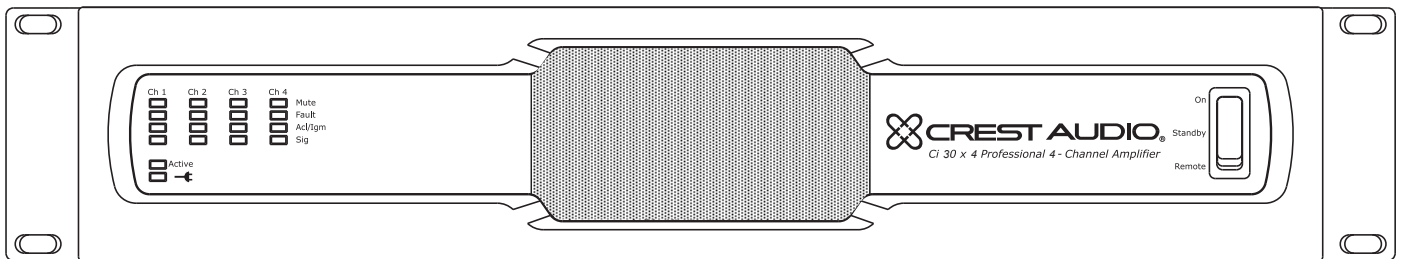
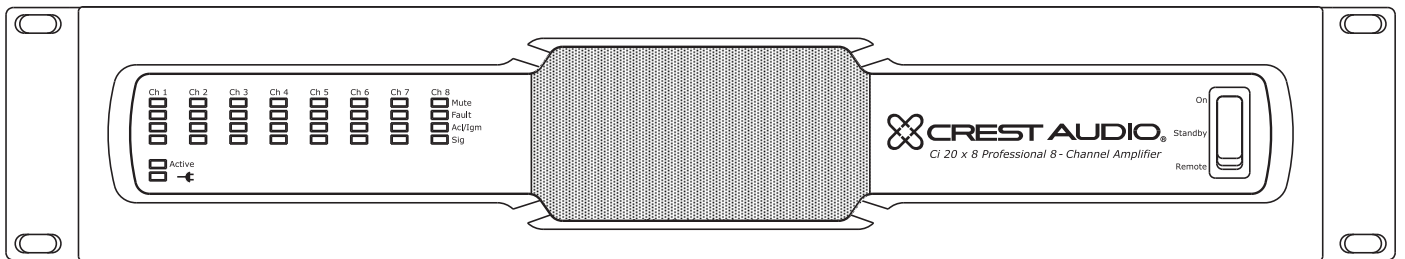




PROFESSIONAL  
POWER AMPLIFIERS



OWNER'S MANUAL



Intended to alert the user to the presence of uninsulated “dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



Intended to alert the user of the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

**CAUTION:** Risk of electrical shock — DO NOT OPEN!

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

**WARNING:** To prevent electrical shock or fire hazard, this apparatus should not be exposed to rain or moisture, and objects filled with liquids, such as vases, should not be placed on this apparatus. Before using this apparatus, read the operating guide for further warnings.



**Protective earthing terminal.** The apparatus should be connected to a mains socket outlet with a protective earthing connection.



Este símbolo tiene el propósito, de alertar al usuario de la presencia de “(voltaje) peligroso” sin aislamiento dentro de la caja del producto y que puede tener una magnitud suficiente como para constituir riesgo de descarga eléctrica.



Este símbolo tiene el propósito de alertar al usuario de la presencia de instrucciones importantes sobre la operación y mantenimiento en la información que viene con el producto.

**PRECAUCION:** Riesgo de descarga eléctrica ¡NO ABRIR!

**PRECAUCION:** Para disminuir el riesgo de descarga eléctrica, no abra la cubierta. No hay piezas útiles dentro. Deje todo mantenimiento en manos del personal técnico cualificado.

**ADVERTENCIA:** Para prevenir choque eléctrico o riesgo de incendios, este aparato no se debe exponer a la lluvia o a la humedad. Los objetos llenos de líquidos, como los floreros, no se deben colocar encima de este aparato. Antes de usar este aparato, lea la guía de funcionamiento para otras advertencias.



**Terminal de puesta a tierra de protección.** El aparato debe estar conectado a una toma de corriente con conexión a tierra de protección.



Ce symbole est utilisé dans ce manuel pour indiquer à l'utilisateur la présence d'une tension dangereuse pouvant être d'amplitude suffisante pour constituer un risque de choc électrique.



Ce symbole est utilisé dans ce manuel pour indiquer à l'utilisateur qu'il ou qu'elle trouvera d'importantes instructions concernant l'utilisation et l'entretien de l'appareil dans le paragraphe signalé.

**ATTENTION:** Risques de choc électrique — NE PAS OUVRIR!

**ATTENTION:** Afin de réduire le risque de choc électrique, ne pas enlever le couvercle. Il ne se trouve à l'intérieur aucune pièce pouvant être réparée par l'utilisateur. Confiez l'entretien et la réparation de l'appareil à un réparateur Peavey agréé.

**AVIS:** Dans le but de réduire les risques d'incendie ou de décharge électrique, cet appareil ne doit pas être exposé à la pluie ou à l'humidité et aucun objet rempli de liquide, tel qu'un vase, ne doit être posé sur celui-ci. Avant d'utiliser de cet appareil, lisez attentivement le guide fonctionnant pour avertissements supplémentaires.



**Borne de terre de protection.** L'appareil doit être connecté à une prise secteur avec une connexion à la terre.



Dieses Symbol soll den Anwender vor unisolierten gefährlichen Spannungen innerhalb des Gehäuses warnen, die von Ausreichender Stärke sind, um einen elektrischen Schlag verursachen zu können.



Dieses Symbol soll den Benutzer auf wichtige Instruktionen in der Bedienungsanleitung aufmerksam machen, die Handhabung und Wartung des Produkts betreffen.

**VORSICHT:** Risiko — Elektrischer Schlag! Nicht öffnen!

**VORSICHT:** Um das Risiko eines elektrischen Schlages zu vermeiden, nicht die Abdeckung entfernen. Es befinden sich keine Teile darin, die vom Anwender repariert werden könnten. Reparaturen nur von qualifiziertem Fachpersonal durchführen lassen.

**WARNUNG:** Um elektrischen Schlag oder Brandgefahr zu verhindern, sollte dieser Apparat nicht Regen oder Feuchtigkeit ausgesetzt werden und Gegenstände mit Flüssigkeiten gefüllt, wie Vasen, nicht auf diesen Apparat gesetzt werden. Bevor dieser Apparat verwendet wird, lesen Sie bitte den Funktionsführer für weitere Warnungen.



**Schutzerdung Terminal.** Das Gerät nur an Steckdose mit Schutzleiter angeschlossen werden.



Tarkoitettu kiinnittämään käyttäjän huomio sellaiseen eristämättömään vaaralliseen jännitteeseen tuotteen kotelossa, joka saattaa olla riittävän suuri aiheuttaakseen sähköiskuvaaran.



Tarkoitettu kiinnittämään käyttäjän huomio tärkeisiin käyttö- ja huolto-ohjeisiin tuotteen mukana seuraavassa ohjeistuksessa.

**VAROITUS:** Sähköiskun vaara — ÄLÄ AVAA!

**VAROITUS:** Sähköiskuvaaran vuoksi älä poista kantta. Ei sisällä käyttäjän huollettavissa olevia osia. Huoltaminen tulee jättää pätevä huoltohenkilöstön tehtäväksi.

**VAARA:** Sähköiskun tai tulipalon vaaran estämiseksi tätä laitetta ei saa altistaa sateelle tai kosteudelle, eikä sen päälle saa asettaa nesteellä täytettyjä esineitä, kuten maljakoita. Ennen laitteen käyttöä lue muut varoitukset käyttöohjeesta.



**Suojamaadoitus terminaali.** Laitte tulee kytkeä sähköverkkoon suojajohtimella.

Laitte on liitettävä suojamaadoituskoskettimilla varustettuun pistorasiaan.



Är avsedd att varna användaren för förekomsten av oisolerad "farlig spänning" inom produktens hölje som kan vara av tillräcklig nivå för att personer ska riskera elektrisk stöt.



Är avsedd att uppmärksamma användaren på förekomsten av viktiga handhavande- och underhållsinstruktioner (service) i den litteratur som medföljer produkten.

**OBSERVERA:** Risk för elektrisk stöt – ÖPPNA INTE!

**OBSERVERA:** För att minska risken för elektrisk stöt, avlägsna inte höljet. Inga delar inuti kan underhållas av användaren. Låt kvalificerad servicepersonal sköta servicen.

**WARNING:** För att förebygga elektrisk stöt eller brandrisk bör apparaten inte utsättas för regn eller fukt, och föremål fyllda med vätskor, såsom vaser, bör inte placeras på denna apparat. Läs bruksanvisningen för ytterligare varningar innan denna apparat används.



**Skyddsjordning terminalen.** Apparaten skall anslutas till ett uttag med skyddande jordanslutning.

Apparaten skall anslutas till jordat uttag.



Har til hensikt å advare brukeren om tilstedeværelse av uisolert "farlig spenning" inne i produktet, som kan ha tilstrekkelig styrke til å medføre risiko for elektrisk støt for en person.



Har til hensikt å informere brukeren om tilstedeværelsen av viktige bruks- og vedlikeholds (service)-instruksjoner i litteraturen som følger med produktet.

**ADVARSEL:** Risiko for elektrisk støt — MÅ IKKE ÅPNES!

**ADVARSEL:** For å redusere risikoen for elektrisk støt må ikke dekslet fjernes. Det finnes ingen deler på innsiden som brukeren kan justere. Overlat servicearbeidet til kvalifisert servicepersonell.

**ADVARSEL:** For å hindre elektrisk støt eller brannfare må ikke dette apparatet utsettes for regn eller fuktighet, og gjenstander fylt med væske, som en vase, må ikke settes på apparatet. Før du tar apparatet i bruk må du lese bruksanvisningen for ytterligere advarsler.



**Beskyttende jordingsterminal.** Apparatet må kobles til en elektrisk kontakt med et støpsel som har skjermet jordkontakt.

Apparatet må tilkoples jordet stikkontakt.



Bedoeld om de gebruiker te attenderen op de aanwezigheid van ongeïsoleerde "gevaarlijke spanning" binnen de behuizing van het product dat van voldoende omvang kan zijn om een risico op elektrische schokken te vormen.



Bedoeld om de gebruiker te attenderen op de aanwezigheid van belangrijke gebruiks- en onderhoudsinstructies in de literatuur bij het product.

**OPGELET:** Risico op een elektrische schok - NIET OPENEN

**OPGELET:** Om het risico op elektrische schokken te verkleinen, verwijder niet het deksel. Er zijn geen voor de gebruiker bruikbare onderdelen binnenin aanwezig. Verwijs onderhoud door naar gekwalificeerd onderhoudspersoneel.

**WAARSCHUWING:** Om elektrische schokken of brandgevaar te voorkomen, stel dit apparaat mag niet bloot aan regen of vocht ' en voorwerpen gevuld met vloeistoffen, zoals vazen mogen niet op dit apparaat worden geplaatst. Lees de gebruiksaanwijzingen voor nadere waarschuwingen voordat u dit apparaat gebruikt.



**Beschermende aardklem.** Het apparaat dient te worden aangesloten op een stopcontact met een beschermend aardcontact.



Atto ad avvisare l'utente in merito alla presenza "voltaggio pericoloso" non isolato all'interno della scatola del prodotto che potrebbe avere una magnitudo sufficiente a costituire un rischio di scossa elettrica per le persone.



Atto ad avvisare l'utente in merito alla presenza di istruzioni operative e di assistenza importanti (manutenzione) nel libretto che accompagna il prodotto.

**ATTENZIONE:** Rischio di scossa elettrica — NON APRIRE!

**ATTENZIONE:** per ridurre il rischio di scossa elettrica, non rimuovere il coperchio. Non vi sono parti utili all'utente all'interno. Fare riferimento a personale addetto qualificato.

**AVVERTENZA:** per prevenire il rischio di scossa o il rischio di incendio, questo apparecchio non dovrebbe essere esposto a pioggia o umidità, e oggetti riempiti con liquidi, come vasi, non dovrebbero essere posizionati sopra questo apparecchio. Prima di usare questo apparecchio, leggere la guida operativa per ulteriori informazioni.



**Morsetto di terra di protezione.** L'apparecchio deve essere collegato a una presa di corrente di rete con un conduttore di terra.



Destinado a alertar o usuário da presença de "voltagem perigosa" não isolada dentro do receptáculo do produto que pode ser de magnitude suficiente para constituir um risco de choque elétrico a pessoas.



Destinado a alertar o usuário da presença de instruções importantes de operação e manutenção (conserto) na literatura que acompanha o produto.

**CUIDADO:** Risco de choque elétrico — NÃO ABRA!

**CUIDADO:** Para evitar o risco de choque elétrico, não remova a cobertura. Contém peças não reparáveis pelo usuário. Entregue todos os consertos apenas a pessoal qualificado.

**ADVERTÊNCIA:** Para evitar choques elétricos ou perigo de incêndio, este aparelho não deve ser exposto à chuva ou umidade e objetos cheios de líquidos, tais como vasos, não devem ser colocados sobre ele. Antes de usar este aparelho, leia o guia de operação para mais advertências.



Terminal de aterramento de proteção. O aparelho deve ser ligado a uma tomada eléctrica com ligação à terra de proteção.



人体への電気ショックの危険が考えられる製品筐体内の非絶縁「危険電圧」の存在をユーザーに警告するものです。  
製品に付属している説明書に記載の重要な操作およびメンテナンス(サービス)要領の存在をユーザーに警告するものです。



注意: 電気ショックの危険あり — 開けないでください!

注意: 電気ショックの危険を低減するため、カバーを外さないでください。内部部品はユーザーによるサービス不可。資格のあるサービス要員のサービスを要請してください。

警告: 電気ショックまたは火災の危険を避けるため、この装置を雨または湿気にさらしてはなりません。また、過敏など液体を含む物をこの装置上に置いてはなりません。この装置を使用する前に、警告事項について操作ガイドをお読みください。



保護接地端子。装置は保護接地に接続している電源コンセントに接続する必要があります



三角形内帶有箭头闪电状符号意在敬告用户，表明产品内部有非绝缘的“危险电压”存在，而且具有足以致人触电的危险。



三角形内的感叹号意在警告用户，表明与机器的操作和维护（维修）有关的重要说明。

警告：触电危险—勿打开！

警告：为了避免触电危险，请勿打开机壳。机内无用户可以维修的部件。需要维修时，请与指定的专业维修人员联系。

警告：为了避免触电或火灾危险，请勿将本机置于雨中或潮湿之处。请勿将装满液体的物体，例如花瓶等置于本机之上。使用本机之前，请仔细阅读本操作说明书中的安全说明。



保 保护接地端子。设备应该连接到带有保护接地连接的电源插座。



제품의 케이스 내에 감전을 유발할 수 있는 절연되지 않은 "위험한 전압" 이 존재함을 사용자에게 알립니다. 제품과 함께 제공되는 인쇄물에 중요



한 작동 및 유지 보수 (서비스) 지침이 있음을 사용자에게 알립니다.

