

ANC22
Ambient Noise
Compensator
Operation Manual

advantage ®

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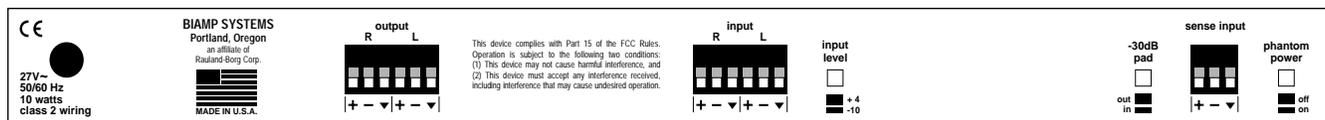
INTRODUCTION

The ADVANTAGE® **ANC22** Ambient Noise Compensator is a stereo controller, which automatically adjusts system gain to compensate for changes in background noise levels. An internal microprocessor senses ambient noise via a microphone input, compares it to the program signal, and adjusts the program level accordingly. The ANC22 is ideal for any system troubled by fluctuating noise levels, such as restaurants, factories, and airports. Setup is simple and straightforward, and the ANC22 is covered by an ADVANTAGE® Five Year 'Gold Seal' Warranty.

ANC22 features include:

- ◆ balanced stereo program input & output on plug-in barrier
- ◆ works with balanced or unbalanced, stereo or mono signals
- ◆ stereo program input selectable for +4dBu or -10dBu levels
- ◆ balanced/unbalanced noise-sensing input on plug-in barrier
- ◆ noise-sensing input includes +24V phantom power switch
- ◆ noise-sensing input with 30dB pad accepts mic or line level
- ◆ noise-sensing via single mic or multiple mics (external mixer)
- ◆ adjustable minimum & maximum program level settings
- ◆ adjustable sample time & program-to-noise gain ratio
- ◆ automated setup including options to prevent tampering
- ◆ bypass switch defeats gain adjustments (sets to minimum)
- ◆ incorporates **AES** recommended grounding practices
- ◆ **CE** marked and **UL / C-UL** listed power source
- ◆ covered by Five-Year "Gold Seal" Warranty

REAR PANEL / CONNECTIONS



Output: These plug-in barrier strip terminals are for connection to the input of a sound system equalizer/amplifier. The Output provides a balanced stereo line-level program signal, with automatic level adjustment to compensate for changes in ambient noise. The ANC22 works equally well with a mono program signal connected to either the left or right Input/Output. For connection to unbalanced equalizer/amplifier inputs, wire high to (+) and ground to (⊘), leaving (-) unconnected. The Output has an additional 6dB of gain when used in a balanced fashion.

Input: These plug-in barrier strip terminals are for connection to the output of a program signal source. The Input accepts a balanced stereo line-level program signal. The ANC22 works equally well with a mono program signal connected to either the left or right Input/Output. For connection to unbalanced program signal sources, wire high to (+) and ground to both (-) & (⊘). The Input will accept either +4dBu or -10dBu nominal level signals (see Input Level Switch below).

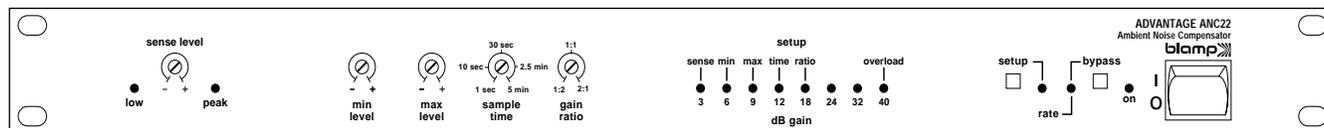
Input Level Switch: This push-button switch determines the proper gain at the Input, allowing the ANC22 to accommodate various program source signals. When depressed, the Input Level Switch selects -10dBu as the appropriate Input signal level (+10dB gain). This is good for program sources (such as CD, tape, etc.) which are typically unbalanced line-level signals. When released, the Input Level Switch selects +4dBu as the appropriate Input signal level (-4dB gain). This is good for program sources (such as mixers, equalizers, etc.) which are typically balanced line-level signals.

Sense Input: These plug-in barrier strip terminals are for connection of an external microphone, which is used to pick up room ambient (background) noise. An internal microprocessor then samples the noise, calculates an 'average' noise level, and adjusts the program signal level accordingly. The microphone should be of the balanced, low-impedance type. Condenser microphones are recommended (see Phantom Power Switch below), although dynamic microphones are acceptable. For applications where ambient noise is evenly distributed throughout the room, sensing microphones with 'omnidirectional' or 'hemispherical' pick-up patterns are preferred. For applications where ambient noise is more localized, 'unidirectional' pick-up patterns may be more appropriate. If multiple microphones are desired (to cover a larger area) an external microphone mixer may be used (see Pad Switch below). Microphones should be placed within a room so as to pick up both ambient noise and a moderate amount of program signal from the sound system.

-30dB Pad Switch: When depressed, this push-button switch provides 30dB of attenuation, to compensate for different signal levels at the Sense Input. Depress the Pad Switch when Sense Input signal levels exceed the normal operating range of the front panel Sense Level control, or when line-level input from a microphone mixer is desired.

Phantom Power Switch: When depressed, this push-button switch provides +24 Volts DC phantom power to the Sense Input, for powering a condenser type microphone. *CAUTION: The Phantom Power Switch must be released (phantom power off) when the Sense Input is to be connected to a line-level source, such as a microphone mixer. Always turn levels down before switching phantom power.*

FRONT PANEL / SETUP



Power Switch & On Indicator: This switch turns power on, and is also used to enter setup (see Setup Button & Indicator below).

Setup Button & Indicator: This momentary push-button & adjacent indicator are used to enter setup mode. Setup mode is a simple, automated procedure for setting the controls described below. When setup is completed, the control settings are stored in non-volatile memory. To enter setup mode: While the Power Switch is turned off, press and hold the Setup Button. While holding the Setup Button, turn the Power Switch on. Continue holding the Setup Button until the Setup Indicator lights. When the Setup Button is released, the Min Indicator will also light (see Setup / dB Gain Display below). *NOTE: Setup requires program & sense signals be present. Once setup is completed, the Setup button may be disabled (see Options on pg. 6).*

Setup / dB Gain Display: This row of eight indicators serves three purposes. During setup mode, individual indicators will light to show the proper sequence of control adjustments. During normal operation, the display provides gain metering. During Bypass, the Min Level control setting is displayed (see below). *NOTE: If the Overload indicator flashes during normal operation, reduce input signal levels and repeat the setup procedure.*

Min Level: This screwdriver adjustable control determines the minimum output gain of the ANC22 (for periods of low ambient noise). Adjust Min Level during setup mode, only while the Min Indicator is lit. Set the Min Level control for the program volume which will be appropriate when background noise is the 'quietest'. Min Level has a range of -20dB to +18dB. Once Min Level has been set, press the Setup Button and the Sense Indicator will light (see Sense Level & Indicators below).

