen. Phase Technology speakers are magnetically shielded so they will not interfere with any type of television set. Please place the included rubber feet on the bottom corners of each speaker to keep it from vibrating against the shelf or stand on which it sits.

Each of the dARTS speakers (except for subwoofers) includes Phase Technology's acclaimed variable-axis soft dome tweeters. This allows your installer to direct high frequencies toward your listening location for even greater latitude in speaker placement, and more precise imaging and localization of sound. Please adjust these tweeters by carefully pressing on the outer rim of the housing only, avoiding contact with the actual soft dome speaker element. These adjustments, if needed, should be done prior to your installer calibrating the system to your room, so the correction process will read the tweeters' energy accurately at each listening position.

The surround speakers should be placed well above ear level in most rooms. Whether you are using direct-radiating speakers or our switchable dipolar/bipolar speakers for the surround channels, please pay attention to placing them to create a large and enveloping soundfield. In a 5.1-channel configuration, you will use one pair of surround speakers. If your listening area is near the back wall, the best results can often be obtained by placing the surround speakers on the side walls, centered on your listening positions. With speakers directly to the sides, switching the surround speakers into "Dipole" mode (with their front-panel toggle switch) will a very diffuse, non-directional soundfield. If you prefer to have more localization of the surround effects, select the "Bipole" mode or use direct-radiating speakers to match the front channels. If your seating is away from the back wall, you can choose to mount your surround channels either beside or behind the listening position. Experiment with both "Dipole" and "Bipole" surround settings with your installer to see which sounds best to you, so he can calibrate the room to your taste.

In a 6.1-channel setup, a pair of surround speakers will be placed to the sides of your listening area, with an additional rear center channel speaker behind you. If you choose to implement 7.1-channel surround you will use a pair of surrounds to the sides, and another pair behind you, spaced evenly to fill the room. Again, please experiment with your installer to determine which modes sound best for each pair before he calibrates your room to determine the correction curves for each channel. If you change your mind later, you will need to have the room recalibrated to accommodate the new speaker settings. Also, if you change your room's furnishings in any significant way (floor coverings, drapes, furniture) please have your installer recalibrate the room to return your system to its original target response curves.

Your dARTS powered subwoofer(s) are specifically designed to blend well with the dARTS main speakers, and to perform well with either music or movies, augmenting the deep bass which is such an integral part of our emotional involvement with our entertainment choices. Although very deep bass is essentially non-directional, the higher bass frequencies and the initial attacks of each note are often shared by the main speakers. Thus, subwoofers usually blend best when they are relatively close to the front channels. The dARTS Custom Built-In line offers subs which are the same width as the main speakers, so they can be readily used as speaker stands, ensuring proper integration and impact. If you do use the system in this way, please have your installer mount the included connecting brackets to lock the subs and main speakers together, with their fronts vertically aligned. The brackets allow for vertical adjustment of the main speakers to accommodate the use of isolation feet. The Audyssey Laboratories MultEQ XT 32 room calibration software WILL account for sub placement (as it does for all speakers) while measuring your room and designing the correction curves, but the closer you can come to ideal placement, the better will be the results.

### System Wiring and Connection

Phase Technology's dARTS systems are unique in that all speakers are either bi-amplified or tri-amplified. This means that each tweeter, midrange, and woofer set is connected to their own individual amplifier channel to allow for greater dynamic performance and flexibility in configuration. To take advantage of these connections, front main and surround channels need to be wired with four-conductor speaker wire. The horizontal center channel is tri-amplified, so it needs to have six conductors available. Phase Technology recommends using 14 AWG speaker wire (no smaller than 16 gauge) for each of these connections. Wire with higher gauge numbers is thinner, and is not recommended.

The dARTS subwoofer includes its own 500-watt on-board power amplifier. It will need to have a shielded audio interconnect run to its "LINE INPUT L" jack from the DP4000 amplifier/controller's "SUB OUT 8" jack. The subwoofer's amplifier features both line-level inputs and outputs. To add additional subwoofers to increase the bass performance in a large room, have your installer run an additional shielded audio interconnect from the first sub's "LINE OUTPUT L" jack to the second sub's input "LINE INPUT L" jack, continuing on to as many subs as desired. The sub amp's volume control should be set at the "12:00" position for the calibration process, but can then be raised or lowered a bit to match your own desired bass levels in the room.

The heart of the dARTS system is the DP4000 digital amplifier/controller. It consists of a 16-channel power amplifier (up to 250 w/ch), the setup firmware used by Phase Technology to individually match your speakers to each other (frequency response, crossover, time alignment), and space for the room correction program your installer will run to calibrate the system to your room. Each of your speakers will connect to the DP4000 with either two or three pairs of speaker wire. Your surround processor or receiver's preamp outputs will also be connected to the DP4000. If desired, your installer can connect

a 12 V DC trigger to the amplifier's "POWER CONTROL IN" jack from your surround processor or your automated control system to turn the amplifier on and off. There is also a "POWER CONTROL OUT" jack available to pass on the control voltage to another component in your theater system. The following tables show how each channel's wiring is connected to the amplifier/controller's input and output terminals:

#### Connections From DP4000 to Surround Preamp/Receiver

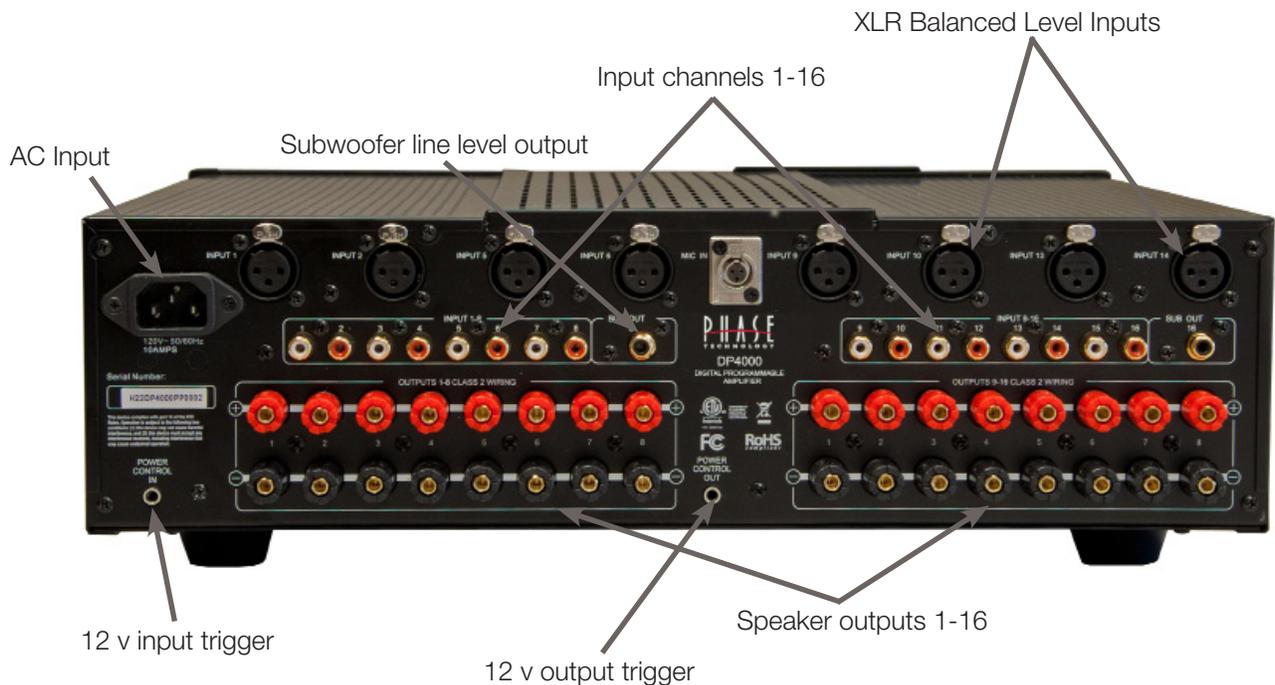
DP Input Number	XLR Balanced Input Number	Preamp Output Channels
1	1	Left Front
2	2	Right Front
5	3	Center Channel
6	4	Subwoofer
9	5	Left Surround
10	6	Right Surround
13	7	Left Rear Surround in 7.1 System; Rear Center in 6.1 System
14	8	Right Rear Surround in 7.1 System

#### Connections From DP4000 to System's Speakers

DP4000 Output Numbers (Channels 1-8)	Speaker Connections
1	Input 1: Left Front Woofer; XLR Input 1: Left Front Speaker
2	Input 2: Left Front Tweeter; XLR Input 1: Left Front Speaker
3	Input 3: Right Front Woofer; XLR Input 2: Right Front Speaker
4	Input 4: Right Front Tweeter XLR Input 2: Right Front Speaker
5	Input 5: Center Channel Woofer; XLR Input 5: Center Channel Speaker Note: Not connected if using a 2-way center channel speaker
6	Input 6: Center Channel Woofer/Midrange; XLR Input 5: Center Channel Speaker
7	Input 7: Center Channel Tweeter; XLR Input 5: Center Channel Speaker
8 (RCA "Sub Out 8" Jack)	Input 8: To Subwoofer; XLR Input 6: Subwoofer

DP4000 Output Numbers (Channels 9-16)	Speaker Connections
9	Input 9: Left Surround Woofer; XLR Input 9: Left Surround Speaker
10	Input 10: Left Surround Tweeter; XLR Input 9: Left Surround Speaker
11	Input 11: Right Surround Woofer; XLR Input 10: Right Surround Speaker
12	Input 12: Right Surround Tweeter XLR Input 10: Right Surround Speaker
13	Input 13: Left Rear Woofer in 7.1 System (or Rear Center Woofer in 6.1 System); XLR Input 13: Left Rear Speaker
14	Input 14: Left Rear Tweeter; (or Rear Center Woofer in 6.1 System); XLR Input 13: Left Rear Speaker
15	Input 15: Right Rear Woofer; XLR Input 14: Right Rear Speaker
16	Input 16: To Right Rear Tweeter; XLR Input 14: Right Rear Speaker

PLEASE NOTE: Although these connecting connections directions are not “normal,” based on conventional surround systems, they ARE correct for the dARTS system, and must be followed exactly for the system to operate properly and safely. Please do not plug the amplifier into AC power or turn it on until ALL system connections have been securely made.



## Caring for Your DP4000

The DP4000 is molded in an aluminum enclosure and finished with a high degree of craftsmanship. 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. Aluminum enclosures 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 DP4000 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.

## 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 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.

To obtain warranty service, the defective product must be shipped in its original carton or equivalent together with original invoice or bill of sale, insured and prepaid to your authorized Phase Technology dealer or the factory when warranty service is requested.

If you choose to return the defective product to the factory you must first call us at (888) phase-tk to obtain a Return Authorization number prior to shipping. Product repaired under this warranty will be returned to you freight collect.