**주의:** 감전 위험 — 열지 마십시오!

**주의:** 감전 위험을 낮추기 위해 덮개를 제거하지 마십시오. 장치 내부에는 사용자가 직접 수리할 수 있는 부품이 없습니다. 자격을 갖춘 서비스 요원에게 서비스를 의뢰하십시오.

**경고:** 감전 또는 화재 위험을 예방하기 위해 본 기기를 비 또는 습기에 노출하거나 꽃병과 같이 액체가 들어 있는 물체를 본 기기 위에 올려놓지 마십시오. 본 기기를 사용하기 전에 추가 경고 사항에 대한 작동 설명서를 읽어 주십시오.



보호 접지 단자. 장치는 보호 접지 연결 전원 소켓 콘센트에 연결되어야

تشير لتنبيه المستخدم لوجود "تيارات كهربية خطيرة" غير معزولة داخل محتويات المنتج والتي قد تكون كافية لتسبب في تعرض الأشخاص لصدمة كهربية.



تشير لتنبيه المستخدم لوجود تعليمات تشغيل وصيانة (صيانة) مهمة داخل الكتيب المرفق مع هذا المنتج.



تحذير: خطر التعرض لصدمة كهربية - لا تفتح!

تحذير: لتقليل مخاطر التعرض لصدمة كهربية، لا تقم بإزالة الغطاء. لا توجد أجزاء قابلة للاستعمال للمستخدم بالداخل. ارجع إلى الصيانة للحصول على خدمة من الموظفين المؤهلين.


تحذير: لمنع حدوث صدمة كهربية أو مخاطر حريق، لا يجب تعريض هذا الجهاز للمطر أو الرطوبة، ولا يجب وضع الأشياء المملوءة بالسوائل، مثل الزهرجات، فوقه. قبل استخدام هذا الجهاز، اقرأ دليل التشغيل لمزيد من التحذيرات.

تدقيقاً وضرياً لتلا لاصتا عم يى أبرهكلل رايتلا نذأم نذفم ىلا زاهجلا الصرتم نولنت نأ بجي .تئىأقولا تئىضراً قطحم



## IMPORTANT SAFETY INSTRUCTIONS

**WARNING:** When using electrical products, basic cautions should always be followed, including the following:

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. Clean only with a dry cloth.
7. Do not block any of the ventilation openings. Install in accordance with manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or third prong is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched, particularly at plugs, convenience receptacles, and the point they exit from the apparatus.
11. Only use attachments/accessories provided by the manufacturer.
12.  Use only with a cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
13. Unplug this apparatus during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
15. Never break off the ground pin. Write for our free booklet "Shock Hazard and Grounding." Connect only to a power supply of the type marked on the unit adjacent to the power supply cord.
16. If this product is to be mounted in an equipment rack, rear support should be provided.
17. Note for UK only: If the colors of the wires in the mains lead of this unit do not correspond with the terminals in your plug, proceed as follows: a) The wire that is colored green and yellow must be connected to the terminal that is marked by the letter E, the earth symbol, colored green or colored green and yellow. b) The wire that is colored blue must be connected to the terminal that is marked with the letter N or the color black. c) The wire that is colored brown must be connected to the terminal that is marked with the letter L or the color red.
18. This electrical apparatus should not be exposed to dripping or splashing and care should be taken not to place objects containing liquids, such as vases, upon the apparatus.
19. The on/off switch in this unit does not break both sides of the primary mains. Hazardous energy can be present inside the chassis when the on/off switch is in the off position. The mains plug or appliance coupler is used as the disconnect device, the disconnect device shall remain readily operable.
20. Exposure to extremely high noise levels may cause a permanent hearing loss. Individuals vary considerably in susceptibility to noise-induced hearing loss, but nearly everyone will lose some hearing if exposed to sufficiently intense noise for a sufficient time. The U.S. Government's Occupational Safety and Health Administration (OSHA) has specified the following permissible noise level exposures:

Duration Per Day In Hours	Sound Level dBA, Slow Response
8	90
6	92
4	95
3	97
2	100
1 1/2	102
1	105
1/2	110
1/4 or less	115


According to OSHA, any exposure in excess of the above permissible limits could result in some hearing loss. Earplugs or protectors to the ear canals or over the ears must be worn when operating this amplification system in order to prevent a permanent hearing loss, if exposure is in excess of the limits as set forth above. To ensure against potentially dangerous exposure to high sound pressure levels, it is recommended that all persons exposed to equipment capable of producing high sound pressure levels such as this amplification system be protected by hearing protectors while this unit is in operation.

**SAVE THESE INSTRUCTIONS!**



## INSTRUCCIONES IMPORTANTES PARA SU SEGURIDAD

**CUIDADO:** Cuando use productos electrónicos, debe tomar precauciones básicas, incluyendo las siguientes:

1. Lea estas instrucciones.
2. Guarde estas instrucciones.
3. Haga caso de todos los consejos.
4. Siga todas las instrucciones.
5. No usar este aparato cerca del agua.
6. Limpiar solamente con una tela seca.
7. No bloquear ninguna de las salidas de ventilación. Instalar de acuerdo a las instrucciones del fabricante.
8. No instalar cerca de ninguna fuente de calor como radiadores, estufas, hornos u otros aparatos (incluyendo amplificadores) que produzcan calor.
9. No retire la patilla protectora del enchufe polarizado o de tipo "a Tierra". Un enchufe polarizado tiene dos puntas, una de ellas más ancha que la otra. Un enchufe de tipo "a Tierra" tiene dos puntas y una tercera "a Tierra". La punta ancha (la tercera) se proporciona para su seguridad. Si el enchufe proporcionado no encaja en su enchufe de red, consulte a un electricista para que reemplace su enchufe obsoleto.
10. Proteja el cable de alimentación para que no sea pisado o pinchado, particularmente en los enchufes, huecos, y los puntos que salen del aparato.
11. Usar solamente añadidos/accesorios proporcionados por el fabricante.
12.  Usar solamente un carro, pie, trípode, o soporte especificado por el fabricante, o vendido junto al aparato. Cuando se use un carro, tenga cuidado al mover el conjunto carro/aparato para evitar que se dañe en un vuelco. No suspenda esta caja de ninguna manera.
13. Desenchufe este aparato durante tormentas o cuando no sea usado durante largos periodos de tiempo.
14. Para cualquier reparación, acuda a personal de servicio cualificado. Se requieren reparaciones cuando el aparato ha sido dañado de alguna manera, como cuando el cable de alimentación o el enchufe se han dañado, algún líquido ha sido derramado o algún objeto ha caído dentro del aparato, el aparato ha sido expuesto a la lluvia o la humedad, no funciona de manera normal, o ha sufrido una caída.
15. Nunca retire la patilla de Tierra. Escribanos para obtener nuestro folleto gratuito "Shock Hazard and Grounding" ("Peligro de Electrocutación y Toma a Tierra"). Conecte el aparato sólo a una fuente de alimentación del tipo marcado al lado del cable de alimentación.
16. Si este producto va a ser enracado con más equipo, use algún tipo de apoyo trasero.
17. Nota para el Reino Unido solamente: Si los colores de los cables en el enchufe principal de esta unidad no corresponden con los terminales en su enchufe, proceda de la siguiente manera: a) El cable de color verde y amarillo debe ser conectado al terminal que está marcado con la letra E, el símbolo de Tierra (earth), coloreado en verde o en verde y amarillo. b) El cable coloreado en azul debe ser conectado al terminal que está marcado con la letra N o el color negro. c) El cable coloreado en marrón debe ser conectado al terminal que está marcado con la letra L o el color rojo.
18. Este aparato eléctrico no debe ser sometido a ningún tipo de goteo o salpicadura y se debe tener cuidado para no poner objetos que contengan líquidos, como vasos, sobre el aparato.
19. El interruptor de en/lejos en esta unidad no rompe ambos lados de la red primaria. La energía peligrosa puede ser presente dentro del chasis cuando el interruptor de en/lejos está en el de la posición. El tapón de la red o el acoplador del aparato son utilizados como el desconecta dispositivo, el desconecta dispositivo se quedará fácilmente operable.
20. La exposición a altos niveles de ruido puede causar una pérdida permanente en la audición. La susceptibilidad a la pérdida de audición provocada por el ruido varía según la persona, pero casi todo el mundo perderá algo de audición si se expone a un nivel de ruido suficientemente intenso durante un tiempo determinado. El Departamento para la Salud y para la Seguridad del Gobierno de los Estados Unidos (OSHA) ha especificado las siguientes exposiciones al ruido permisibles:



Duración por Día en Horas	Nivel de Sonido dBA, Respuesta Lenta
8	90
6	92
4	95
3	97
2	100
1 ½	102
1	105
½	110
¼ o menos	115


De acuerdo al OSHA, cualquier exposición que exceda los límites arriba indicados puede producir algún tipo de pérdida en la audición. Protectores para los canales auditivos o taponos para los oídos deben ser usados cuando se opere con este sistema de sonido para prevenir una pérdida permanente en la audición, si la exposición excede los límites indicados más arriba. Para protegerse de una exposición a altos niveles de sonido potencialmente peligrosa, se recomienda que todas las personas expuestas a equipamiento capaz de producir altos niveles de presión sonora, tales como este sistema de amplificación, se encuentren protegidas por protectores auditivos mientras esta unidad esté operando.

**GUARDE ESTAS INSTRUCCIONES!**

## INSTRUCTIONS IMPORTANTES DE SECURITE

**ATTENTION:** L'utilisation de tout appareil électrique doit être soumise aux précautions d'usage incluant:



1. Lire ces instructions.
2. Gardez ce manuel pour de futures références.
3. Prêtez attention aux messages de précautions de ce manuel.
4. Suivez ces instructions.
5. N'utilisez pas cette unité proche de plans d'eau.
6. N'utilisez qu'un tissu sec pour le nettoyage de votre unité.
7. N'obstruez pas les systèmes de refroidissement de votre unité et installez votre unité en fonction des instructions de ce manuel.
8. Ne positionnez pas votre unité à proximité de toute source de chaleur.
9. Connectez toujours votre unité sur une alimentation munie de prise de terre utilisant le cordon d'alimentation fourni.
10. Protégez les connecteurs de votre unité et positionnez les cablages pour éviter toutes déconnexions accidentelles.
11. N'utilisez que des fixations approuvées par le fabricant.
12.  Lors de l'utilisation sur pied ou pole de support, assurez dans le cas de déplacement de l'ensemble enceinte/support de prévenir tout basculement intempestif de celui-ci.
13. Il est conseillé de déconnecter du secteur votre unité en cas d'orage ou de durée prolongée sans utilisation.
14. Seul un technicien agréé par le fabricant est à même de réparer/contrôler votre unité. Celle-ci doit être contrôlée si elle a subi des dommages de manipulation, d'utilisation ou de stockage (humidité,...).
15. Ne déconnectez jamais la prise de terre de votre unité.
16. Si votre unité est destinée à être montée en rack, des supports arrière doivent être utilisés.
17. Note pour les Royaumes-Unis: Si les couleurs de connecteurs du câble d'alimentation ne correspond pas au guide de la prise secteur, procédez comme suit: a) Le connecteur vert et jaune doit être connecter au terminal noté E, indiquant la prise de terre ou correspondant aux couleurs verte ou verte et jaune du guide. b) Le connecteur Bleu doit être connecter au terminal noté N, correspondant à la couleur noire du guide. c) Le connecteur marron doit être connecter au terminal noté L, correspondant à la couleur rouge du guide.
18. Cet équipement électrique ne doit en aucun cas être en contact avec un quelconque liquide et aucun objet contenant un liquide, vase ou autre ne devrait être posé sur celui-ci. 1
9. L'interrupter (on-off) dans cette unité ne casse pas les deux côtés du primaire principal. L'énergie hasardeuse peut être présente dans châssis quand l'interrupter (on-off) est dans le de la position. Le bouchon principal ou atelage d'appareil est utilisé comme le débrancher l'appareil restera facilement opérable.
20. Une exposition à de hauts niveaux sonores peut conduire à des dommages de l'écoute irréversibles. La susceptibilité au bruit varie considérablement d'un individu à l'autre, mais une large majorité de la population expérimentera une perte de l'écoute après une exposition à une forte puissance sonore pour une durée prolongée. L'organisme de la santé américaine (OSHA) a produit le guide ci-dessous en rapport à la perte occasionnée:

Durée par Jour (heures)	Niveau sonore moyen (dBA)
8	90
6	92
4	95
3	97
2	100
1 1/2	102
1	105
1/2	110
1/4 ou inférieur	115


D'après les études menées par le OSHA, toute exposition au delà des limites décrites ce-dessus entrainera des pertes de l'écoute chez la plupart des sujets. Le port de système de protection (casque, oreillette de filtrage,...) doit être observé lors de l'opération cette unité ou des dommages irréversibles peuvent être occasionnés. Le port de ces systèmes doit être observé par toutes personnes susceptibles d'être exposées à des conditions au delà des limites décrites ci-dessus.

**GARDEZ CES INSTRUCTIONS!**



## WICHTIGE SICHERHEITSHINWEISE

**SICHERHEITSHINWEISEACHTUNG:** Beim Einsatz von Elektrogeräten müssen u.a. grundlegende Vorsichtsmaßnahmen befolgt werden:

1. Lesen Sie sich diese Anweisungen durch.
2. Bewahren Sie diese Anweisungen auf.
3. Beachten Sie alle Warnungen.
4. Befolgen Sie alle Anweisungen.
5. Setzen Sie dieses Gerät nicht in der Nähe von Wasser ein.
6. Reinigen Sie es nur mit einem trockenen Tuch.
7. Blockieren Sie keine der Lüftungsöffnungen. Führen Sie die Installation gemäß den Anweisungen des Herstellers durch.
8. Installieren Sie das Gerät nicht neben Wärmequellen wie Heizungen, Heizgeräten, Öfen oder anderen Geräten (auch Verstärkern), die Wärme erzeugen.
9. Beeinträchtigen Sie nicht die Sicherheitswirkung des gepolten Steckers bzw. des Erdungssteckers. Ein gepolter Stecker weist zwei Stifte auf, von denen einer breiter ist als der andere. Ein Erdungsstecker weist zwei Stifte und einen dritten Erdungsstift auf. Der breite Stift bzw. der dritte Stift dient Ihrer Sicherheit. Sollte der beiliegende Stecker nicht in Ihre Steckdose passen, wenden Sie sich bitte an einen Elektriker, um die ungeeignete Steckdose austauschen zu lassen.
10. Schützen Sie das Netzkabel, sodass niemand darauf tritt oder es geknickt wird, insbesondere an Steckern oder Buchsen und ihren Austrittsstellen aus dem Gerät.
11. Verwenden Sie nur die vom Hersteller erhältlichen Zubehörgeräte oder Zubehörteile.
12.  Verwenden Sie nur einen Wagen, Stativ, Dreifuß, Träger oder Tisch, der den Angaben des Herstellers entspricht oder zusammen mit dem Gerät verkauft wurde. Wird ein Wagen verwendet, bewegen Sie den Wagen mit dem darauf befindlichen Gerät besonders vorsichtig, damit er nicht umkippt und möglicherweise jemand verletzt wird.
13. Trennen Sie das Gerät während eines Gewitters oder während längerer Zeiträume, in denen es nicht benutzt wird, von der Stromversorgung.
14. Lassen Sie sämtliche Wartungsarbeiten von qualifizierten Kundendiensttechnikern durchführen. Eine Wartung ist erforderlich, wenn das Gerät in irgendeiner Art beschädigt wurde, etwa wenn das Netzkabel oder der Netzstecker beschädigt wurden, Flüssigkeit oder Gegenstände in das Gerät gelangt sind, das Gerät Regen oder Feuchtigkeit ausgesetzt wurde, nicht normal arbeitet oder heruntergefallen ist.
15. Der Erdungsstift darf nie entfernt werden. Auf Wunsch senden wir Ihnen gerne unsere kostenlose Broschüre „Shock Hazard and Grounding“ (Gefahr durch elektrischen Schlag und Erdung) zu. Schließen Sie nur an die Stromversorgung der Art an, die am Gerät neben dem Netzkabel angegeben ist.
16. Wenn dieses Produkt in ein Geräte-Rack eingebaut werden soll, muss eine Versorgung über die Rückseite eingerichtet werden.
17. Hinweis – Nur für Großbritannien: Sollte die Farbe der Drähte in der Netzleitung dieses Geräts nicht mit den Klemmen in Ihrem Stecker übereinstimmen, gehen Sie folgendermaßen vor: a) Der grün-gelbe Draht muss an die mit E (Symbol für Erde) markierte bzw. grüne oder grün-gelbe Klemme angeschlossen werden. b) Der blaue Draht muss an die mit N markierte bzw. schwarze Klemme angeschlossen werden. c) Der braune Draht muss an die mit L markierte bzw. rote Klemme angeschlossen werden.
18. Dieses Gerät darf nicht ungeschützt Wassertropfen und Wasserspritzern ausgesetzt werden und es muss darauf geachtet werden, dass keine mit Flüssigkeiten gefüllte Gegenstände, wie z. B. Blumenvasen, auf dem Gerät abgestellt werden.
19. Der Netzschalter in dieser Einheit bricht beide Seiten von den primären Hauptleitungen nicht. Gefährliche Energie kann anwesend innerhalb des Chassis sein, wenn der Netzschalter im ab Position ist. Die Hauptleitungen stöpseln zu oder Gerätekupplung ist benutzt, während das Vorrichtung abschaltet, das schaltet Vorrichtung wird bleiben sogleich hantierbar ab.
20. Belastung durch extrem hohe Lärmpegel kann zu dauerhaftem Gehörverlust führen. Die Anfälligkeit für durch Lärm bedingten Gehörverlust ist von Mensch zu Mensch verschieden, das Gehör wird jedoch bei jedem in gewissem Maße geschädigt, der über einen bestimmten Zeitraum ausreichend starkem Lärm ausgesetzt ist. Die US-Arbeitsschutzbehörde (Occupational and Health Administration, OSHA) hat die folgenden zulässigen Pegel für Lärmbelastung festgelegt:



Dauer pro Tag in Stunden	Geräuschpegel dBA, langsame Reaktion
8	90
6	92
4	95
3	97
2	100
1 1/2	102
1	105
1/2	110
1/4 oder weniger	115


Laut OSHA kann jede Belastung über den obenstehenden zulässigen Grenzwerten zu einem gewissen Gehörverlust führen. Sollte die Belastung die obenstehenden Grenzwerte übersteigen, müssen beim Betrieb dieses Verstärkungssystems Ohrenstopfen oder Schutzvorrichtungen im Gehörgang oder über den Ohren getragen werden, um einen dauerhaften Gehörverlust zu verhindern. Um sich vor einer möglicherweise gefährlichen Belastung durch hohe Schalldruckpegel zu schützen, wird allen Personen empfohlen, die mit Geräten arbeiten, die wie dieses Verstärkungssystem hohe Schalldruckpegel erzeugen können, beim Betrieb dieses Geräts einen Gehörschutz zu tragen.

**BEWAHREN SIE DIESE SICHERHEITSHINWEISE AUF!**



## TÄRKEÄT TURVALLISUUSOHJEET

**VAARA:** Käytettäessä sähkölaitteita tulee aina huomioida mm. seuraavat turvallisuusohjeet:

1. Lue nämä ohjeet.
2. Säilytä nämä ohjeet.
3. Huomioi kaikki varoitukset.
4. Noudata kaikkia ohjeita.
5. Älä käytä laitetta veden lähellä.
6. Puhdista vain kuivalla kankaalla.
7. Älä tuki mitään tuuletusaukkoja. Asenna valmistajan ohjeiden mukaisesti.
8. Älä asenna lämpölähteiden, kuten pattereiden, liesien tai muiden lämpöä tuottavien laitteiden (kuten vahvistinten) lähelle.
9. Älä poista polarisoidun tai maadoitustyyppisen tulpan suojausta. Polaroidun tulpan toinen napa on leveämpi kuin toinen. Maadoitustulpassa on kaksi napaa ja kolmas maadoitusnapa. Leveä napa ja maadoitusnapa on tarkoitettu turvaamaan laitteen käyttöä. Jos mukana toimitettu tulppa ei sovi pistorasiaan, kutsu sähkömies vaihtamaan pistorasia, sillä se on vanhentunut.
10. Suojaa virtajohtoa päälle kävelemiseltä ja nipistyksestä, erityisesti pistotulppien, pistorasioiden sekä laitteen ulosvientien kohdalla.
11. Käytä vain valmistajan toimittamia lisälaitteita.
12.  Käytä vain valmistajan määrittämän tai laitteen mukana myydyin vaunun, jalustan, kolmijalan, kiinnikkeen tai pöydän kanssa. Käytettäessä vaunua liikuta vaunun ja laitteen yhdistelmää varovasti, jotta vältetään loukkaantumiset kaatumisesta johtuen.
13. Irrota laite sähköverkosta ukkosmyrskyjen aikana tai jos laitetta ei käytetä pitkään aikaan.
14. Huoltaminen tulee jättää pätevän huoltohenkilöstön tehtäväksi. Huoltoa tarvitaan, kun laite on jollakin tavoin vioittunut, esim. virtalähteen johto tai pistoke on vioittunut, laitteen sisään on joutunut nestettä tai esineitä, laite on altistettu sateelle tai kosteudelle, laite ei toimi normaalisti tai se on pudonnut.
15. Älä koskaan katkaise maadoitusnastaa. Ottamalla meihin yhteyttä saat kirjasen "Sähköiskuvaara ja maadoitus". Kytke vain virtalähteeseen, joka vastaa laitteen virtajohdon viereen merkittyä tyyppiä.
16. Jos laite kiinnitetään laiteräkkiin, tulee se tukea takaosastaan.
17. Note for UK only: If the colors of the wires in the mains lead of this unit do not correspond with the terminals in your plug, proceed as follows:
  - a) The wire that is colored green and yellow must be connected to the terminal that is marked by the letter E, the earth symbol, colored green or colored green and yellow.
  - b) The wire that is colored blue must be connected to the terminal that is marked with the letter N or the color black.
  - c) The wire that is colored brown must be connected to the terminal that is marked with the letter L or the color red.
18. Tätä sähkölaitetta ei tule altistaa nestetipoille tai roiskeille, eikä laitteen päälle saa asettaa nestettä sisältäviä esineitä, kuten maljakoita.
19. Laitteen virtakytkin ei katkaise ensiövirran molempia puolia. Laitteen sisällä voi olla vaarallinen jännite, kun virtakytkin on pois-asennossa. Virtajohto toimii pääkytkimenä, ja sen pitää olla aina käytettävissä.
20. Altistus erittäin korkeille äänitasoille voi aiheuttaa pysyvän kuulovaurion. Henkilöiden altitus melun aiheuttamille kuulovaurioille vaihtelee, mutta lähes kaikkien kuulo vaurioituu altistuttaessa riittävän kovalle melulle riittävän kauan. Yhdysvaltain hallituksen työturvallisuus- ja terveyshallinto (OSHA) on määrittänyt seuraavat hyväksyttävät melutasoaltistukset:




Kesto päivää kohti tunteina	Äänitaso dBA, hidas vaste
8	90
6	92
4	95
3	97
2	100
1 1/2	102
1	105
1/2	110
1/4 tai alle	115

OSHA:n mukaan altistus yo. tasoja korkeammalle määrälle voi aiheuttaa osittaisen kuulon menetyksen. Käytettäessä vahvistinjärjestelmää tulee kuulovaurioiden estämiseksi käyttää korvatulppia tai kuulosuojaimia, mikäli altistus ylittää yllä asetetut rajat. Jotta vältetään mahdollisesti vaarallinen altistus korkeille äänenpaineen tasolle, suositellaan, että kaikki korkeaa äänenpainetta tuottavien laitteiden, kuten tämän vahvistimen, lähistöllä olevat henkilöt suojaavat kuulonsa, kun laite on käytössä.

**SÄILYTÄ NÄMÄ OHJEET!**

## VIKTIGA SÄKERHETSINSTRUKTIONER

**WARNING:** När du använder elektriska produkter ska grundläggande försiktighetsåtgärder iakttas, inklusive följande:

1. Läs dessa instruktioner.
2. Behåll dessa instruktioner.
3. Iakttag alla varningar.
4. Följ alla instruktioner.
5. Använd inte apparaten i närheten av vatten.
6. Rengör endast med en torr trasa.
7. Blockera inte ventilationsöppningarna. Installera i enlighet med tillverkarens instruktioner.
8. Installera inte i närheten av värmekällor som radiatorer, varmluftsventiler, spisar eller andra apparater (inklusive förstärkare) som ger ifrån sig värme.
9. Motverka inte säkerhetsfunktionen hos en jordad stickkontakt. En jordad stickkontakt har två stift och metallbleck på sidorna. Metallblecket finns där för din säkerhet. Kontakta en elektriker för utbyte av det föråldrade vägguttaget om den medföljande stickkontakten inte passar i ditt vägguttag.
10. Skydda strömsladden från att klivas på eller klämmas, särskilt vid kontakten, grenuttag och platsen där den lämnar apparaten.
11. Använd enbart tillsatser/tillbehör som tillhandahålls av tillverkaren.
12.  Använd endast med en kärra, ställ, trefot, fäste eller bord i enlighet med tillverkarens specifikationer, eller som säljs tillsammans med apparaten. Var försiktig när du använder en kärra så att inga personskador uppstår på grund av att kombinationen kärra-apparat välter när den flyttas.
13. Koppla ur apparaten vid åskväder eller när den inte används under en längre tid.
14. Låt kvalificerad servicepersonal sköta all service. Service krävs om apparaten har skadats på något vis, till exempel om strömsladden eller stickkontakten har skadats, vätska har spillts eller föremål har fallit ner i apparaten, apparaten har utsatts för regn eller fukt, inte fungerar normalt eller har tappats.
15. Anslut aldrig till ojordade uttag. Skriv till oss för vårt gratishäfte "Stötrisk och jordning". Anslut endast till en strömkälla av samma typ som enhetens märkning anger (bredvid strömsladden).
16. Om produkten ska monteras i ett utrustningsrack bör bakre stöd användas.
17. Note for UK only: If the colors of the wires in the mains lead of this unit do not correspond with the terminals in your plug, proceed as follows:
  - a) The wire that is colored green and yellow must be connected to the terminal that is marked by the letter E, the earth symbol, colored green or colored green and yellow.
  - b) The wire that is colored blue must be connected to the terminal that is marked with the letter N or the color black.
  - c) The wire that is colored brown must be connected to the terminal that is marked with the letter L or the color red.
18. Denna elektriska apparat bör inte utsättas för dropp eller stänk och försiktighet bör iakttas så att inte föremål som innehåller vätskor, såsom vaser, placeras ovanpå apparaten.
19. Enhetens strömbrytare bryter inte båda sidor av strömkretsen. Farlig energi kan förekomma inuti höljet när strömbrytaren är i av-läget. Stickkontakten eller apparatkontakten fungerar som bortkopplingsenhet, bortkopplingsenheten ska hållas lättillgänglig.
20. Extremt höga ljudnivåer kan orsaka permanent hörselskada. Olika personer skiljer sig åt i benägenhet att få hörselskador av oljud, men i princip alla får hörselskador om de utsätts för tillräckligt höga ljud under tillräcklig tid. Den amerikanska regeringens arbetsskydds- och hälsoförvaltning (OSHA) har angivit följande maxnivåer för tillåten exponering för oljud:




Längd per dag i timmar	Ljudnivå dBA, långsam svarstid
8	90
6	92
4	95
3	97
2	100
1 1/2	102
1	105
1/2	110
1/4 eller mindre	115

Enligt OSHA kan exponering utöver ovanstående tillåtna gränser orsaka hörselskador. Öronproppar eller skydd för hörselgången eller över öronen måste bäras när detta förstärkarsystem används för att förebygga permanenta hörselskador, om exponeringen överskrider gränsvärdena enligt ovan. För att skydda mot potentiellt farlig exponering för höga ljudtrycksnivåer rekommenderas det att personer som exponeras för utrustning som kan producera höga ljudtrycksnivåer såsom detta förstärkarsystem skyddas med hörselskydd när enheten är i drift.

**SPARA DESSA INSTRUKTIONER!**

## VIKTIGE SIKKERHETSINSTRUKSJONER

**ADVARSEL:** Ved bruk av et elektrisk apparat må grunnleggende forsiktighetsregler følges, inklusive de følgende:

1. Les disse instruksjonene.
2. Ta vare på disse instruksjonene.
3. Følg alle advarslene.
4. Følg alle instruksjoner.
5. Ikke bruk apparatet i nærheten av vann.
6. Rengjør bare med en tørr klut.
7. Ikke blokker noen av ventilasjonsåpningene. Installer i henhold til produsentens instruksjoner.
8. Ikke installer i nærheten av en varmekilde som radiatorer, varmekanaler, ovn er eller andre apparater (inklusive forsterkere) som utvikler varme.
9. Ikke reduserer sikkerhetshensiktene med polariserte eller jordede støpsler. Et polarisert støpsel har to blader, der det ene er bredere enn det andre. Et støpsel med jording har to blader og en tredje jordingsplugg. Det brede bladet eller den tredje pluggen er der for å gi deg beskyttelse. Hvis det medfølgende støpslet ikke passer inn i den elektriske kontakten der du bor, kontakt en elektriker for å få støpslet skiftet.
10. Beskytt den elektriske ledningen mot å bli trådt på eller klemt, spesielt ved støpslet, stikkkontakten og punktet der den kommer ut av apparatet.
11. Bruk bare tilkoblinger/tilbehør som er levert av produsenten.
12.  Bruk bare med vogn, stativ, tripod, brakett eller bord spesifisert av produsenten eller solgt sammen med apparatet. Når det benyttes en vogn, vis forsiktighet når vogn/apparat flyttes for å unngå skade som følge av et felt.
13. Trekk ut ledningen til apparatet under tordenvær eller når det skal stå ubrukt over en lengre periode.
14. Overlat servicearbeidet til kvalifisert servicepersonell. Service er påkrevet når apparatet har vært utsatt for skade, som at den elektriske ledningen eller støpslet er skadet, væske er blitt sølt over apparatet eller en gjenstand har falt ned i apparatet, apparatet har vært utsatt for regn eller fuktighet, at det ikke virker normalt eller har falt i gulvet.
15. Bryt aldri av jordingspinnen. Skriv etter gratis hefte "Shock Hazard and Grounding" (Fare for elektrisk støt og jording). Tilkoble bare elektriske anlegg av den typen som er angitt på enheten ved siden av den elektriske ledningen.
16. Hvis dette produktet skal plasseres i en utstyrsreol må det etableres støtte på baksiden.
17. Note for UK only: If the colors of the wires in the mains lead of this unit do not correspond with the terminals in your plug, proceed as follows: a) The wire that is colored green and yellow must be connected to the terminal that is marked by the letter E, the earth symbol, colored green or colored green and yellow. b) The wire that is colored blue must be connected to the terminal that is marked with the letter N or the color black. c) The wire that is colored brown must be connected to the terminal that is marked with the letter L or the color red.
18. Dette elektriske apparatet må ikke utsettes for drypp eller sprut fra væske, og det må utvises forsiktighet slik at det ikke plasseres gjenstander fylt med vann - som en vase - på apparatet.
19. På/av-bryteren på denne enheten bryter ikke begge sider av den primære strømkretsen. Farlig strøm kan finnes på innsiden av chassiset også når På/Av-bryteren er i posisjon Av. Det elektriske støpslet eller utstyrskoblingen brukes som frakoblingsutstyr, frakoblingsutstyret skal være lett å komme til og bruke.
20. Eksponering mot ekstremt høyt støynivå kan føre til permanent tap av hørsel. Det er betydelige individuelle forskjeller hva gjelder den enkeltes ømfintlighet hva gjelder støypåført tap av hørsel, men nesten alle vil tape noe hørsel dersom de utsettes for tilstrekkelig intens støy over en tilstrekkelig lang periode. U.S. Governments Occupational Safety and Health Administration (OSHA) har spesifisert følgende tillatte støynivåeksponeringer:

Varighet pr. dag i timer	Lydnivå dBA, sakte respons
8	90
6	92
4	95
3	97
2	100
1 1/2	102
1	105
1/2	110
1/4 eller mindre	115


I henhold til OSHA vil enhver eksponering ut over de ovenstående tillatte grensene kunne føre til noe tap av hørsel. Ørepropper eller beskyttelse av ørekanalene eller over ørene må anvendes når dette forsterkersystemet brukes for å hindre permanent tap av hørsel dersom eksponeringen overskrider grensene som vises ovenfor. For å beskytte mot potensielt farlig eksponering til høyt lydtryknivåer anbefales det at alle personer som eksponeres mot utstyr som er i stand til å produsere høye lydtryknivåer som dette forsterkersystemet må beskyttes av hørselsvern mens denne enheten er i bruk.