Sense Level & Indicators: This screwdriver adjustable control determines the appropriate sense input level. Initially, this control should be increased only until the Low Indicator goes off. Once Sense Level has been set, press the Setup Button and the Max Indicator will light (see Max Level below). *NOTE: Max Level settings may cause the Peak Indicator to light. If so, decrease Sense Level until the Peak Indicator goes off, then repeat the setup procedure to store the new settings in non-volatile memory. Once setup is completed, do not disturb the Sense Level control.*

Max Level: This screwdriver adjustable control determines the maximum output gain of the ANC22 (for periods of high ambient noise). Adjust Max Level during Setup Mode, while the Max Indicator is lit. Set the Max Level control for the program volume which will be appropriate when background noise is the 'loudest'. Max Level has a range from the Min Level setting to +18dB. Once Max Level has been set, press the Setup Button and the Time Indicator will light (see Sample Time below). *NOTE: If Max Level*

settings cause the Peak Indicator to light, decrease Sense Level until the Peak Indicator goes off, then repeat the setup procedure to store the new settings in non-volatile memory

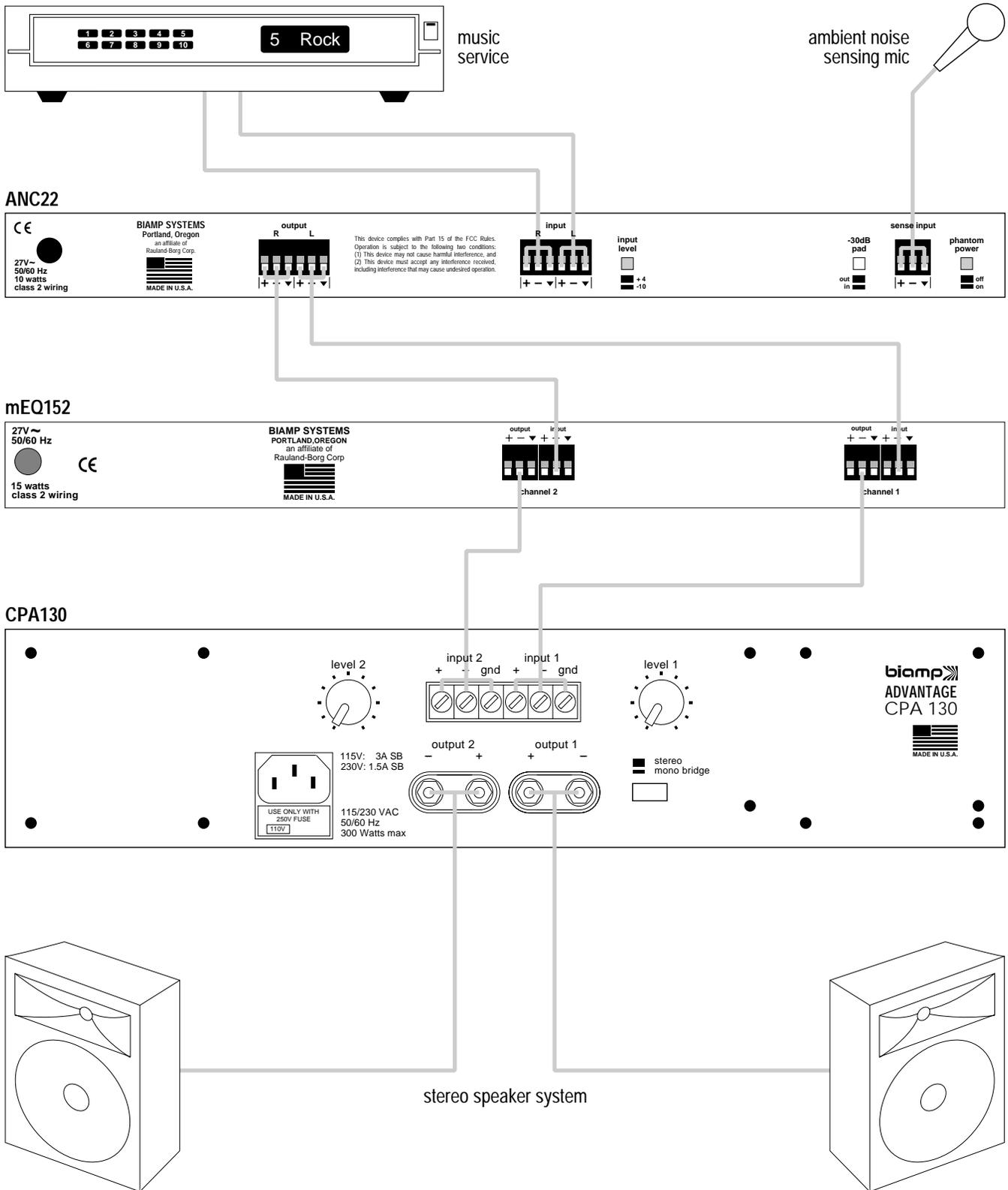
Sample Time: This screwdriver adjustable control determines the length of time the ANC22 uses to sample noise levels at the Sense Input. Sample Time affects how accurately the ANC22 will calculate an 'average' noise level, as well as how quickly it will respond with a program volume adjustment. Lower settings allow less sampling time, but offer a quicker response time. This is good for applications (such as subway terminals) where the ambient noise level may change drastically within a short period of time. Higher settings provide a longer sampling time, and a longer response time. This is good for applications (such as restaurants) where the ambient noise level changes gradually. A setting of '10 sec' is a good starting point for most applications. Once Sample Time has been set, press the Setup Button and the Ratio Indicator will light (see Gain Ratio below). *NOTE: During setup of Sample Time, the Bypass Indicator functions as a Rate Indicator, and will flash each time a complete sampling period has elapsed (see Bypass Switch & Indicator below).*

Gain Ratio: This screwdriver adjustable control determines how much the ANC22 will increase program volume, relative to a given increase in ambient noise. A minimum setting ('1:2') produces a 1dB increase in program volume for every 2dB increase in 'average' ambient noise level. This is good for applications (such as background music) where the program signals must remain subdued. A maximum setting ('2:1') produces a 2dB increase in program volume for every 1dB increase in 'average' ambient noise level. This is good for applications (such as foreground audio) where program signals must remain intelligible. Gain Ratio settings are also affected by 'sense' microphone placement. A setting of '1:1' is a good starting point for most applications. Once Gain Ratio has been set, press the Setup Button. The Gain Ratio Indicator will go off, the control settings will be stored in non-volatile memory, and the ANC22 will enter the normal operating mode. *NOTE: Once setup is completed, the Setup Button may be disabled. Max Level, Sample Time, & Gain Ratio controls may be enabled to allow adjustments during normal operation. These adjustments will not be stored in non-volatile memory without repeating the setup procedure (see Options on pg. 6).*

Bypass Switch & Indicator: When pressed in, this switch will defeat any ANC22 program gain increases, and set the program volume to minimum (as determined by the Min Level control). The adjacent indicator will light whenever Bypass is enabled. *NOTE: During normal operation, this indicator functions as a Rate Indicator for each sampling period (if Bypass is not enabled).*