**OPPBEVAR DISSE INSTRUKSJONENE**



## BELANGRIJKE VEILIGHEIDSINSTRUCTIES

**WAARSCHUWING:** Bij gebruik van elektrische producten, moeten elementaire voorzorgsmaatregelen altijd worden opgevolgd, waaronder het volgende:

1. Lees deze gebruiksaanwijzing.
2. Bewaar deze gebruiksaanwijzing.
3. Besteed aandacht aan alle waarschuwingen.
4. Volg alle instructies op.
5. Gebruik dit apparaat niet in de buurt van water.
6. Reinig het alleen met een droge doek.
7. Blokkeer geen ventilatieopeningen. Installeer volgens de instructies van de fabrikant.
8. Installeer niet in de buurt van warmtebronnen zoals radiatoren, kachels, ovens of andere apparaten (inclusief versterkers) die warmte produceren.
9. Omzeil nooit de veiligheidsvoorziening van de gepolariseerde of geaarde stekker. Een gepolariseerde stekker heeft twee bladen, waarvan er één breder is dan de andere. Een geaarde stekker heeft twee bladen en een derde aardingspen. Het bredere blad of de derde pen is bedoeld voor uw veiligheid. Mocht de geleverde stekker niet in uw stopcontact passen, raadpleeg dan een elektricien voor het vervangen van het verouderde stopcontact.
10. Bescherm het netsnoer zodat er niet over gelopen kan worden of bekneld kan raken, vooral bij stekkers, stopcontacten en het punt waar ze het apparaat verlaten.
11. Gebruik alleen aansluitstukken/accessoires geleverd door de fabrikant.
12.  Gebruik uitsluitend een wagentje, standaard, statief, beugel of tafel die door de fabrikant wordt aanbevolen of bij het apparaat wordt verkocht. Wanneer u een wagentje gebruikt, wees dan voorzichtig bij het verplaatsen van de combinatie wagen/apparaat en voorkom letsel door omvallen.
13. Haal de stekker van dit apparaat uit het stopcontact tijdens bliksem of wanneer het apparaat gedurende lange perioden niet gebruikt wordt.
14. Laat al het onderhoud uitvoeren door gekwalificeerd onderhoudspersoneel. Onderhoud is nodig wanneer het apparaat op enige wijze beschadigd is, zoals het netsnoer of de stekker is beschadigd, er vloeistof in het apparaat is gemorst of voorwerpen in zijn terechtgekomen, het apparaat aan regen of vocht is blootgesteld, niet normaal werkt, of is gevallen.
15. Breek nooit de aardingspen af. Raadpleeg ons gratis boekje "Schokgevaar en aarding". Sluit alleen op een voedingsspanning aan van het type aangegeven op het apparaat naast het netsnoer.
16. Als dit product in een apparatuurrek gemonteerd moet worden, moet voor achterondersteuning worden verzorgd.
17. Note for UK only: If the colors of the wires in the mains lead of this unit do not correspond with the terminals in your plug, proceed as follows: a) The wire that is colored green and yellow must be connected to the terminal that is marked by the letter E, the earth symbol, colored green or colored green and yellow. b) The wire that is colored blue must be connected to the terminal that is marked with the letter N or the color black. c) The wire that is colored brown must be connected to the terminal that is marked with the letter L or the color red.
18. Dit elektrisch apparaat mag niet aan drui- of spatwater worden blootgesteld en er moet op gelet worden dat geen voorwerpen gevuld met vloeistoffen, zoals vazen, op het apparaat worden geplaatst.
19. De aan/uit-schakelaar van dit apparaat onderbreekt niet beide contacten van het lichtnet. Gevaarlijke spanning kan binnenin het chassis aanwezig zijn ondanks dat de aan/uit-schakelaar op uit staat. De stekker van het apparaat wordt gebruikt als onderbrekingsmechanisme, het onderbrekingsmechanisme dient eenvoudig bedienbaar te blijven.
20. Blootstelling aan extreem hoge geluidsniveaus kan permanent gehoorverlies veroorzaken. Individuen verschillen in gevoeligheid voor gehoorverlies door lawaai geïnduceerd, maar bijna iedereen zal enig gehoor verliezen indien voor een bepaalde duur aan voldoende intens lawaai blootgesteld. De Occupational Safety and Health Administration (OSHA) van de Amerikaanse regering heeft de volgende blootstellingen aan toelaatbaar lawaainiveau gespecificeerd:




Duur per dag in uren	Geluidsniveau dBA, trage reactie
8	90
6	92
4	95
3	97
2	100
1 1/2	102
1	105
1/2	110
1/4 of minder	115

Volgens OSHA, kan elke blootstelling boven de bovengenoemde toelaatbare grenswaarden tot enige gehoorverlies leiden. Oordoppen of -beschermers in de oorkanalen of over de oren moeten bij het bedienen van dit versterkersysteem worden gedragen om een permanent gehoorverlies te voorkomen, indien blootstelling boven de grenzen zoals hierboven zijn vermeld. Om potentieel gevaarlijke blootstelling aan hoge geluidsdruk te voorkomen, is het raadzaam om alle personen die aan apparatuur worden blootgesteld die in staat is om hoge geluidsdruk te produceren, zoals dit versterkersysteem, met gehoorbeschermers te beschermen wanneer dit apparaat in bedrijf is.

**BEWAAR DEZE INSTRUCTIES!**

**IMPORTANTI NORME DI SICUREZZA:**

**ATTENZIONE:** Durante uso di apparecchiature elettriche vanno osservate alcune precauzioni basilari, tra cui le seguenti:

1. Leggete queste istruzioni.
2. Conservate le istruzioni.
3. Rispettate tutte le avvertenze.
4. Seguite le istruzioni.
5. Non usate questo prodotto vicino all'acqua.
6. Pulite esclusivamente con un panno asciutto.
7. Non ostruite le fessure di ventilazione. Installate il dispositivo seguendo le istruzioni del produttore.
8. Il prodotto va collocato lontano da sorgenti di calore quali radiatori, pompe di calore, stufe o altri dispositivi che generano calore (compresi gli amplificatori).
9. Non eliminate i dispositivi di sicurezza come spine polarizzate o con messa a terra. La spina polarizzata ha due lame, una più grande dell'altra. La spina con messa a terra ha due contatti più un terzo per la terra. Il contatto più largo o terzo polo è indispensabile per la vostra sicurezza. Se la spina fornita non adatta alla vostra presa, mettetevi in contatto con un elettricista per la sostituzione della presa obsoleta.
10. Fate attenzione a non camminare o incastrare il cavo di alimentazione, soprattutto in prossimità della spina o del punto in cui si collega all'apparecchiatura.
11. Usate solo accessori originali forniti dal costruttore.
12.  L'apparato va usato esclusivamente con il supporto indicato dal produttore o venduto con l'apparato. Se intendete adoperare un carrello su ruote, fate attenzione quando spostate apparecchio e supporto per evitare che la loro caduta possa causare danni a cose o persone.
13. Scollegatelo l'apparecchio dalla presa di corrente durante un temporale con fulmini o quando non s'intende usare per un lungo periodo.
14. L'assistenza va eseguita esclusivamente da personale autorizzato. È necessario ricorrere all'assistenza se il dispositivo ha subito danni, per esempio si sono rovinati il cavo di alimentazione o la spina, all'interno è caduto del liquido o un oggetto, il dispositivo è rimasto esposto alla pioggia o all'umidità, non funziona normalmente o è caduto a terra.
15. Non rimuovete lo spinotto della terra. Collegate il dispositivo esclusivamente a una presa di corrente del tipo indicato accanto alla targhetta posta vicino al cavo di alimentazione.
16. Se questo prodotto deve essere montato a rack, è necessario sostenerlo anche nella parte posteriore.
17. Nota per UK: Se i colori dei fili nel cavo di alimentazione per questa unità non corrispondono con i terminali della vostra spina, procedere come segue: a) Il filo di colore verde/giallo deve essere collegato al terminale che marcato con lettera E, o simbolo di terra, o colore verde o verde/giallo. b) Il filo di colore blu deve essere collegato al terminale marcato con la lettera N o di colore Nero. c) Il filo di colore marrone deve essere collegato al terminale marcato con la lettera L o di colore Rosso.
18. Questo apparato elettrico non deve essere esposto a gocce o schizzi, va in ogni caso evitato di appoggiare oggetti contenenti liquidi, come bicchieri, sull'apparecchio.
19. L'interruttore on/off in questa unità non interrompe entrambi i lati della rete di alimentazione. All'interno dell'apparecchio può essere presente elettricità anche con interruttore on/off in posizione off. La spina o il cavo di alimentazione è utilizzato come sezionatore, il dispositivo di sezionamento deve restare sempre operativo.
20. L'esposizione a livelli di volume molto elevati può causare la perdita permanente dell'udito. La predisposizione alla perdita dell'udito causata da livelli elevati di volume varia notevolmente da persona a persona, ma quasi tutti subiscono una perdita di udito almeno parziale se soggetti a volume di livello elevato per un tempo sufficientemente lungo. L'ufficio Lavoro e Salute del governo degli USA (OSHA) ha elaborato la seguente tabella di tolleranza ai rumori:




Esposizione giornaliera in ore	Livello sonoro dBA, Slow response
8	90
6	92
4	95
3	97
2	100
1 1/2	102
1	110
1/4 o minore	115

Secondo l'OSHA, l'esposizione a livelli di volume al di sopra dei limiti stabiliti può causare una perdita almeno parziale dell'udito. Quando si adopera questo sistema di amplificazione, è necessario indossare auricolari o apposite protezioni per il condotto auditivo, per evitare la perdita permanente dell'udito se l'esposizione supera i limiti sopra riportati. Per evitare di esporvi al rischio di danni derivanti da elevati livelli di pressione sonora, si raccomanda di adoperare delle protezioni per gli orecchi quando si usano attrezzature in grado di produrre elevati livelli sonori, come quest'amplificatore.

**CONSERVATE QUESTE ISTRUZIONI!**

## INSTRUÇÕES IMPORTANTES DE SEGURANÇA

**ADVERTÊNCIA:** Ao usar eletrodomésticos, precauções básicas devem sempre ser seguidas, incluindo as seguintes:

1. Leia estas instruções.
2. Mantenha estas instruções.
3. Preste atenção a todas as advertências.
4. Siga todas as instruções.
5. Não use este aparelho perto d'água.
6. Limpe somente com um pano seco.
7. Não obstrua nenhuma das aberturas de ventilação. Instale de acordo com as instruções do fabricante.
8. Não instale perto de nenhuma fonte de calor tais como radiadores, registros de calor, fogões ou outros aparelhos (incluindo amplificadores) que produzam calor.
9. Não desafie o propósito de segurança do plugue polarizado ou do tipo aterrado. Um plugue polarizado tem duas lâminas com uma mais larga que a outra. Um plugue do tipo aterrado tem duas lâminas e um terceiro plugue terra. A lâmina larga ou o terceiro pino são fornecidos para sua segurança. Se o plugue disponibilizado não couber em sua tomada, consulte um electricista para troca da tomada obsoleta.
10. Proteja o cabo de energia para não ser pisado ou espremido principalmente em plugues, recipientes e o ponto de onde sai do aparelho.
11. Use apenas conexões/acessórios fornecidos pelo fabricante.
12.  Use apenas um carrinho, banquetas, tripé, suporte, ou mesa especificado pelo fabricante, ou vendido com o aparelho. Quando um carrinho for usado, tome cuidado ao mover a combinação carrinho/aparelho para evitar ferimentos por tombamento.
13. Tire esse aparelho da tomada durante tempestades de raios ou quando for ficar sem usar por longos períodos de tempo.
14. Entregue todos os consertos apenas a pessoal qualificado. O conserto é necessário quando o aparelho tiver sofrido qualquer dano, tais como o cabo de energia ou plugue estiverem danificados, líquidos tenham sido derramados ou objetos tenham caído no aparelho, o aparelho tenha sido submetido à chuva ou umidade, não funcionar normalmente, ou tenha sido deixado cair.
15. Nunca quebre fora o pino terra. Escreva pedindo nosso livreto grátis "Perigos de Choque e Aterramento." Ligue apenas a um suprimento de energia do tipo marcado na unidade adjacente ao fio de fornecimento de energia.
16. Se este produto for ser montado em uma estante para equipamentos, deve ser montado um suporte traseiro.
17. Note for UK only: If the colors of the wires in the mains lead of this unit do not correspond with the terminals in your plug, proceed as follows:
  - a) The wire that is colored green and yellow must be connected to the terminal that is marked by the letter E, the earth symbol, colored green or colored green and yellow.
  - b) The wire that is colored blue must be connected to the terminal that is marked with the letter N or the color black.
  - c) The wire that is colored brown must be connected to the terminal that is marked with the letter L or the color red.
18. Este aparelho elétrico não deve ser exposto a pingos ou respingos e deve ser tomado cuidado para não colocar objetos contendo líquidos, tais como vasos, sobre o aparelho.
19. O comutador liga/desliga nesta unidade não interrompe ambos os lados da rede elétrica primária. Energia perigosa pode estar presente dentro do chassi quando o comutador liga/desliga estiver na posição desligado. O plugue de alimentação ou um dispositivo de união é usado como dispositivo de desligamento, o dispositivo de desligamento deve permanecer pronto para funcionar.
20. Exposição a níveis de barulho extremamente altos podem causar perda permanente de audição. As pessoas variam consideravelmente em susceptibilidade a perda de audição causada por ruídos, mas quase todo mundo vai perder algo da audição se exposto a ruído suficientemente intenso por tempo suficiente. A Administração de Segurança Ocupacional e Saúde americana (OSHA) especificou os seguintes níveis permissíveis de exposição a ruído:



Duração Por Dia Em Horas	dBA de Nível de Som, Resposta Lenta
8	90
6	92
4	95
3	97
2	100
1 1/2	102
1	105
1/2	110
1/4 ou menos	115


De acordo com a OSHA, qualquer exposição excedente aos limites permissíveis acima pode resultar em alguma perda de audição. Tampões de ouvido ou protetores sobre os canais do ouvido ou sobre as orelhas precisam ser usados ao operar este sistema de amplificação para poder evitar uma perda permanente de audição, se a exposição for em excesso aos limites acima estabelecidos. Para assegurar contra exposição perigosa potencial a níveis de alta pressão de ruído, é recomendado que todas as pessoas expostas a equipamento capaz de produzir níveis de alta pressão de ruído tais como este sistema de amplificação estejam protegidas por protetores de ouvido enquanto esta unidade estiver em funcionamento.

**GUARDE ESSAS INSTRUÇÕES!**



## 安全のための重要事項

警告: 電気製品を使用するときは、次の項目を含め、基本的な注意事項を常にお守りください。

1. 本書の指示内容をお読みください。
2. 本書は保管してください。
3. すべての警告に注意してください。
4. すべての指示に従ってください。
5. 本装置を水の近くで使用しないでください。
6. お手入れには乾いた布をお使いください。
7. 開口部をふさがないでください。メーカーの指示に従って設置してください。
8. ラジエータ、ストーブなど (アンプを含む)、発熱体の近くに設置しないでください。
9. 分極プラグや接地プラグの安全性を損なわないようにしてください。分極プラグの2つのブレードは、一方が他より幅広くなっています。接地式のプラグには2つのブレードと接地プラグがあります。幅広のブレードや接地プラグは安全のために付けられています。所定のプラグがコンセントなどに合わない場合、旧式のコンセントなどの交換について技術者に問い合わせてください。
10. 電源コードを踏んだり挟んだりしないように保護してください。特にプラグ、コンセント、装置から出る部分を保護してください。
11. 備品/付属品はメーカーのものを使用してください。
12.  カート、スタンド、三脚、ブラケット、テーブルなどは、メーカー指定のもの、または装置とともに販売されているものを使用してください。カートを使用するときは、カートと装置を動かしたときに横転などでケガをしないよう注意してください。
13. 落雷の恐れのある嵐のとき、または長期間使用しないときは本装置の電源を外してください。
14. 保守作業はすべて資格のあるサービス担当者に依頼してください。保守作業が必要になるのは、装置が故障した場合、たとえば、電源コードやプラグが破損、装置に液体がかかる。物が落ちる、雨など湿度の影響を受ける、正常に動作しない、落下した場合などです。
15. グランドピン (接地ピン) は決して取り外さないでください。フリーブックレット「感電と接地」を入手してください。装置の電源コードの横に記載されているタイプの電源にのみ接続してください。
16. 本製品をラックに載せる場合は、背面を支持するものがが必要です。
17. Note for UK only: If the colors of the wires in the mains lead of this unit do not correspond with the terminals in your plug, proceed as follows: a) The wire that is colored green and yellow must be connected to the terminal that is marked by the letter E, the earth symbol, colored green or colored green and yellow. b) The wire that is colored blue must be connected to the terminal that is marked with the letter N or the color black. c) The wire that is colored brown must be connected to the terminal that is marked with the letter L or the color red.
18. 電気機器に水がかからないようにしてください。花瓶など液体の入ったものを装置に置かないように注意してください。
19. オン/オフスイッチは、主電源のどちらの側も切断しません。オン/オフスイッチがオフ位置のとき、シャシー内部のエネルギー (高電圧) は危険なレベルにあります。主電源プラグまたは機器のカプラが切断装置になっています。切断装置はすぐに動作し使用できる状態にしておく必要があります。
20. 極めて高い騒音レベルは聴覚を永久に損なう原因になることがあります。騒音による聴覚障害の可能性は人によって異なりますが、十分に高い騒音を十分長い時間浴びた場合には、ほぼすべての人が何らかの障害を被ります。米国労働安全衛生庁 (OSHA) は、許容できるノイズレベル (騒音暴露レベル) を次のように定めています。



1日当たりの時間	サウンドレベルdBA、スローレスポンス
8	90
6	92
4	95
3	97
2	100
1½	102
1	105
½	110
1/4 以下	115

OSHAによると、上記許容限度を超える場合は聴覚障害の原因になります。騒音が上記限度を超える場合は、永久的な聴覚障害を避けるため、このアンプシステムの操作時に、外耳道または耳全体にイヤプラグやプロテクタを装着する必要があります。高音圧レベルによる危険な状態を避けるため、このアンプシステムのような高音圧レベルを出力する機器に触れる人はすべて、本機を使用中はプロテクタにより聴覚を保護することをおすすめします。

**本書は保管してください!**

## 重要安全事项

**警告：**操作电器产品时，请务必遵守基本安全注意事项，包括：

1. 阅读说明书。
2. 妥善保管说明书。
3. 注意所有安全警告。
4. 按照要求和指示操作。
5. 请勿在靠近水（或其它液体）的地方使用本机。
6. 本机只能用于干燥布料擦拭。
7. 请勿遮盖任何通散热口。确实依照本说明书安装本机。
8. 请勿将本机安装在任何热源附近，例如电暖器、蓄热器件、火炉或其他发热电器（包括功率放大器）。
9. 请勿破坏两脚型插头或接地型插头的安全装置。两脚型插头有两个不同宽度的插头片，一个窄，另一个宽一点。接地型插头有两个相同的插头片和一个接地插脚。两脚型插头中宽的插头片和接地型插头接地插脚起着保障安全的作用。如果所附带的插头规格与您的插座不匹配，请让电工更换插座以保证安全。
10. 请勿踩踏或挤压电源线，尤其是插头、插座、设备电源输入接口或者电源线和机身连接处。
11. 本机只可以使用制造商指定的零件 / 配件。
12.  本机只可以使用与本机搭售或由制造商指定的机柜、支架、三角架、托架或桌子。使用机柜时，请小心移动已安装设备的机柜，以避免机会推翻造成身体伤害。
13. 在雷雨天或长期不使用的情况下，请拔掉电源插头。
14. 所有检查与维修都必须由指定的专业维修人员进行。如本机的任何形式的损伤都须检修，例如电源线或插头受损，有液体或物体落入机身内，曾暴露于雨天或潮湿的地方，不能正常运作，或曾掉落后损坏等。
15. 不得拔出接地插脚。请写信索取免费手册《Shock Hazard and Grounding》。使用前，请仔细检查确认所使用的电源电压是否匹配设备上标注的额定电压。
16. 如果本机装在机柜中，其后部也应给予相应的支撑固定。
17. **Note for UK only:** If the colors of the wires in the mains lead of this unit do not correspond with the terminals in your plug, proceed as follows:
  - a) The wire that is colored green and yellow must be connected to the terminal that is marked by the letter E, the earth symbol, colored green or colored green and yellow.
  - b) The wire that is colored blue must be connected to the terminal that is marked with the letter N or the color black.
  - c) The wire that is colored brown must be connected to the terminal that is marked with the letter L or the color red.
18. 本机不得暴露于滴水或溅水中。请勿将诸如花瓶等装有液体的物体放置于本机上。
19. 本机电源开关不能同时断开两端的电源，完全切断外部电源。因此当开关位于“OFF”位置时，本机外壳仍有可能带有触电的危险。电源插头或耦合器能够与设备或者电源容易分开，保证电源的完全切断，从而保证安全。
20. 声压级较高的噪音容易造成听力的永久性损失。因噪声而造成的听力损失程度，个体间的差异较大，但几乎每个人在声压级较高的噪音环境里一定时间，都会有不同程度的听力损失。美国政府职业安全与健康管理局（OSHA）就此规定了下列容许噪声级：

每天持续小时数	声压级 ( dBA ) 慢反应
8	90
6	92
4	95
3	97
2	100
1½	102
1	105
½	110
¼ 或更少	115


据 OSHA, 任何超出以上所允许的范围, 都会造成部分听力的损失。使用本功放系统时, 必须佩戴如耳塞等保护耳朵的器件, 防止长时间处于上述限制级以上的环境而引起永久性听力受损。本机运行时, 如果超过上述所规定的最大限制, 为了抵御较高的声压对于听受损所造成的潜在危险, 建议使用诸如功放系统等引起高声压级噪声的所有人均佩戴保护耳朵的器件。

**请妥善保管本说明书!**



## 중요 안전 지침

**경고:** 전기 제품 사용 시 다음 사항을 포함해 기본적인 주의 사항을 항상 따라야 합니다.

- 이 지침을 읽어 주십시오.
- 이 지침을 준수하여 주십시오.
- 모든 경고 사항에 주의해 주십시오.
- 모든 지침을 따라 주십시오.
- 물기가 있는 근처에서 이 기기를 사용하지 마십시오.
- 마른 헝겊으로만 청소해 주십시오.
- 통풍구를 막지 마십시오. 제조업체의 지침에 따라 설치해 주십시오.
- 라디에이터, 가열기, 난로 또는 열을 발산하는 기타 기기(앰프 포함) 근처에 설치하지 마십시오.
- 극성 플러그나 접지형 플러그의 안전 용도를 무시하지 마십시오. 극성 플러그는 한쪽 날이 다른 쪽보다 더 넓습니다. 접지형 플러그에는 2개의 날과 1개의 접지 플러그가 있습니다. 넓은 날 또는 1개의 접지 플러그는 안전을 위해 제공됩니다. 제공된 플러그가 사용자의 콘센트에 맞지 않으면 구식 콘센트의 교체에 대해 전기 기술자에게 문의하십시오.
- 전원 코드 특히, 플러그, 소켓 및 기기에서 나오는 지점이 밝히거나 집히지 않도록 보호하십시오.
- 제조업체에서 제공하는 부착 장치/액세서리만을 사용하십시오.
-  제조업체에서 지정하거나 기기와 함께 판매되는 카트, 스탠드, 삼각대, 브래킷 또는 테이블만을 사용하십시오. 카트 사용 시 카트/기기 결합물을 움직일 때 전복으로 인해 부상을 입지 않도록 주의해 주십시오.
- 번개와 폭풍이 올 때 그리고 장기간 사용하지 않을 때는 이 기기의 플러그를 뽑아 놓으십시오.
- 자격을 갖춘 서비스 요원에게 모든 서비스를 의뢰하십시오. 전원 공급 코드 또는 플러그가 손상되거나 액체를 엮지르거나 기기 안에 이물질이 떨어뜨리거나 비 또는 습기에 기기를 노출하거나 정상적으로 작동하지 않거나 기기를 떨어뜨린 경우와 같이 기기가 손상된 경우에는 서비스를 받아야 합니다.
- 접지 핀을 제거하지 마십시오. 당사의 무료 소책자인 “감전 위험 및 접지”을 우편으로 주문해 주십시오. 전원 공급 코드의 기기에 표시된 유형의 전원 공급 장치만 연결해 주십시오.
- 이 제품을 장비 랙에 장착할 경우에는 후면 지지대를 설치해야 합니다.
- Note for UK only: If the colors of the wires in the mains lead of this unit do not correspond with the terminals in your plug, proceed as follows: a) The wire that is colored green and yellow must be connected to the terminal that is marked by the letter E, the earth symbol, colored green or colored green and yellow. b) The wire that is colored blue must be connected to the terminal that is marked with the letter N or the color black. c) The wire that is colored brown must be connected to the terminal that is marked with the letter L or the color red.
- 전기 기기가 비나 물방울에 노출되지 않도록 주의하고 꽃병과 같이 용액이 들어 있는 물체를 기기 위에 놓지 않도록 주의해 주십시오.
- 본 기기의 ON/OFF 스위치는 양쪽의 주 기기 전원을 차단하지 않습니다. ON/OFF 스위치가 OFF 위치에 있더라도 새시 내부에 위험한 전기가 흐를 수 있습니다. 기본 플러그 또는 기기 커플러는 분리 장치로 사용됩니다. 분리 장치는 바로 사용 가능한 상태로 두어야 합니다.
- 매우 높은 소음에 노출되면 영구적으로 청각이 손상될 수 있습니다. 소음으로 인한 청각 손상 가능성은 개인별로 매우 다르지만 장시간 매우 강한 소음에 노출되면 거의 모든 사람들에게 어느 정도의 청각 손상이 발생합니다. 미국 정부의 OSHA(작업 안전 및 건강 관리국)은 다음과 같이 용인 가능한 소음 노출을 규정하고 있습니다.

일별 지속 시간	소음 수준 dBA, 저속 반응
8	90
6	92
4	95
3	97
2	100
1½	102
1	105
½	110
¼ 이하	115

OSHA에 따르면 용인 가능한 위 제한 수치를 초과하여 노출된 경우 일부 청각이 손상될 수 있습니다. 위에 명시된 제한치를 초과하여 노출되는 경우 영구적인 청각 손상을 예방하려면 이 앰프 시스템 사용 시 귀마개 또는 귀 전체를 덮는 보호구를 착용해야 합니다. 잠재적으로 위험한 높은 음압에 노출되지 않도록 하려면 이 앰프 시스템과 같이 높은 음압을 생성할 수 있는 장비에 노출되는 모든 사람이 기기가 작동하는 동안 청각 보호구를 착용하는 것이 좋습니다.