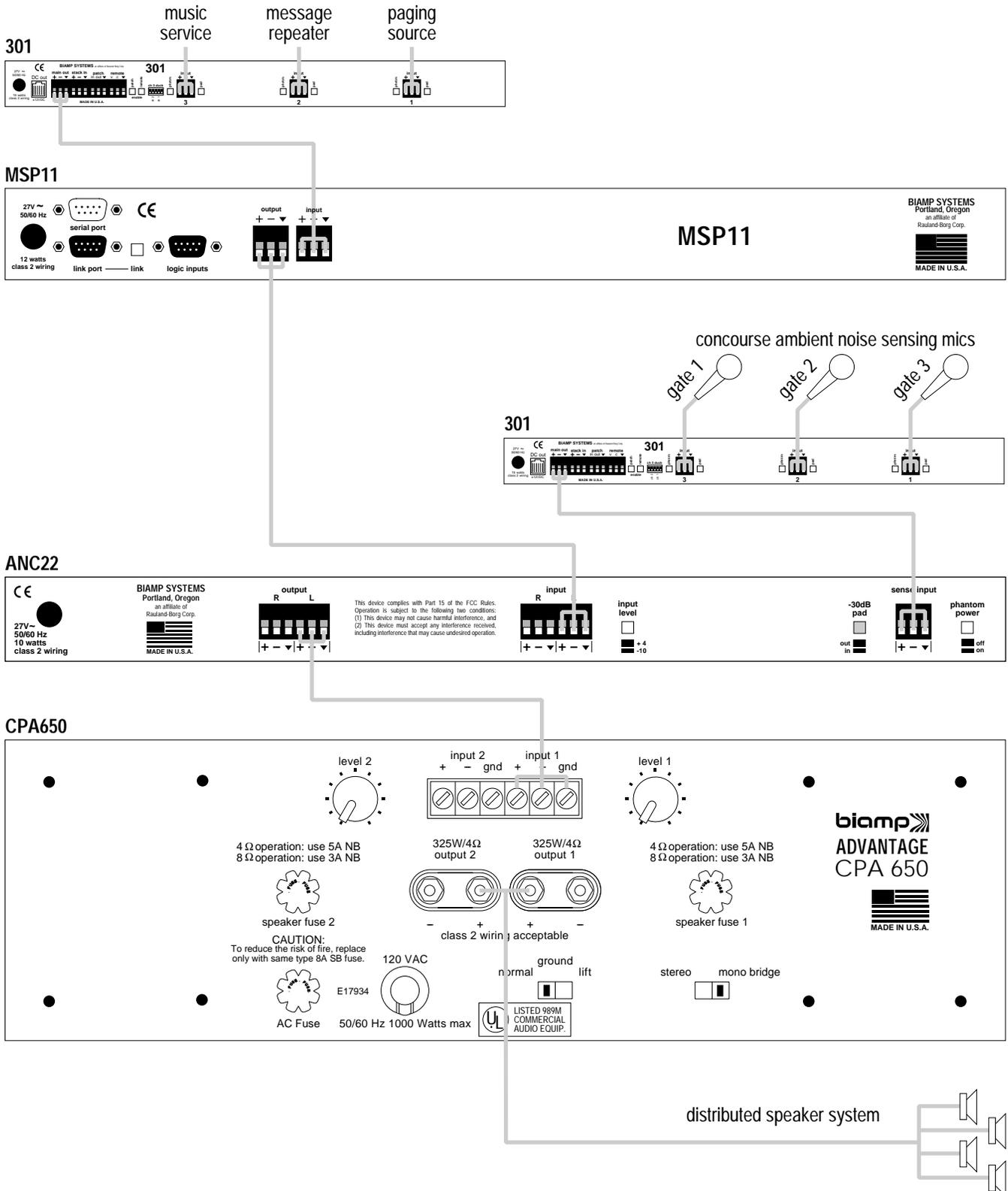
APPLICATIONS

Bar with Stereo Sound System



APPLICATIONS

Airport with Music & Page System

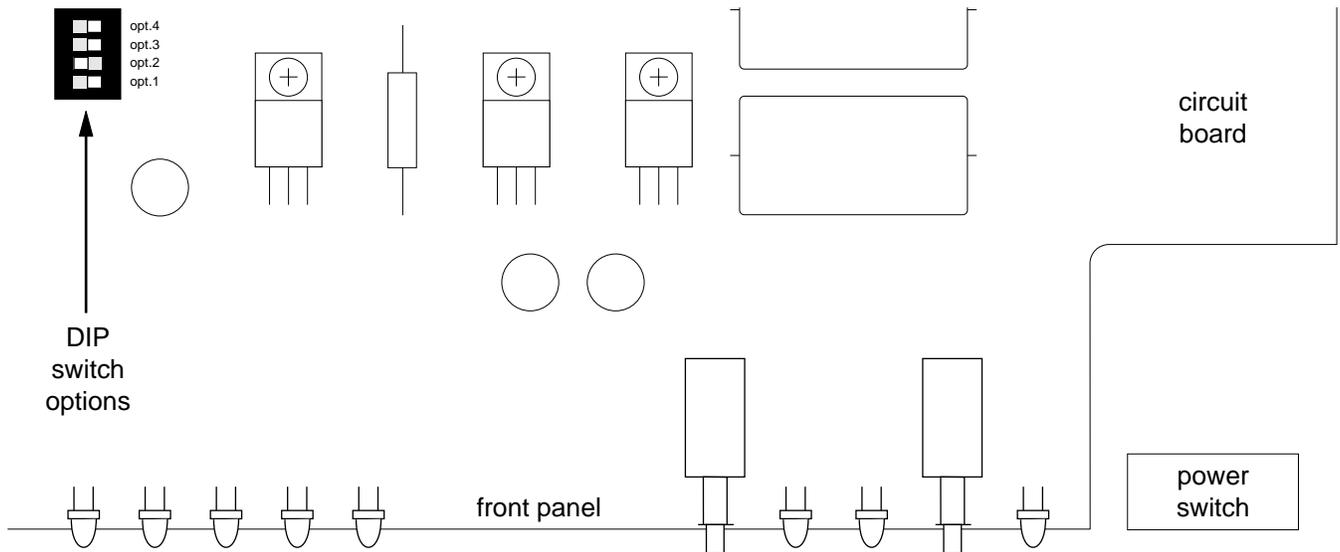


OPTIONS

To access internal options: First, disconnect power from the unit. Then, lay the unit on a flat surface with the front panel facing forward and the top panel facing up. Remove the top panel (two screws on each side; three screws along top edge of both front and rear panels).