**이 지침을 잘 보관해 주십시오**



## تعليمات الأمان المهمة

تحذير: عند استخدام المنتجات الكهربائية، يجب اتباع الاحتياطات الأساسية دائما، والتي تشمل التالي:

CE

1. قراءة هذه التعليمات.
2. الحفاظ على هذه التعليمات.
3. الانتباه لجميع التحذيرات.
4. اتباع هذه التعليمات.
5. عدم استخدام هذا الجهاز على مقربة من الماء.
6. ينظف فقط بقطعة قماش جافة.
7. لا تقم بسد أي فتحات تهوية. يتم التثبيت وفقا لتعليمات المصنع.
8. لا تضع الجهاز بالقرب من أي مصادر حرارة مثل المبردات، والمدفآت، أو المواقد أو أي أجهزة أخرى (بما فيها مكبرات الصوت) التي يصدر عنها حرارة.
9. لا تتسبب في فشل الغرض من أمان قابيس الكهرباء القطبي أو من النوع الأرضي. القابيس القطبي به سنان أحدهما أعرض من الثاني. القابيس من النوع الأرضي به سنان وقابيس أرضي ثالث. القابيس مزود بسن عريضة أو يتم توفير السن الثالث من أجل سلامتك. إذا لم يناسب القابيس الثالث مقبس الحائط الخاص بك، استشر فني كهرباء لاستبدال المقبس القديم.
10. قم بحماية كبل الكهرباء من المشي عليه أو ضغطه، خاصة في القوابيس، والمقابيس الملائمة، وموضع خروجها من الجهاز.
11. استخدم المرفقات / الملحقات المقدمة من المصنع فقط.
12. استخدمه فقط مع الحامل، والمنضدة، والمحمل، والمسند، أو الطاولة التي حددها المصنع، أو التي تباع مع الجهاز. عند استخدام العربية، خذ حذر عند تحريك العربية / مجموعة الجهاز لتجنب إصابتك عند الانقلاب.
13. انزع قابيس الجهاز أثناء عواصف البرق أو عند عدم استخدامه لفترات طويلة.
14. ارجع في جميع أعمال الصيانة للموظفين المؤهلين. يجب إجراء الصيانة عند تعرض الجهاز للتلف بأي طريقة، مثل تلف كبل مزود الكهرباء أو القابيس، أو عند سقوط سائل أو أشياء على الجهاز، أو عند تعرض الجهاز للمطر أو للرطوبة، أو إذا لم يعمل بصورة طبيعية، أو في حالة سقوطه على الأرض.
15. لا تقم أبداً بقطع الموصل الأرضي. راسلنا للحصول على كتيب "خطر الإصابة بالصواعق والأطراف الكهربائية الأرضية" المجاني الخاص بنا. وصل الجهاز فقط بمزود كهرباء من النوع المحدد على الوحدة المجاورة لكبل مزود الطاقة.
16. يجب توفير الدعم الخلفي عند تركيب الجهاز على رف معدات.
17. ملاحظة للمملكة المتحدة فقط: إذا كانت ألوان الأسلاك في الأطراف الرئيسية لهذه الوحدة لا تتوافق مع العلامات الملونة المحددة للأطراف في المقبس الخاص بك، اتبع ما يلي:
  - (أ) يجب توصيل السلك الملون بالأخضر والأصفر بالطرف المميز بالحرف E، أو رمز الأرضي أو الملون بالأخضر أو الأصفر.
  - (ب) يجب توصيل السلك الملون باللون الأزرق بالطرف المميز بالحرف N، أو ذو اللون الأسود.
  - (ج) يجب توصيل السلك الملون بالبنّي بالطرف المميز بالحرف L، أو ذو اللون الأحمر.
18. لا يجب تعريض هذا الجهاز الكهربائي لتتقيط أو رش السوائل، كما يجب العناية به بعدم وضع الأشياء التي تحتوي على سوائل، مثل الزهريات، فوق الجهاز.
19. لا يعطل مفتاح التشغيل/الإيقاف بهذه الوحدة جانبي الأطراف الرئيسية الأولية. قد توجد شحنات كهربائية خطيرة داخل هيكل الجهاز عندما يكون مفتاح التشغيل/الإيقاف في وضع الإيقاف. يتم استخدام قابيس الأطراف الرئيسية أو وصلة الجهاز كجهاز قطع الاتصال، الذي يجب أن يظل قابل للتشغيل.
20. قد يسبب التعرض لمستويات ضوضاء عالية جدا إلى فقدان سمع دائم. يختلف الأشخاص في مدى حساسيتهم للضوضاء التي تؤدي لفقدان السمع لحد بعيد، لكن تقريبا قد يفقد الشخص بعض من سمعه إذا تعرض لفترة كافية من الضوضاء الشديدة وذلك لوقت كافٍ. وقد حددت إدارة الصحة والأمان المهني بالحكومة الأمريكية مستوى التعرض المسموح به للضوضاء:

مستوي الصوت بالديسيبل، الاستجابة التدرجية

المدة يوميا بالساعات

8	90
6	92
4	95
3	97
2	100
2/1	102
1	105
2/1	110
4/1 أو أقل	115

وفقا لإدارة الصحة والأمان المهني، فإن أي تعرض أعلى من الحدود المسموح بها يمكن أن يؤدي إلى فقدان جزئي للسمع. يجب ارتداء سدادات الأذن أو واقيات قنارات الأذن أو فوق الأذن عند تشغيل أنظمة تكبير الصوت وذلك لمنع فقدان السمع الدائم، إذا كان التعرض يزيد على الحدود التي تم عرضها في النقطة الرابعة أعلاه. للضمان من التعرض للخطر المحتمل لمستويات ضغط صوتي عالية، ينصح جميع الأشخاص المعرضين لمعدات قادرة على إصدار مستويات ضغط صوتي عالية مثل أنظمة مكبرات الصوت أن يستخدموا واقيات الأذن لحمايتهم أثناء التشغيل.

**احفظ هذه التعليمات!**



Logo referenced in Directive 2002/96/EC Annex IV(OJ(L)37/38,13.02.03 and defined in EN 50419: 2005

The bar is the symbol for marking of new waste and is applied only to equipment manufactured after 13 August 2005

Correct Disposal of this product. This marking indicates that this product should not be disposed with other household wastes throughout the EU. To prevent possible harm to the environment or human health from uncontrolled waste disposal, recycle it responsibly to promote the sustainable reuse of material resources. To return your used device, please use the return and collection systems, or contact the retailer where the product was purchased. They can take this product for environmental safe recycling.



Logotipo al que se hace referencia en la Directiva 2002/96/EC AnexoIV(OJ(L)37/38,13.02.03 y definido en EN 50419: 2005

La barra es el símbolo para marcar los nuevos desechos y se aplica solamente a equipamiento fabricado después del 13 de agosto de 2005

Forma correcta de deshacerse de este producto. Esta marca indica que este producto no debe arrojarse junto con otros desperdicios domésticos en ningún lugar de la Unión Europea. Para evitar posibles daños al medio ambiente o a la salud humana debidos a desechos no controlados de desperdicios, recíclolo responsablemente para promover la reutilización sostenible de los recursos materiales. Para devolver su dispositivo usado, utilice los sistemas de devolución recolección, o contacte con el vendedor minorista donde compró el producto. Ellos pueden llevar este producto al reciclado seguro para el medio ambiente.



Logo documenté dans l'annexe de la Directive 2002/96/EC IV\_(OJ(L)37/38,13.02.03 et défini par la norme EN 50419:2005

La barre est le symbole de signalisation des nouveaux déchets qui s'applique uniquement aux équipements fabriqués après le 13 août 2005

Recyclez correctement ce produit. Cette signalisation indique que ce produit ne doit pas être jeté avec les autres déchets domestiques dans les pays de l'UE. Pour éviter toute atteinte à l'environnement ou à la santé humaine par des décharges sauvages, recyclez ce produit de manière responsable pour encourager la réutilisation durable des ressources matérielles. Pour retourner votre appareil utilisé, veuillez utiliser les systèmes de collecte et de retour, ou contactez le revendeur à qui vous avez acheté le produit. Il prendra en charge ce produit de manière à protéger l'environnement.



Logo eingetragen in Richtlinie 2002/96/EC Anhangl IV\_(OJ(L)37/38, 13.02.03 und definiert in EN 50419: 2005

Der Balken ist das Symbol zur Kennzeichnung neuen Abfalls und wird nur auf Geräten angebracht, die nach dem 13. August 2005 gefertigt wurden

Entsorgen Sie dieses Produkt umweltgerecht. Diese Kennzeichnung bedeutet, dass das Produkt innerhalb der EU nicht mit dem Hausmüll entsorgt werden darf. Zur Vermeidung von Umwelt- und Gesundheitsschäden durch unkontrollierte Entsorgung recyceln Sie das Gerät bitte. Geben Sie das Gerät an einer Sammelstelle für Elektroaltgeräte ab oder wenden Sie sich an Ihren Fachhändler.



Logo viitattu direktiivin 2002/96/EY liitteeseen IV(OJ(L)37/38,13.02.03 mukaisesti, määritelty standardissa EN 50419: 2005

Palkki on uuden jätteen merkintäsymboli ja sitä käytetään vain 13. elokuuta 2005 jälkeen valmistetuissa laitteissa

Tuotteen oikea hävittäminen. Tämä merkki ilmaisee, että tuotetta ei saa hävittää muun talousjätteen mukana EU:n alueella. Jotta estetään mahdolliset valvomattoman jätteiden hävittämisen haitat ympäristölle tai ihmisten terveydelle, kierrätä tuote vastuullisesti ja edistä materiaalien kestävä uudelleenkäyttöä. Voit palauttaa käytetyn laitteen käyttämällä keräysjärjestelmää tai ottamalla yhteyttä jälleenmyyjään, jolta laite ostettiin. He voivat toimittaa tuotteen ympäristön kannalta turvalliseen kierrätykseen.



Logotyp som hänvisar till i direktiv 2002/96/EG bilaga IV(OJ(L)37/38,13.02.03 och definieras i EN 50419: 2005

Stapeln är symbolen för märkning av nytt avfall och är endast tillämplig på utrustning som tillverkats efter 13 augusti, 2005

Korrekt bortscaffande av denna produkt. Denna märkning betyder att produkten inte skall bortscaffas tillsammans med annat hushållsavfall i hela EU. För att förhindra eventuella skador för miljön eller människors hälsa från okontrollerat bortscaffande av avfall, återvinn det ansvarsfullt för att främja hållbar återanvändning av materiella resurser. För att returnera din använda enhet, använd återanvändnings- och uppsamlingsystem, eller kontakta den återförsäljare där produkten köptes. De kan ta hand om denna produkt för miljösäker återvinning.



Het logo waarnaar wordt verwezen in de bijlage van Richtlijn 2002/96/EG IV(OJ(L)37/38,13.02.03 en omschreven in EN 50419: 2005

De balk is het symbool voor het markeren van nieuw afval en wordt alleen toegepast op apparatuur dat is vervaardigd na 13 augustus 2005

Juiste verwijdering van dit product. Deze markering geeft aan dat dit product nergens in de Europese Unie met ander huishoudelijk afval mag worden afgevoerd. Om mogelijke schade aan het milieu of gezondheid door ongecontroleerde afvalverwijdering te voorkomen, recycle het op een verantwoorde wijze om het duurzame hergebruik van materiaalgrondstoffen te bevorderen. Om uw gebruikte apparaat in te leveren, kunt u gebruik maken van de inlever- en verzamelssystemen of contact opnemen met de verkoper waar het product is gekocht. Zij kunnen dit product innemen voor het milieuvriendelijk recycling.



Simbolo presente nell'allegato IV\_(OJ(L)37/38,13.02.03 della direttiva 2002/96/CE e definito nello standard EN 50419: 2005

La barra è il simbolo indicante un nuovo rifiuto ed è applicata esclusivamente ad apparecchiature prodotte successivamente al 13 agosto 2005

Corretto smaltimento di questo prodotto. Questo simbolo indica che questo prodotto non deve essere smaltito insieme ad altri rifiuti domestici in tutta Europa. Per prevenire possibili danni all'ambiente o alla salute umana dovuti allo smaltimento non regolamentato dei rifiuti, è necessario riciclarlo responsabilmente al fine di promuovere il riutilizzo sostenibile delle risorse materiali. Per restituire il dispositivo usato, utilizzare i sistemi di restituzione e raccolta o contattare il rivenditore presso il quale il prodotto è stato acquistato. Quest'ultimo può occuparsi del riciclaggio ambientale sicuro di questo prodotto.



标志参照 2002/96/EC 指令附录 IV(OJ(L)37/38,13.02.03 和 EN 50419: 2005 定义

条码符号标示新废弃物, 仅适用于 2005 年 8 月 13 日后生产的设备

正确处理此产品。此标志表明该产品在整个欧盟区内不应该与其他家居生活废弃物一同处置。为防止因无控废弃物处置对环境或人类健康可能造成的危害, 请负责地回收并促进可重复使用的物质资源。要归还旧设备, 请使用退还收集系统, 或联系购买此产品的零售商。他们会为环境安全回收此产品。



## FCC Compliancy Statement

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, that may cause undesired operation.

**Warning:** Changes or modifications to the equipment not approved by Crest Audio can void the user's authority to use the equipment.

**Note -** This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try and correct the interference by one or more of the following measures.

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

CAN ICES-3(B)/NMB/3(B)



- 1 Save the carton and packing material even if the equipment has arrived in good condition. Should you ever need to ship the unit, use only the original factory packing.
- 2 Read all documentation before operating your equipment. Retain all documentation for future reference.
- 3 Follow all instructions printed on unit chassis for proper operation.
- 4 Do not spill water or other liquids into or on the unit, or operate the unit while standing in liquid.
- 5 Make sure power outlets conform to the power requirements listed on the back of the unit.
- 6 Do not use the unit if the electrical power cord is frayed or broken. The power supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords and plugs, convenience receptacles, and the point where they exit from the appliance.
- 7 Always operate the unit with the AC ground wire connected to the electrical system ground. Precautions should be taken so that the means of grounding of a piece of equipment is not defeated.
- 8 Mains voltage must be correct and the same as that printed on the rear of the unit. Damage caused by connection to improper AC voltage is not covered by any warranty.
- 9 Have gain controls on amplifiers turned down during power-up to prevent speaker damage if there are high signal levels at the inputs.
- 10 Power down & disconnect units from mains voltage before making connections.
- 11 Never hold a power switch in the "ON" position if it won't stay there itself!
- 12 Do not use the unit near stoves, heat registers, radiators, or other heat producing devices.
- 13 Do not block fan intake or exhaust ports. Do not operate equipment on a surface or in an environment which may impede the normal flow of air around the unit, such as a bed, rug, weather-sheet, carpet, or completely enclosed rack. If the unit is used in an extremely dusty or smoky environment, the unit should be periodically "blown free" of foreign matter.
- 14 Do not remove the cover. Removing the cover will expose you to potentially dangerous voltages. There are no user serviceable parts inside.
- 15 Connecting amplifier outputs to oscilloscopes or other test equipment while the amplifier is in bridged mode may damage both the amplifier and test equipment!
- 16 Do not drive the inputs with a signal level greater than that required to drive equipment to full output.
- 17 Do not connect the inputs / outputs of amplifiers or consoles to any other voltage source, such as a battery, mains source, or power supply, regardless of whether the amplifier or console is turned on or off.
- 18 Do not run the output of any amplifier channel back into another channel's input. Do not parallel- or series-connect an amplifier output with any other amplifier output. Crest Audio is not responsible for damage to loudspeakers for any reason.
- 19 Do not ground any + ("hot") terminal. Never connect a + ("hot") output to ground or to another + ("hot") output!
- 19 Non-use periods. The power cord of equipment should be unplugged from the outlet when left unused for a long period of time.

## Service Information

### Equipment should be serviced by qualified service personnel when:

- A. The power supply cord or the plug has been damaged;
- B. Objects have fallen, or liquid has been spilled into the equipment;
- C. The equipment has been exposed to rain;
- D. The equipment does not appear to operate normally, or exhibits a marked change in performance;
- E. The equipment has been dropped, or the enclosure damaged.

### To obtain service,

contact your nearest Crest Audio Service Center; Distributor; Dealer; or Crest Audio at 201.909.8700 (USA).



This symbol is used to alert the operator to follow important operating procedures and precautions detailed in documentation.



This symbol is used to warn operators that uninsulated "dangerous voltages" are present within the equipment enclosure that may pose a risk of electric shock.

**⚡ WARNING ⚡**

THE ON/OFF SWITCH IN THIS APPARATUS DOES NOT BREAK BOTH SIDES OF THE MAINS. HAZARDOUS ENERGY MAY BE PRESENT INSIDE THE ENCLOSURE WHEN THE POWER SWITCH IS IN THE OFF POSITION.

## Welcome

Congratulations on your purchase of a Crest Audio Ci family of Power Processing amplifiers. Please read this manual carefully (especially the "Important Precautions" section located inside the front cover) as it contains information vital to the safe operation of the amplifier. Also, please fill out and return the enclosed product registration card. The Ci 20x8 eight channel and Ci 30x4 four channel Power Processing amplifiers represent new levels of value and flexibility never before offered to the contracting market. Ci Series amplifier is specially designed to independently drive low impedance speaker loads and / or provide directly coupled 70.7 volt outputs on a per channel basis. This amplifier covers almost every conceivable installed or distributed sound power requirement. By combining legendary Crest performance with a plug-in module bay located on the rear panel, these amplifiers can become very sophisticated audio processors. The Ci family is everything that you expect from Crest Audio. They are ruggedly built from high quality components, intelligently laid out, and possess comprehensive protection features. After-sale support is considered paramount at Crest Audio. For any assistance in the set-up or operation of this product please call Crest Audio's Customer Service department or your local Crest Audio representative. Should you have any problems at all, or suggestions that may help us improve our products or service, please contact us. We encourage your participation in Crest's future. (See back cover for contact info) Crest Audio may also be contacted on the World Wide Web at: <http://www.crestaudio.com>.

For your safety,  
read the important  
precautions section,  
as well as input,  
output, and power  
connection sections.



## Getting Started

This section covers the basics for setting up the Ci. Refer to this section in order to get the amplifier up and running quickly, and pay special attention to the Requirements and Considerations section. It contains important information concerning the operating conditions necessary to operate the Ci in a safe and stable fashion. Also be sure to refer to the Precautions page at the front of this manual for additional safety warnings.

For replacement packaging, call Crest Audio's Customer Service Department directly. see—**service and support**



## Unpacking

Upon unpacking, inspect the amplifier. If you find any damage, notify your supplier immediately. Only the consignee may institute a claim with the carrier for damage incurred during shipping. Be sure to save the carton and all packing materials. Should you ever need to ship the unit back to Crest Audio, one of its offices, service centers, or the supplier, use only the original factory packing. If the shipping carton is unavailable, contact Crest to obtain a replacement.

## Installation And Mounting

Crest Audio Ci Power Processing amplifiers are configured to a standard set-up at the factory. They are functional and ready to use 'out of the box.' All controls and input/output connections are clearly labeled. Units are shipped standard with a blank panel in the module bay.

Always turn off and disconnect the amplifier from mains voltage before making audio connections. Also, as an extra precaution, have the attenuators turned down during power-up.



## To Set The Amplifier Up For Basic Usage:

- 1 Rack mount the amplifier, remembering to allow for adequate access and cooling space. For more information, see the section titled Cooling Requirements in this section.
2. Make input connections to the Phoenix connector inputs. Make the connections to all inputs for normal operation, or connect to odd channels Ch 1, 3, 5, 7 only for bridged configuration. Refer to Input Sources and Output Configuration in the Amplifier Operation section for more information.
- 3 Connect speakers to the output barrier strip. Be sure to make the correct output connections for stereo or bridged configuration. Refer to Output Module Connections in the Amplifier Operation section for more information.
- 4 Make AC power connections, allowing for proper current draw.
- 5 Turn the front panel three-position AC switch to 'Active', and bring up the rear panel gain attenuators to the desired level.

Ci Power Processing amplifiers are 2 rack space units of 17 1/8" (437mm) depth that mount in a standard 19-inch rack. On all amplifiers, four front panel-mounting holes are provided. Rear mounting ears are also provided on all amplifiers for additional support, which is essential in non-permanent installations like mobile or touring sound systems, and recommended for permanent installations as well. (Distance from the back of the front rack ear to the center of the rear mounting ear holes is 16 5/8" / 422mm) Because of the cables and connectors on the rear panel, a right-angle or offset screwdriver or hex key will make it easier to fasten the rear mounting ears to the rails. Dimension drawings are included on page 4.

Make certain that there is enough space around the front and rear of the amplifier to allow the heated air to escape.



**suggestion:** In racks with closed backs allow at least **one** standard-rack-space opening for every four amps.

## Requirements And Considerations

### Circuit Size Requirements

Ci Power Processing amplifier power requirements are rated at "idle," 1/8th power ("typical" music conditions), 1/3rd power, and maximum rated power. The maximum power current draw rating is limited by the amplifier's circuit breaker. Consult Appendix A for the current that each amplifier will demand. AC mains voltage must be the same as that indicated on the rear of the amplifier. Damage caused by connecting the amplifier to improper AC voltage is not covered by any warranty.

Note: Always turn off and disconnect the amplifier from the mains voltage before making audio connections. If possible, as an extra precaution, have the attenuators turned down during power-up.

Always turn off and disconnect the amplifier from mains voltage before making audio connections. Also, as an extra precaution, turn the attenuators down during power-up.



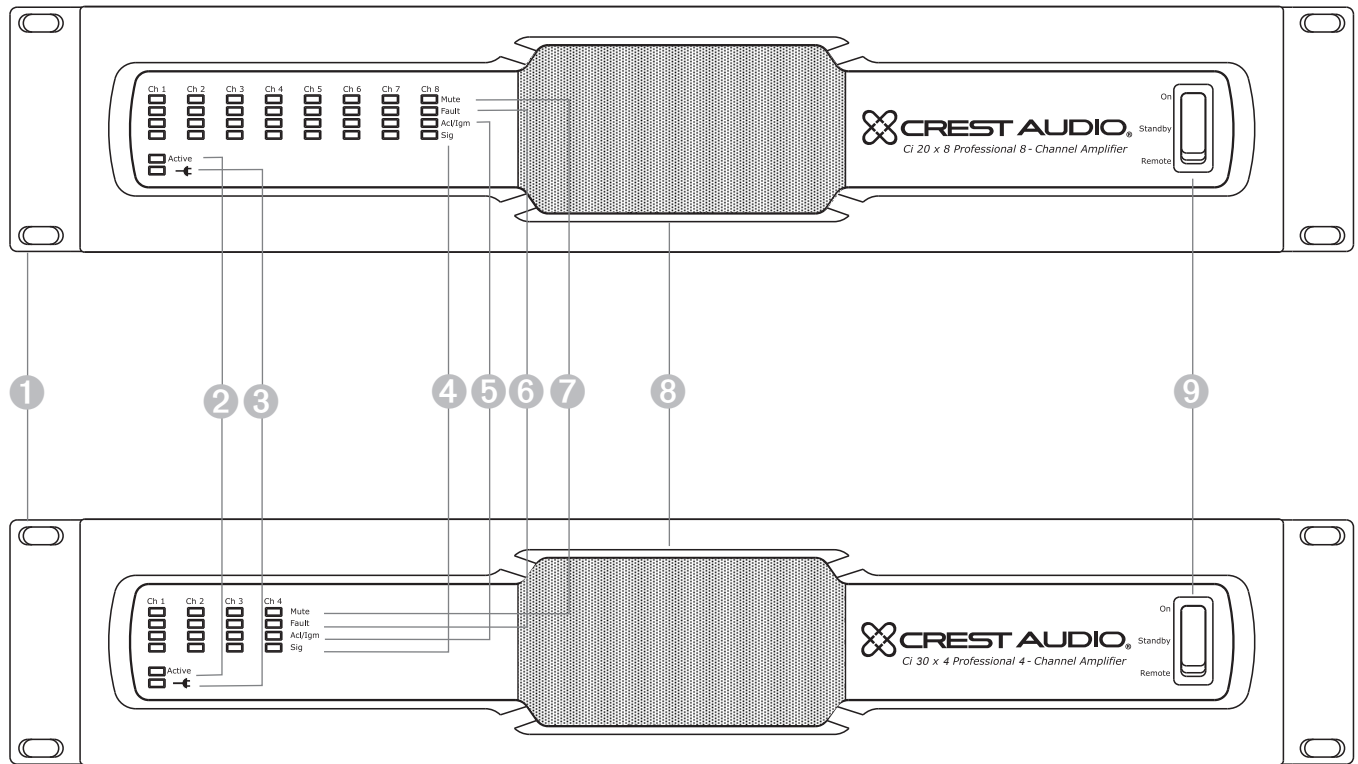
### Cooling Requirements

Ci Power Processing amplifiers use a forced-air cooling system to maintain a low, even operating temperature. Air drawn by a fan mounted behind the front panel enters through the front grill and cools the amplifier's power transistors. Heated exhaust air exits through the side panel ports. The fan will remain inactive until the unit is "Active". Make sure that there is enough space around the front of the amplifier to allow air to enter, and around the sides to allow the heated air to exit. See page 4 for intake and exhaust locations.

Note: If the amplifier is rack-mounted, do not use doors or covers on the front or rear without pressurizing the rack. Whatever type of rack you are using, make sure that heated air can escape freely, and that there is no resistance to the intake of cool air through the front grill. Intake and exhaust air must flow without resistance. Ensure that fan filters are regularly cleaned and periodically replaced. (No tools are required for filter removal)

### Thermal Emissions

System cooling needs must be considered before installation, and the system installer/designer should specify appropriate countermeasures, such as ventilation, air conditioning, etc.



This section identifies and labels all the switches, indicators, connectors and functional components with which a Ci owner should become familiarized. Getting to know the items in this section and their locations on the Ci will make the manual much clearer. Keep in mind that this only as an overview of the amplifier's layout, and does not contain all the information necessary to effectively operate the Ci. For more detailed information on many of the items listed here, see *Amplifier Operation*.

The power only breaks one side of the AC mains. Hazardous energy may be present in the enclosure when the power switch is in the off position.

## Front Panel

### 1 Rack Mounting Ears

Two mounting holes are provided on each front mounting ear.

### 2 Active LED

The Active LED indicates the amplifier is "Active" (turned on).

### 3 AC plug LED

The Active LED indicates the amplifier is "Active" (turned on).

### 4 Signal LED's

Each channel has a Signal LED indicating that signal is present on that channel.

### 5 ACL/IGM LED's

Each channel has an ACL/IGM (Active Clip Limiting/Instantaneous Gain Modulation) LED. If the signal reaches the clipping point, this LED will light to show that ACL/IGM has engaged.

When operating in the bridged mode, both attenuators must be in the same position so the speaker load will be equally shared between the channels. See the section on Bridged Mono Operation for more information and precautions.

**6 Fault LED**

If the amplifier enters Protect mode, the output relay will open, and this LED will light.

**7 Mute LED's**

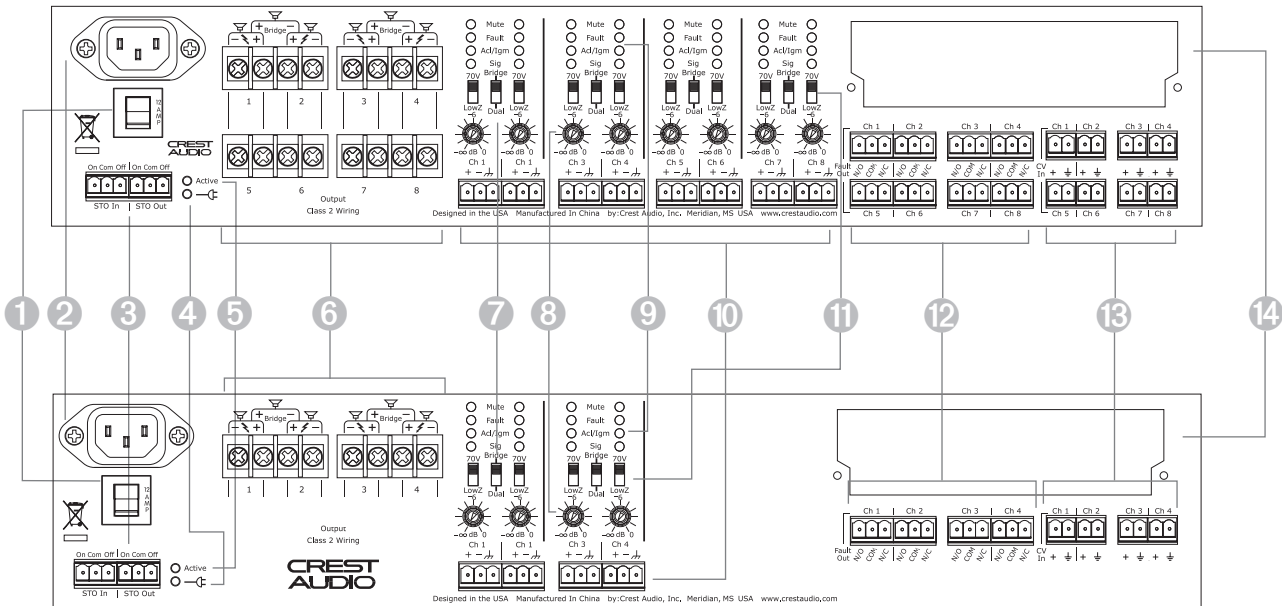
Each channel has a Mute LED. If a channel is muted, this LED will light.

**8 Fan, Grill & Filter Assembly**

A high-efficiency DC fan draws cool air into the amplifier through the safety grill and removable dust filter. Do not block this intake! The variable speed fan operates when the unit is "Active". Fan filters are easy to remove and should be cleaned regularly to ensure optimum performance.

**9 Three-position AC Power Switch**

With this switch in the "up" position the amplifier is "Active" (On). The middle position is "Standby" (Off) and the lower position is marked Remote. When switched to Remote, the amplifier must be activated by the sequential turn on/turn off (STO) circuit or NexSys software.



**Rear Panel**

**1 Circuit Breaker**

A push type circuit breaker is located on the rear of the amplifier. If this breaker trips repeatedly, the amplifier needs servicing.

**2 IEC Connector**

A standard IEC power connector is located on the rear panel of amplifier. The connector accommodates a standard IEC line cord, included in the amplifier box. Should this cord need to be replaced, only a cord with the same current rating should be used.



### 3 STO Connectors

These connectors can be wired to a contact closure for remote turn-on and to other Ci/Cki/CK amplifiers for sequential turn-on (STO).

### 4 Power LED

The Power LED indicates the amplifier has AC power. Same as front panel LED.

### 5 Active LED

The Active LED indicates the amplifier is "Active" (turned on). Same as front panel LED.

### 6 Output Connectors

A barrier strip provides output connection terminals for two speakers operating in stereo or for a single speaker wired in a bridged mono configuration. Bare wire or spade lugs may be used to make barrier strip connections.

### 7 Bridged Mode Switch

This switch reconfigures the amplifiers outputs for stereo or bridged operation.

### 8 Attenuators

Each channel has an attenuator knob to adjust the channel's output from  $-\infty$  to 0 dB.

### 9 Rear Panel Status LED's

The "Signal," "ACL/IGM," "Fault," and "Mute" LED's on the rear panel serve the same function as the front panel LED's of the same names.

### 10 Input Connectors

The Ci uses one 3-pin Phoenix connector per channel for balanced line-level audio input. These inputs can also be setup to accept an unbalanced signal.

### 11 "Low Z/ 70V" Gain Switch

This switch sets the amplifier's gain structure as "70V" constant sensitivity (1.414 Sensitivity) or "Low Z" constant gain (x40 settings) It also sets thresholds for IGM and ACL accordingly for Low Z or 70V.

### 12 Fault Outputs

Each channel has a Fault output contact closure. When a channel fault occurs, this contact closure will engage. These contact closures can be further programmed using NexSys Software.

### 13 Control Voltage (CV) Inputs

Each channel has a Control Voltage Input. Using a 1K Ohm potentiometer across the +/- terminals, these inputs (by default) control the volume of the corresponding amplifier channel. These inputs can be further programmed using NexSys Software.