Disable Front Panel Setup Button: Once setup mode is completed and control settings are stored in non-volatile memory, the front panel Setup Button may be disabled to prevent further adjustments or tampering. To disable the Setup Button: Locate the 4-gang DIP switch on the circuit board (see diagram below). Using a screwdriver or other implement, Move the 'opt.1' DIP switch to the left (be careful not to disturb the other DIP switch settings). Replace the top panel. The Setup Button may again be enabled by reversing this process. *NOTE: Max Level, Sample Time, & Gain Ratio are disabled during normal operation (see below).*

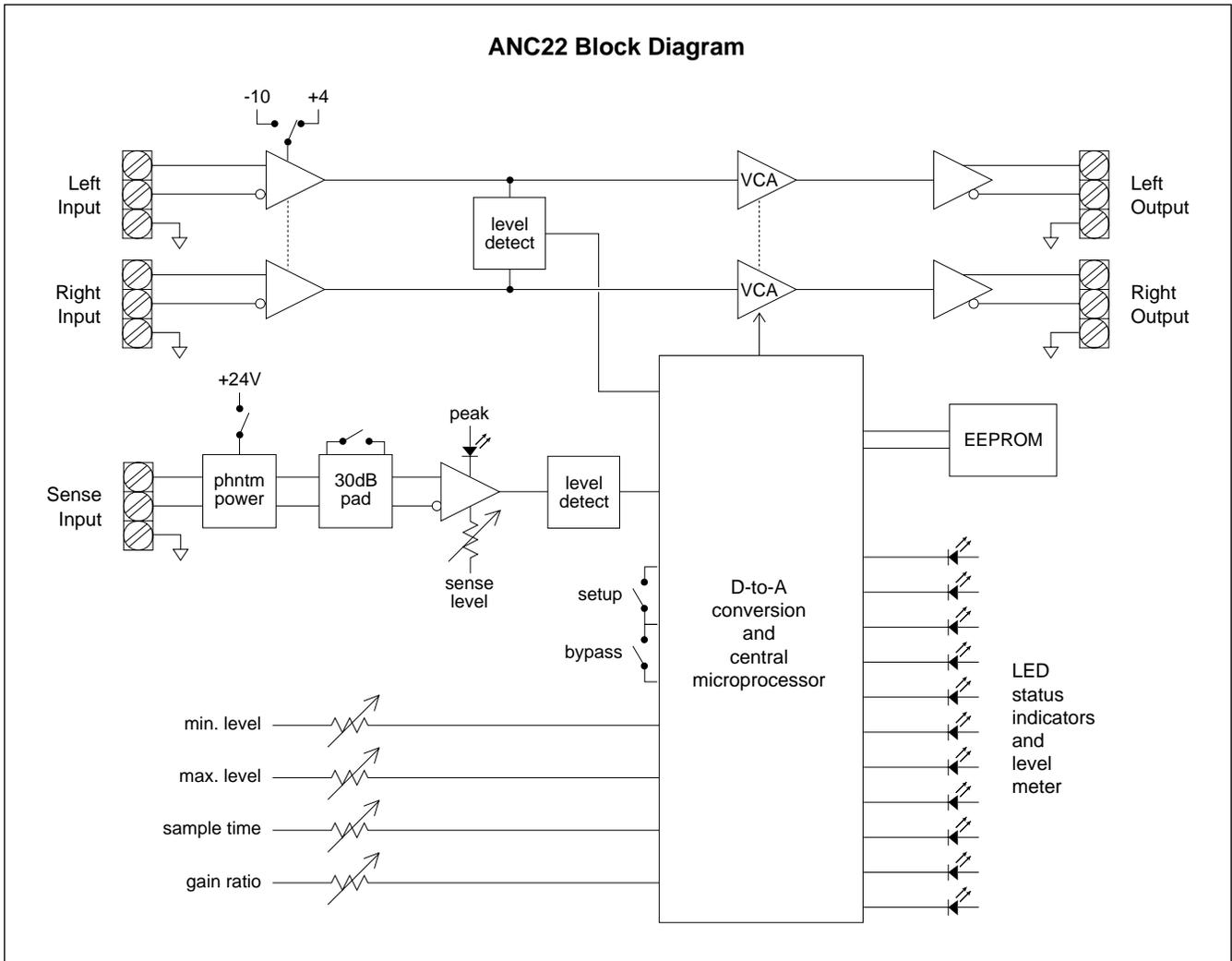
Enable Front Panel Controls: Once setup mode is completed and control settings are stored in non-volatile memory, the Max Level, Sample Time, & Gain Ratio front panel controls are disabled to prevent further adjustments or tampering. However, these controls may be enabled to allow adjustments during normal operation. Adjustments made during normal operation will not be stored in non-volatile memory without repeating the setup procedure. To enable the Front Panel Controls: Locate the 4-gang DIP switch on the circuit board (see diagram below). Using a screwdriver or other implement, Move the 'opt.2' DIP switch to the right (be careful not to disturb the other DIP switch settings). Replace the top panel. The controls may again be disabled by reversing this process. *NOTE: The Sense Level control cannot be disabled. Once setup is completed, do not disturb the Sense Level control.*



SPECIFICATIONS / BLOCK DIAGRAM

SPECIFICATIONS

Frequency Response (20Hz~20kHz @ +4dBu):	+0/-0.2dB	Stereo Input Impedance:	
Total Harmonic Distortion (20Hz~20kHz @ +4dBu):	< 0.1%	balanced	39k ohms
Output Noise (20Hz~20kHz @ unity gain):		unbalanced	19k ohms
+4dBu input reference	< -72dBu	Stereo Input Maximum Level:	
-10dBu input reference	< -75dBu	+4dBu input reference	+21dBu
Signal-to-Noise Ratio (20Hz~20kHz @ unity gain):		-10dBu input reference	+9dBu
+4dBu input reference	76dB	Stereo Output Impedance:	
-10dBu input reference	70dB	balanced	100 ohms
Maximum Gain:		unbalanced	50 ohms
+4dBu input reference	+20dB	Stereo Output Maximum Level:	
-10dBu input reference	+34dB	balanced	+24dBu
Gain Range (40dB):		unbalanced	+18dBu
+4dBu input reference	-20dB ~ +20dB	Power Consumption:	< 10 watts
-10dBu input reference	-6dB ~ +34dB	Connectors:	plug-in barrier
Response Time (variable):	1 sec ~ 5 min	Dimensions:	
Gain Ratio (variable) (Δ gain dB / Δ noise dB):	$\frac{1}{2} \sim 2$	height	1.75" (44mm)
Sense Input Impedance (balanced):	2k ohms	width	19" (483mm)
Sense Input Maximum Level (pad in):	+18dBu	depth	7.25" (184mm)
Sense Input Maximum Gain:	60dB	Weight:	5.5 lbs. (2.5kg)



WARRANTY

BIAMP SYSTEMS IS PLEASED TO EXTEND THE FOLLOWING 5-YEAR LIMITED WARRANTY TO THE ORIGINAL PURCHASER OF THE PROFESSIONAL SOUND EQUIPMENT DESCRIBED IN THIS MANUAL.

BIAMP Systems expressly warrants this product to be free from defects in material and workmanship for a period of 5 YEARS from the date of purchase as a new product from an authorized BIAMP Systems dealer under the following conditions.

1. In the event the warranted BIAMP Systems product requires service during the warranty period, BIAMP Systems will repair or replace, at its option, defective materials, provided you have identified yourself as the original purchaser of the product to any authorized BIAMP Systems Service Center. Transportation and insurance charges to and from an authorized Service Center or the BIAMP Systems factory for warranted products or components thereof to obtain repairs shall be the responsibility of the purchaser.

2. This warranty will be VOIDED if the serial number has been removed or defaced; or if the product has been subjected to accidental damage, abuse, rental usage, alterations, or attempted repair by any person not authorized by BIAMP Systems to make repairs; or if the product has been installed contrary to BIAMP Systems's recommendations.

3. Electro-magnetic fans, electrolytic capacitors, and the normal wear and tear of appearance items such as paint, knobs, handles, and covers is not covered under this warranty.

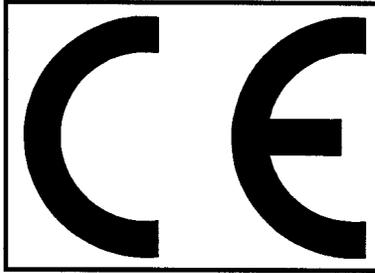
4. BIAMP SYSTEMS SHALL NOT IN ANY EVENT BE LIABLE FOR SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, INCLUDING LOST PROFITS, LOSS OF USE, PROPERTY DAMAGE, INJURY TO GOODWILL, OR OTHER ECONOMIC LOSS OF ANY SORT. EXCEPT AS EXPRESSLY PROVIDED HEREIN, BIAMP SYSTEMS DISCLAIMS ALL OTHER LIABILITY TO PURCHASER OR ANY OTHER PERSONS ARISING OUT OF USE OR PERFORMANCE OF THE PRODUCT, INCLUDING LIABILITY FOR NEGLIGENCE OR STRICT LIABILITY IN TORT.

5. THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES EXPRESSED OR IMPLIED. BIAMP SYSTEMS EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE REMEDIES SET FORTH HEREIN SHALL BE THE PURCHASER'S SOLE AND EXCLUSIVE REMEDIES WITH RESPECT TO ANY DEFECTIVE PRODUCT. THE AGENTS, EMPLOYEES, DISTRIBUTORS, AND DEALERS OF BIAMP SYSTEMS ARE NOT AUTHORIZED TO MODIFY THIS WARRANTY OR TO MAKE ADDITIONAL WARRANTIES BINDING ON BIAMP SYSTEMS. ACCORDINGLY, ADDITIONAL STATEMENTS SUCH AS DEALER ADVERTISEMENTS OR REPRESENTATIONS DO NOT CONSTITUTE WARRANTIES BY BIAMP SYSTEMS.

6. No action for breach of this warranty may be commenced more than one year after the expiration of this warranty.

Thank you for purchasing BIAMP SYSTEMS...
AMERICAN SOUND CRAFTSMANSHIP

Biamp Systems
10074 S.W. Arctic Drive
Beaverton, Oregon 97005 U.S.A.
(503) 641-7287
<http://www.biamp.com>



Declaration of Conformity

BIAMP SYSTEMS
10074 SW Arctic Drive
Beaverton, OR USA 97005

as the manufacturer, hereby declares that the following described product, in our delivered version, complies with the provisions of the DIRECTIVES as noted herein. In case of alteration of the product, not agreed upon or directed by us, this declaration is no longer valid.

Product: Model: ADVANTAGE® ANC22
Description: Ambient Noise Compensator

Applicable EC Directives: EMC Directive (89/336/EEC) LVD Directive (73/23/EEC)

Applicable Harmonized Standards: EN50081-1 emissions EN50082-1 immunity
EN60065 safety

Special Considerations for Product Environment or Compliance: Shielded cabling must be used for system connections.

This apparatus operates from a removeable external power source at voltages below the levels encompassed by the LVD. The external power source complies with the applicable requirements of EN60065. The apparatus itself is outside of the scope of the LVD and presents no hazardous voltages, as defined in the LVD. For compliance, the apparatus shall be powered only from the separate CE marked BIAMP SYSTEMS power source.

The Technical Report/File is maintained at:

Biamp Systems
10074 SW Arctic Drive
Beaverton, OR USA 97005
phone: (503) 641-7287 fax: (503) 626-0281
e-mail: biamp@biamp.com

Authorized Representative: Ralph Lockhart, President

Authorized Representative Signature:

Issued: 1998

A handwritten signature in black ink, appearing to read "Ralph D. Lockhart".

SAFETY INFORMATION

The words **WARNING** and **CAUTION** throughout the manual, and on the device, call attention to important safety information. These words have the following meanings.

WARNING: The related information alerts you to conditions that could result in serious injury or damage to property if the instructions are not followed properly.

CAUTION: The related information instructs you on how to prevent damage to the equipment or how to avoid conditions that could result in minor injury if proper steps are not followed.

Product labelling and the operation manual may use the internationally recognized symbols defined below to note safety messages.



The lightning flash with arrowhead symbol, enclosed within a triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the apparatus's enclosure or at connection terminals that may be of sufficient magnitude to constitute a risk of electrical shock.



The exclamation point, enclosed within a triangle, is intended to alert the user to important installation, operation, and maintenance (servicing) instructions in the literature accompanying the apparatus.

WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRICAL SHOCK, DO NOT EXPOSE THIS APPARATUS TO RAIN OR MOISTURE.

CAUTION: Installation of this apparatus should be made by a qualified installation person and should conform to all applicable local codes.



Modification and optional equipment information referenced in this manual is for use by qualified installation and service personnel only.



"INFORMACIÓN DE SEGURIDAD"

Las palabras **PELIGRO** (**WARNING**) y **PRECAUCIÓN** (**CAUTION**) a lo largo del manual y en el dispositivo (sistema), llaman la atención acerca de una importante información de seguridad. Estas palabras tienen los siguientes significados:

PELIGRO : la información relata las condiciones en que podría ser dañada seriamente la propiedad si no se siguen adecuadamente las instrucciones.

PRECAUCIÓN : la información que se relata le instruye en cómo prevenir daños al equipo o como evitar condiciones que podrían resultar en perjuicio menor si los pasos adecuados no son seguidos correctamente.

El etiquetado del producto y el manual de operación pueden hacer uso de los símbolos reconocidos internacionalmente y cuyos mensajes están definidos a continuación para modificar mensajes de seguridad:



El símbolo del rayo encerrado en un triángulo pretende alertar al usuario de la presencia de un peligroso voltaje no aislado, dentro de la caja del aparato o a un terminal de conexión y que podría ser de suficiente magnitud como para constituir un grave riesgo de descarga eléctrica.



El punto de exclamación dentro de un triángulo pretende alertar al usuario de la importancia de las instrucciones de instalación, operación y mantenimiento (servicio) que acompañan al aparato.

PELIGRO : para reducir el riesgo de fuego o una descarga eléctrica, no exponer este aparato a la lluvia o la humedad.

PRECAUCIÓN : la instalación de este aparato debería hacerse por una persona cualificada en la instalación, y debería conformar todos los códigos locales aplicables.



La modificación y la información opcional del equipo referenciada en este manual es para ser utilizada únicamente por personal cualificado en instalación y servicio.



INFORMATION CONCERNANT VOTRE SECURITE

Les mots **WARNING** et **CAUTION** dans le manuel d'utilisation et sur les appareils attirent votre attention sur les plus importantes informations concernant votre sécurité. Ces mots ont la signification suivante:

WARNING: Ce mot vous indique les circonstances dans lesquelles vous pourriez être blessé ou endommager votre équipement si les instructions ne sont pas suivies correctement.

CAUTION: Ce mot vous indique comment éviter d'endommager votre matériel et comment éviter de vous blesser si vous ne suivez pas les instructions.

Vous trouverez peut-être les symboles suivants sur votre appareil ou dans le manuel d'utilisation.



L'éclair se terminant en flèche dans un triangle permet de prévenir l'utilisateur d'un voltage dangereux non isolé dans l'appareil ou d'une connexion d'une amplitude suffisante pour constituer un risque de choc électrique.



Le point d'exclamation dans un triangle permet de prévenir l'utilisateur des points importants concernant l'installation, le fonctionnement et l'entretien de l'appareil figurant dans le manuel d'utilisation.

WARNING: POUR REDUIRE LES RISQUES DE FEU OU DE CHOC ELECTRIQUE, NE PAS METTRE L'APPAREIL SOUS LA PLUIE OU DANS L'HUMIDITE.

CAUTION: L'installation de cet appareil doit être faite par un installateur qualifié et doit être en conformité avec toutes les lois locales en application.



Les informations concernant une modification ou un équipement en option dans le manuel doivent être effectués par du personnel qualifié.



INFORMAZIONI PER LA SICUREZZA

Le parole **AVVERTENZA** (**WARNING**) e **PRUDENZA** (**CAUTION**) poste sul manuale d'uso e sul apparato richiamano la vostra attenzione su delle importanti informazioni per la vostra sicurezza. Queste parole hanno il seguente significato.

AVVERTENZA: La suddetta indicazione vi avvisa sul rischio di incorrere in danni a cose o a persone, se le procedure d'uso e installazione non saranno seguite propriamente.

PRUDENZA: La suddetta indicazione vi instruisce su come prevenire e ridurre al minimo, il rischio di danni agli apparati e alle persone se le istruzioni saranno seguite propriamente.

Le apparecchiature e i manuali di istruzioni riporteranno la simbologia standard raffigurata qui sotto, accompagnate dalle relative informazioni per la sicurezza.



La simbologia con il fulmine all'interno di un triangolo, intende avvisare l'utente della presenza di alto voltaggio all'interno dell'apparecchio in questione, e che il suddetto apparecchio si alimenta attraverso una tensione di rete ad alto voltaggio e che dunque si potrebbe incorrere sul rischio di una possibile scossa elettrica.



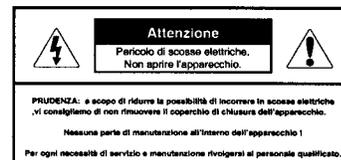
La simbologia con il punto esclamativo all'interno di un triangolo, intende avvisare l'utente di una serie di istruzioni contenute nel manuale d'uso riguardanti: operato, manutenzione e assistenza. Il suddetto manuale sarà a corredo dell'apparecchio.

AVVERTENZA: PER RIDURRE IL RISCHIO DI POSSIBILI INCENDI O SCOSSE ELETTRICHE, SCONSIGLIAMO DI ESPORRE L'APPARECCHIO ALLA PIOGGIA O ALL'UMIDITA'.

PRUDENZA: L'installazione di questo apparato dovrà essere effettuata solo da personale qualificato e il tipo di installazione dovrà essere in regola con le norme vigenti locali.



Modifiche e ulteriori informazioni specificate in questo manuale sono solamente riservate al personale qualificato all'installazione.



Sicherheitshinweise

Die Begriffe **WARNUNG** (engl. WARNING) und **ACHTUNG** (engl. CAUTION) in der Bedienungsanleitung und auf den Geräten machen auf wichtige Sicherheitsinformationen aufmerksam. Diese Begriffe haben die folgende Bedeutung:

WARNUNG: Der folgende Text warnt Sie vor ernsthaften Verletzungen oder Beschädigungen, die aus einer fehlerhaften Bedienung bzw. Handhabung des Gerätes resultieren können.

ACHTUNG: Der folgende Text informiert Sie über Bedienungshinweise zum Schutz Ihres Gerätes oder weist auf mögliche Schäden hin, wenn die Bedienungshinweise nicht beachtet werden.

Die Beschriftung der Geräte und die Bedienungsanleitungen weisen unter Umständen international bekannte Symbole auf, die die folgende Bedeutung haben:



Das Blitzsymbol im Dreieck warnt vor anliegender, nicht isolierter „gefährlicher Spannung“ im Inneren oder an den Anschlüssen des Gerätes. Die Berührung der unter Spannung stehenden Teile kann zu einem elektrischen Schock führen.



Das Fußzeichen im Dreieck macht auf wichtige Installations-, Bedienungs- und Servicehinweise in der zugehörigen Bedienungsanleitung aufmerksam.

WARNUNG: Zur Minderung des Risikos von Feuer und elektrischem Schock schützen Sie das Gerät vor Regen und Feuchtigkeit.

ACHTUNG: Die Installation des Gerätes sollte nur durch qualifiziertes Personal durchgeführt werden und muß den jeweiligen Bestimmungen entsprechen.



Die Modifikationen und die Informationen zu den optionalen Erweiterungen in der Bedienungsanleitung sind nur für qualifiziertes Personal bestimmt.

	ACHTUNG Risiko von elektrischem Schock Gerät nicht öffnen	
Achtung: Zur Minderung des Risikos von elektrischem Schock das Gerät nicht öffnen		
Keine Bedienungselemente im Inneren des Gerätes		
Service nur durch qualifiziertes Personal durchführen lassen		

Sikkerhedsinformation

Ordene **ADVARSEL** (WARNING) og **FORSIGTIG** (CAUTION), brugt i henholdsvis brugervejledning og på selve produktet, indikerer, at vigtig information omkring sikkerhed følger. Ordene betyder følgende:

ADVARSEL: Den efterfølgende information advarer Dem om forhold, der kan føre til alvorlige ulykker og ejendomsskader, hvis ikke vejledningen følges.

FORSIGTIG: Den efterfølgende information vejleder Dem i, hvordan De undgår skade på produktet, samt undgår forhold der kan føre til mindre ulykker og ejendomsskader, hvis ikke vejledningen følges.

Produktetiketter og brugervejledning kan indeholde de internationalt anerkendte symboler der er vist nedenfor:



Trekanten med et lyn i midten har til hensigt at advare brugeren om, at produktet indeholder "farlig spænding", og at det derfor er forbundet med fare for elektrisk stød at åbne produktet.



Trekanten med udråbstegn har til hensigt at advare brugeren om, at vigtig information omkring installation, brug, service og vedligeholdelse af produktet er indeholdt i den medfølgende brugervejledning.

ADVARSEL: Med henblik på at reducere risikoen for brand eller elektrisk stød, må produktet ikke udsættes for regn eller fugt.

FORSIGTIG: Installation af dette produkt skal foretages af en autoriseret installatør og skal være i overensstemmelse med alle anvendelige lokale retningslinier.



Modifikationer samt alternativt udstyr beskrevet i denne brugervejledning er kun henvendt til kvalificerede installatører og servicepersonale.

	FORSIGTIG Fare for elektrisk stød - må ikke åbnes.	
FORSIGTIG: Med henblik på at reducere risikoen for elektrisk stød, må svaret ikke fjernes.		
Indeholder ingen komponenter relevante for brugeren.		
Anvend autoriseret servicepersonale ved alle serviceeftersyn.		

VEILIGHEIDSINFORMATIE

De woorden **WAARSCHUWING** (WARNING) en **VOORZICHTIG** (CAUTION) welke in de handleiding en op het apparaat voorkomen, waarschuwen U voor belangrijke veiligheidsinformatie. Zij hebben de volgende betekenis:

WAARSCHUWING: De betreffende informatie waarschuwt U voor omstandigheden die kunnen leiden tot defecten of beschadigingen aan apparaten als de instructies niet volledig worden opgevolgd.

VOORZICHTIG: De betreffende informatie instrueert U hoe U defecten aan apparatuur kunt voorkomen of hoe U omstandigheden kunt vermijden die kunnen resulteren in schade als de juiste stappen niet worden opgevolgd.

Produkt informatie en handleiding hanteren onderstaande internationale erkende symbolen om veiligheidsinstructies aan te geven.



De bliksemschicht in een driehoek wordt gebruikt om de gebruiker te attenderen op ongeïsoleerde "gevaarlijke spanning" in het apparaat of bij de aansluitklemmen, die het risico van een elektrische schok kunnen geven.



Het uitroepteken in een driehoek wordt gebruikt om de gebruiker te attenderen op belangrijke installatie, gebruiks- en onderhoudsinstructies in de beschrijving die bij het apparaat hoort.

WAARSCHUWING: OM HET RISICO VAN BRAND OF EEN ELECTRICISCHE SCHOK TE VERMIDDEN DIENT U HET APPARAAT NIET AAN VOCHT BLOOT TE STELLEN.

VOORZICHTIG: Installatie van dit apparaat dient te geschieden door gekwalificeerd personeel en dient te geschieden conform de plaatselijke voorschriften.



Modificaties en aanvullende informatie waar in de handleiding naar wordt verwezen, dient alleen voor gebruik door gekwalificeerd personeel.

	VOORZICHTIG. Risiko van elektrische schok. Niet openen.	
Waarschuwing: Om het risico van een elektrische schok te verminderen het apparaat niet openen.		
Er zijn geen, door gebruiker, vervangbare onderdelen in dit apparaat.		
Service overlaten aan gekwalificeerd service personeel.		

TURVALLISUUSTIEDOTE

Sanat **VAROITUS** (WARNING) ja **HUOMIO** (CAUTION), jotka esiintyvät manuaalissa ja itse laitteessa, ilmoittavat tärkeistä turvallisuusinformatiosta. Näillä sanoilla on seuraava merkitys:

VAROITUS: Yhteydessä oleva informaatio varoittaa olosuhteista, jotka saattavat johtaa vakaviin vammoihin tai laitteen vaurioitumiseen, mikäli ohjeita ei täysin noudateta.

HUOMIO: Yhteydessä oleva informaatio neuvoo, miten laitteen vaurioituminen voidaan ehkäistä tai miten voidaan välttää olosuhteet, jotka voivat johtaa lieviin vammoihin, mikäli ohjeita ei noudateta.

Tuotteessa tai käyttöohjeessa voidaan käyttää seuraavia alla määriteltyjä kansainvälisiä symboleja, jotka viittaavat turvallisuusinformatioon.



Kolmion sisällä olevan nuolipäinen salama varoittaa käyttäjää laitteen sisällä tai liitännöissä olevasta eristämättömästä vaarallisesta jännitteestä, joka saattaa olla tarpeeksi suuri aiheuttaakseen sähköiskun vaaran.



Kolmion sisällä oleva huutomerkki tarkoituksena on ilmoittaa käyttäjälle tärkeistä asennusta, käyttöä tai huoltoa koskevista ohjeista laitteen mukana seuraavassa kirjallisuudessa.

VAROITUS: ÄLÄ ALTISTA LAITETTA SATEELLE TAI KOSTEUELLE TULIPALON JA SÄHKÖISKUN VAARAN VUOKSI.

HUOMIO: Laitteen asentaminen tulisi jättää ammattitaitoisen henkilön suoritettavaksi ja asennuksessa tulee noudattaa kaikkia paikallisia säännöksiä.



Tässä manuaalissa oleva informaatio, joka koskee muutostöitä ja lisälaitteita, on tarkoitettu vain ammattitaitoisten asennus- ja huoltohenkilöiden käyttöön.

	HUOMIO Sähköiskun vaara, älä avaa.	
HUOMIO: ÄLÄ AVAA KANTTA SÄHKÖISKUN VAARAN VUOKSI		
EI SISÄLLÄ KÄYTTÄJÄN HUOLLETTAVIA OSIA		
JÄTÄ HUOLTO AMMATTITAITOISELLE HENKILÖKUNNALLE		

SIKKERHETS INFORMASJON

Når ordene **ADVARSEL** (WARNING) og **VIKTIG** (CAUTION) blir brukt i manualen og på produktet, gjelder det informasjon som har med brukersikkerhet å gjøre. Ordene har følgende mening:

ADVARSEL: Tilhørende informasjon viser til forhold som kan resultere i alvorlige skader eller ødeleggelser hvis anvisningene ikke følges nøye.

VIKTIG: Tilhørende informasjon forteller deg hvordan du skal unngå feil på utstyret, eller unngå situasjoner som kan resultere i mindre skader.

Produktmerkingen og bruksanvisningen bruker internasjonale symboler for å merke punkter som er viktige for brukersikkerheten.



Lynet i en triangel advarer brukeren om uisolert "farlig spenning" inne i apparatet, eller tilkoblingsterminaler som kan gi støt.



Etter utropsteget i en triangel følger informasjon som er viktig når det gjelder installasjon, bruk og vedlikehold (service) av apparatet.

ADVARSEL: FOR Å REDUSERE FAREN FOR BRANN ELLER STØT MÅ APPARATET IKKE UTSETTES FOR VANN ELLER FUKTIGHET.

VIKTIG: Installasjon av apparatet skal foretas av autorisert installatør etter gjeldende forskrifter.



Modifikasjoner og tilleggsinformasjon som følger er kun for kvalifiserte installatører eller servicepersonell.

	VIKTIG FARE FOR STØT, MÅ IKKE DEMONTERES.	
VIKTIG: For å unngå faren for støt, må ingen deksler fjernes. Ingen interne deler skal justeres eller repareres av bruker. Overlat service til autorisert personell.		

SÄKERHETS INFORMATION

Orden **VARNING** (WARNING) och **OBSERVERA** (CAUTION) vilka används i denna manual och på apparaten, är menade att uppmärksamma viktig säkerhetsinformation. Dessa ord har följande betydelse.

VARNING: Information som uppmärksammar på omständigheter som kan resultera i allvarig personskada eller skada på egendom om instruktionerna ej följs.

OBSERVERA: Information som uppmärksammar på instruktioner om hur skada på utrustning eller hur situationer där lättare personskador kan uppstå undviks.

Följande internationellt använda ord och symboler används i handboken och på märkningar på produkten för att uppmärksamma användare på viktiga säkerhetsinstruktioner.



En blixtnedslagsymbol i en triangel, menad att uppmärksamma användare på närvaron av isolerade "farliga spänningar" i apparaten eller på anslutningskontakter vilka har tillräcklig styrka för att medföra risk för elektrisk stöt.



Ett utropstecken i en triangel, menad att uppmärksamma användare på viktiga installations, handhavande eller underhållsinstruktioner i medföljande dokumentation.

VARNING: FÖR ATT MINSKA RISKEN FÖR BRAND ELLER ELEKTRISK STÖT, UTSÄTT EJ APPARATEN FÖR FUKT ELLER VÄTSKA.

OBSERVERA: Installation av denna apparat skall utföras av kvalificerad installatör samt enligt alla gällande lokala bestämmelser.



Eventuella modifieringsinstruktioner och annan information av teknisk art i denna manual är endast avsedd att användas av kvalificerad installations- och servicepersonell.

	OBSERVERA RISK FÖR ELEKTRISK STÖT FÄR EJ ÖPPNAS	
OBSERVERA: FÖR ATT MINSKA RISKEN FÖR ELEKTRISK STÖT, AVLÅSNA EJ LOCKET. INGA AV ANVÄNDARE UTBYTBARA ELLER REPARERBARA KOMPONENTER INUTI DENNA APPARAT. ALL SERVICE PÅ DENNA APPARAT SKALL UTFÖRAS AV KVALIFICERAD PERSONAL.		

ΠΛΗΡΟΦΟΡΙΕΣ ΑΣΦΑΛΕΙΑΣ

Οι λέξεις **ΚΙΝΔΥΝΟΣ** (WARNING) και **ΠΡΟΣΟΧΗ** (CAUTION) που αναφέρονται μέσα στο εγχειρίδιο και στη συσκευή, επικεντρώνουν την προσοχή σε σημαντικές πληροφορίες ασφαλείας. Οι λέξεις αυτές έχουν την παρακάτω σημασία.

ΚΙΝΔΥΝΟΣ: Η αναγραφόμενη πληροφορία επιστάει την προσοχή σας σε καταστάσεις που θα μπορούσαν να έχουν σαν αποτέλεσμα σοβαρό τραυματισμό ή καταστροφή της ιδιοκτησίας αν οι οδηγίες δεν ακολουθηθούν κατάλληλα.

ΠΡΟΣΟΧΗ: Η αναγραφόμενη πληροφορία σας καθοδηγεί πώς να προλάβετε καταστροφή του εξοπλισμού ή πώς να αποφύγετε καταστάσεις που θα μπορούσαν να έχουν ως αποτέλεσμα μικροτραυματισμούς αν δεν ακολουθηθούν τα σωστά βήματα.

Στις επιγραφές των προϊόντων και στο εγχειρίδιο λειτουργίας, χρησιμοποιούνται τα συμβολικά αναγνωρισμένα σύμβολα, των οποίων ο ορισμός δίνεται παρακάτω έτσι ώστε να υπογραμμιστούν τα μηνύματα ασφαλείας.



Η φωτεινή αναλαμπή με σύμβολο το βέλος, μέσα στο τρίγωνο, έχει σκοπό να επιστήση την προσοχή του χρήστη, στην ύπαρξη μη-μονομέρους « επικίνδυνος ισχύος ρεύματος » στο εσωτερικό της συσκευής ή στις άκρες σύνδεσης οι οποίες μπορεί να έχουν αρκετό μέγεθος ώστε να περιέχουν κίνδυνο ηλεκτροπληξίας.



Το επεξηγηματικό σημείο, μέσα στο τρίγωνο, έχει σκοπό να επιστήση την προσοχή του χρήστη στις σημαντικές οδηγίες εγκατάστασης, λειτουργίας και συντήρησης (service) που περιέχονται στα φυλλάδια που συνοδεύουν την συσκευή.

ΚΙΝΔΥΝΟΣ: Για να αποφύγετε τον κίνδυνο φωτιάς ή ηλεκτροπληξίας, μην εκθέτετε αυτή τη συσκευή σε βροχή ή σε υγρασία.

ΠΡΟΣΟΧΗ: Η εγκατάσταση αυτής της συσκευής θα πρέπει να γίνει από εξειδικευμένο άτομο και θα πρέπει να προσαρμόζεται σε όλους τους εφαρμοσμένους τοπικούς κώδικες.



Οι τροποποιήσεις και οι προληπτικές πληροφορίες για τον εξοπλισμό, που αναφέρονται σε αυτό το εγχειρίδιο, προορίζονται για χρήση μόνο από εξειδικευμένα στην εγκατάσταση και στο service, άτομα.

	ΠΡΟΣΟΧΗ ΚΙΝΔΥΝΟΣ ΗΛΕΚΤΡΟΠΛΗΞΙΑΣ. ΜΗΝ ΑΝΟΙΓΕΤΕ.	
ΠΡΟΣΟΧΗ: ΓΙΑ ΝΑ ΜΕΙΩΣΕΤΕ ΤΟΝ ΚΙΝΔΥΝΟ ΗΛΕΚΤΡΟΠΛΗΞΙΑΣ, ΜΗΝ ΜΕΤΑΚΙΝΗΣΕΤΕ ΤΟ ΚΑΛΥΜΜΑ. ΔΕΝ ΠΑΡΕΧΟΝΤΑΙ ΑΝΤΑΛΛΑΚΤΙΚΑ SERVICE ΣΤΟΝ ΧΡΗΣΤΗ ΓΙΑ SERVICE ΑΝΑΦΕΡΕΤΕ ΣΤΟ ΕΞΕΙΔΙΚΕΥΜΕΝΟ ΠΡΟΣΩΠΙΚΟ SERVICE.		

INFORMAÇÃO SOBRE SEGURANÇA

As palavras **ADVERTÊNCIA** (WARNING) e **PRECAUÇÃO** (CAUTION) neste manual, e no dispositivo, alertam para importantes informações sobre segurança. Estas palavras significam o seguinte:

ADVERTÊNCIA: Informação relacionada que alerta sobre condições que poderão resultar em lesões sérias ou prejuízo, se as instruções não forem seguidas adequadamente.

PRECAUÇÃO: Informação relacionada que instrui como prevenir danos no equipamento ou como evitar condições que poderão resultar em lesões leves, se os passos não forem seguidos adequadamente.

As etiquetas do produto e do manual de operações podem usar os símbolos internacionalmente reconhecidos definidos abaixo para advertir mensagens de segurança.



o símbolo do relâmpago com uma seta, dentro de um triângulo, tem o fim de alertar o usuário a presença de "voltagem perigosa" sem isolamento dentro da caixa isolamento do aparelho ou nos terminais de ligação que podem ter a magnitude suficiente que constitui um risco de choque elétrico.



ponto de exclamação, dentro de um triângulo, tem o fim de alertar o usuário sobre instruções importantes de instalação, operação e manutenção (serviços) na literatura que acompanha o aparelho.

ADVERTÊNCIA: PARA REDUZIR O RISCO DE INCÊNDIO OU CHOQUE ELÉCTRICO, NÃO EXPONHA ESTE APARELHO A CHUVA OU HUMIDADE.

PRECAUÇÃO: A instalação deste aparelho deve ser feita por um profissional qualificado e deve obedecer a todos os códigos locais aplicáveis.



Modificação e informação sobre equipamento adicional citados neste manual são para o uso exclusivo do pessoal qualificado de instalação e manutenção.

	PRECAUÇÃO RISCO DE CHOQUE ELÉCTRICO NÃO ABRA.	
PRECAUÇÃO: PARA REDUZIR O RISCO DE CHOQUE ELÉCTRICO, NÃO REMOVA A TAMPA. PARTES INTERNAS NÃO MANTIDAS PELO USUÁRIO. ENCAMINHE A MANUTENÇÃO PARA PESSOAL DE SERVIÇOS QUALIFICADO.		