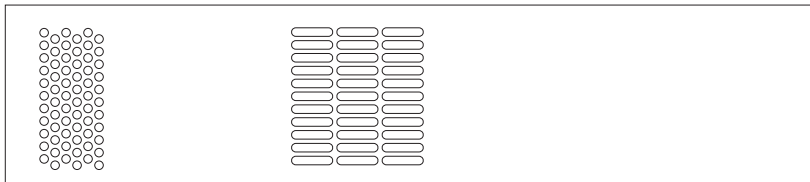
### 14 Module Bay

The rear panel of a Ci Power Processing amplifier provides a module bay configured to accept interchangeable plug-in modules. Your amplifier may have been factory configured with some of the optional modules. In this case, additional information on the relevant modules will be enclosed in the amplifier box, or in a separate binder. If all required information is not included, please call Crest Audio's Customer Service department or your local Crest Audio representative.

Rear panel LED's assist in troubleshooting from the back of the rack.



### Side Panels



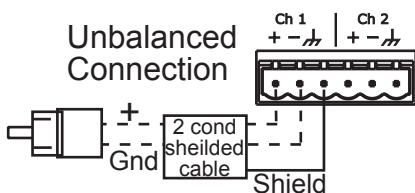
#### Exhaust Ports

Heated air exits through the exhaust ports, located on the sides of the amplifier chassis. Do not block these ports when rack-mounting the amplifier.

## Amplifier Operation

### Input Sources

Ci Power Processing amplifiers are designed to accept a balanced input signal. For use with an unbalanced source. Please see the diagram below.



Further audio routing can be configured using Nx modules via software.

### Output Connections

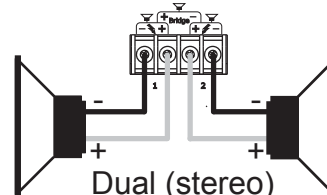
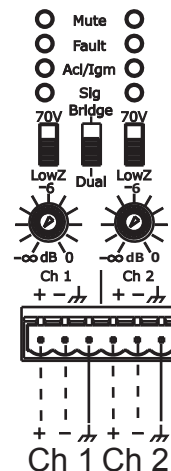
Speakers are connected using the Output Barrier Strip connectors. Spade lugs, ring tongues or bare wire may be connected to the output barrier strip elements. Spade Lug measurements for Output barrier strip are as follows: 0.44" (11mm) screw spacing, 0.32" (8mm) lug space. For output spade lugs, Panduit Part No. PNF 14-8LF-C (or equivalent) is recommended (consult the wire gauge charts in Appendix D for speaker wiring recommendations). Make sure the amplifier is turned off before you change any output connections or jumpers. Also ensure that the impedance of the load being connected is not less than the amplifier's recommended minimum load.

### Output Configuration

Ci Power Processing amplifiers are factory configured for two channel (stereo) operation. They can, however, be wired to operate in bridged mono mode (a single mono input amplified to the combined power of two channels and made available as a single Mono output).

#### Channel (Stereo) Mode

In the standard channel (stereo) mode, all channels operate independently. Individual input attenuators control the respective levels of each channel. Signal at Channel 1 input produces output at Channel 1 output, while signal at Channel 2 input produces output at Channel 2 output and Channel 3 input produces output at Channel 3 output, etc.. Recommended minimum nominal load impedance for stereo operation of Ci Series amplifiers is 4 ohms per channel. Connect loudspeakers to the barrier strip output connector for all channels 1 thru 8. Connections are shown in the diagram at right.



The Ci amplifier is an eight channel amplifier. It can be configured in combinations of bridged and single (stereo) channels. For instance, channels 1, 2, 7 and 8 can be independent (stereo) channels while channels 3 and 4 are bridged and channels 5 and 6 are bridged. Each channel pair (1 & 2 or 3 & 4 or 5 & 6 or 7 & 8) has an associated Mode switch for Stereo or Bridged operation. When in stereo mode the channel pair act as independent amplifier channels. When in bridged mode, the channel pair is setup to run as one more powerful channel.

### Stereo

For stereo operation, turn the amplifier off and set the Mode Select Switch to the stereo position. In this mode, both channels operate independently of each other, with the input attenuators controlling each channel's level. Thus, a signal at Channel 2's input produces an amplified signal at Channel 2's output, and the same for other stereo channels.

### Parallel Mode

To send the same signal to both channels, connect the input signal to Channel 1 via the Input Barrier Strip. Run jumpers from the positive and negative terminals of Channel 1 Input Barrier Strip to the respective terminals of Channel 2. Both channels then share Channel 1 input signal, but will operate independently. Speakers are connected as in Stereo Mode.

### Bridged Mono

For Bridged operation, turn the amplifier off and set the Mode Select Switch to the Bridge position. This Mode straps the two adjacent amplifier channels together, making a very powerful single channel. One channel "pushes" and the other "pulls" equally, effectively quadrupling the power of either channel alone. When in bridged mode, the odd channel controls act as the master controls for both channels. Signal is connected to the odd channel only (1, 3, 5, or 7). The level is set using the odd channels attenuator. The even channel attenuator should be set to off.

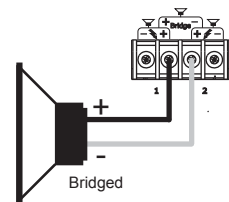
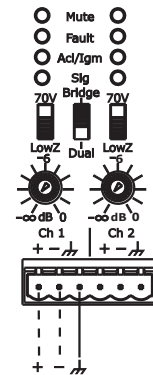
The speakers are connected only to the designated "+" output terminals for that channel pair. Use extreme caution when operating in the bridged mode, as potentially lethal voltage may be present at the output terminals.

Unlike the stereo mode, in which one side of each output is grounded, both sides are hot in bridged mono mode. Channel A's side is the same polarity as the input. Never ground either side of the speaker cable when the amplifier is in bridged mono mode; both sides are "hot." If an output patch panel is used, all connections must be isolated from each other and from the panel.

**Note: Use extreme caution when operating in bridged mono mode.**

Never ground either side of the speaker cable when the amplifier is in bridged mono mode; both sides are "hot." If an output patch panel is used, all connections must be isolated from each other and from the panel. For Ci Series amplifiers, the recommended minimum nominal load impedance in bridged mono mode is 8 ohms, the equivalent to driving both channels at 4 ohms. Driving loads of less than the recommended minimums will activate the IGM circuitry, resulting in a loss of power; and may also cause a thermal protect condition.

**Regardless of operating mode, NEVER connect amplifier outputs together!**



### Gain Select Switch (Low Z – 70V)

A two-position gain select switch found on the rear panel of the Ci is used to set the overall gain and protection (ACL & IGM) thresholds of the amplifier. The bottom position sets the amplifier for constant gain of  $\times 40$  (32 dB) respectively. The top position sets the amplifier for constant sensitivity. In this position, a +5dBu (1.4VRMS) input signal will produce maximum power at the amplifier's output. The standard factory setting is for  $\times 40$  (32dB). Refer to the specifications for a specific Ci model in Appendix A for more gain/sensitivity information. This switch also sets IGM and ACL thresholds for Low Z and 70V accordingly.

### Sequential Turn-On/Turn-Off (STO)

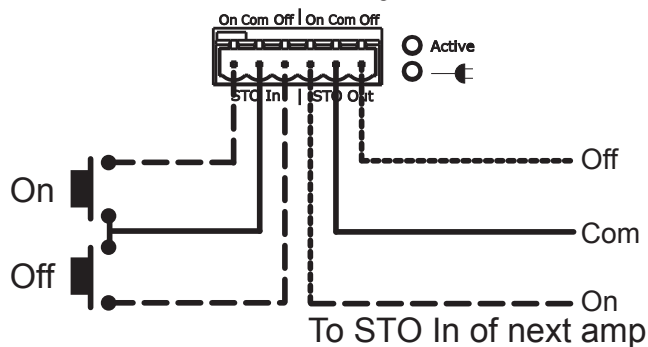
Ci Power Processing amplifiers come standard with Sequential Turn-On/Turn-Off (STO) circuitry. If the amplifier front power switch is set to "remote," a single SPDT toggle switch or two SPST momentary switches can be used to turn the amplifier on and off. Using the same switch(es), additional amplifiers can be turned on/off sequentially by daisy chaining the STO "Out" terminals of one amplifier to the STO "In" terminals of a subsequent amplifier. The standard turn-on delay time between amplifiers is approximately 100ms; turn-off delay time is 200ms.

**Note: when using NexSys control, hardwiring for manual switch closure between amplifiers should be used cautiously. If the switch closure output is wired up, it WILL cause the next amp to switch, regardless of which source (hardware switch or NexSys STO command) has initiated the command.**

### Standard Sequential Turn-On/Turn-Off Wiring

For non-NexSys remote turn-on, a single SPDT toggle switch or two SPST momentary switches can be used. In either case, the switch(es) are wired to the "STO In" connector on the amplifier's rear panel and the amplifier's front panel power switch must be set to "Remote." With an SPDT toggle, the center tap of the switch must be wired to the "Com" pin on the connector; one of the end taps must be wired to the "On" pin, and the other end tap must be wired to the "Off" pin. When the switch shorts the "On" and "Com" pins, the amplifier will turn-on. Likewise, throwing the switch and shorting the "Off" and "Com" pins turns the Ci off. See the diagram below:

With two SPST momentary switches, one switch must be wired across the "On" and "Com" pins, and the other switch must be wired across "Off" and "Com" pins. When the first switch is depressed, it shorts the "On" and "Com" pins, turning the amplifier on. Depressing the other switch will short the "Off" and "Com" pins, turning the Ci off. See the diagram below:



STO connections are optically isolated so connecting amplifiers from different AC feeds will not create grounding (hum) issues.



Any number of Ci or CKi amplifiers can be daisy-chained together for sequential turn-on. Wiring two amplifiers for STO is as simple as connecting the “On,” “Com” and “Off” pins of the “STO Out” connector on the first amplifier to the corresponding pins on the “STO In” connector on the second amplifier. Repeating this wiring scheme with subsequent amplifiers allows entire systems of Ci's to be wired for STO.

## TourClass® Protection Features

Every model in the Ci Power Processing line incorporates Crest Audio's TourClass protection features. Derived from Crest's extensive experience with the world's largest sound rental companies, the TourClass group of features sets new standards in load and amplifier protection.

### Active Clip Limiting (ACL)

Active Clip Limiting (ACL) circuitry protects both loudspeakers and audio fidelity against damaging square-wave clipping. When the amplifier reaches its maximum output power (the point at which the amplifier would begin to clip), the ACL circuitry automatically reduces the amplifier's gain to keep the signal from being driven into clipping. Situations that may activate ACL include: uncontrolled feedback, oscillations, or an improper equipment setting or malfunctions upstream from the amplifier. Normal program transients will not trigger ACL, only steady or excessive clipping. ACL is virtually transparent in operation and full signal bandwidth is maintained.

### Instantaneous Gain Modulation (IGM)

Instantaneous Gain Modulation (IGM) is an innovative impedance sensing circuit that allows the Ci amplifier to operate safely into any load. When the amplifier sees a load that overstresses the output stage, the IGM circuit reduces the channel gain to a safe level. Like ACL, the IGM circuit is sonically transparent in normal use. In cases where extremely low output impedance is encountered (e.g. a shorted speaker cable or speaker driver), the IGM circuit will open the amplifier's output relay. This will completely disconnect the output path, protecting both the amplifier and the load it is driving.

### Thermal Protection

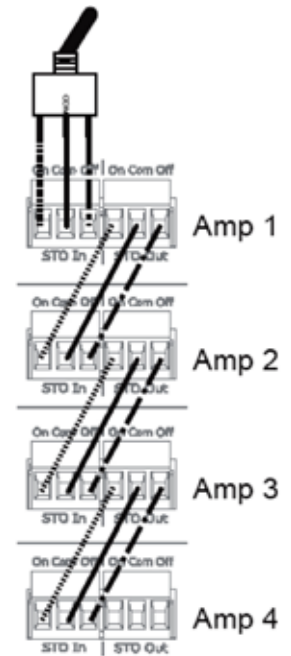
If the temperature of the amplifier's output devices becomes abnormally high, the Ci will protect itself by opening its output relays (disconnecting itself from its load) and shutting down the amplifier's output stage. The Protect LED will light if this occurs. If the power transformer gets too hot, its thermal sensing circuit will disconnect both channel outputs. The Active LED will extinguish and the Protect LED will again illuminate. In either case, the fan will remain running to cool down the amplifier. Once adequately cooled, the amplifier will resume operation automatically.

### Short Circuit

If an output is shorted, the IGM and thermal circuits will automatically protect the amplifier. The IGM circuit senses the short circuit as an extremely stressful load condition and attenuates the signal, protecting the channel's output transistors from over-current stress. If the short circuit remains, the load will be disconnected by the thermal protection circuitry (See Thermal Protection above).

### DC Voltage Protection

If an amplifier channel detects DC voltage at its output terminals, the output relay will immediately open to prevent loudspeaker damage. The Protect LEDs will light.



### AutoRamp Protection

AutoRamp gradually increases the amplifier gain from  $-\infty$  to the attenuator setting every time the amplifier is turned on or is reactivated after a protect condition. This exclusive Crest feature avoids unnecessary stress on the loudspeakers by preventing sudden bursts of audio from arriving at the amplifier's output after its output relays initially close.

### NexSys Fault Monitoring

A Ci equipped with an Nx Dante8 or Nx CobraNet8 module and connected to a NexSys network will report fault conditions to the PC controlling the network. If a networked amplifier enters ACL or IGM or experiences a thermal, DC voltage, or short circuit fault, the fault condition will be reported the PC interface. This allows easy monitoring of amplifier operating conditions across a large or widespread network from a single location.

### Module Bay

Ci Power Processing amplifiers come standard with a blanking panel fixed over the module bay. When a NexSys module is installed in this bay, connection to a network is made via a standard RJ-45 connector and CAT-5 Ethernet cable.

### Module Removal

Only module upgrades require modules to be removed from the amplifier. Contact Crest Audio Customer Service for full details on module removal. The 'General Module Setup' diagram indicates the general setup of the rear panel module/bay configuration.

**Note: Removable modules contain static-sensitive devices; handle modules only at static-safe workstations!**

### Replacing or Installing a Network Module

The amplifier must be switched off and unplugged from the AC mains supply before this operation is undertaken. Two Phillips head screws secure the module to the chassis. The module is connected electrically to the amplifier with a single multi-pin ribbon cable. Once unscrewed from the chassis, unplugging the module from this ribbon cable frees the module for removal. To insert a module, simply reverse this procedure.

**Note: Standard Ci Power Processing amplifiers come with a blank panel installed in the Network bay. The amplifier must not be operated without a Network module or blank panel in place.**

### Service or Technical Inquiries

For Crest Audio service, parts or technical assistance, please call our toll free customer service number: 866.812.7378.

Because of the complexity of the design and the risk of electrical shock, all repairs must be attempted only by qualified technical personnel. If the unit needs to be shipped back to the factory, it must be sent in its original carton. If improperly packed, your amplifier may be damaged.



For replacement packaging, call Crest Audio's Customer Service.





## NexSys Module Basics and Installation

Although the Ci Power Processing amplifiers are venerable audio workhorses in their own right, the true breadth of their capabilities is only reached once they are tied into a NexSys amplifier network. In order for a Ci to capitalize on this network potential, it must be equipped with one or more of a series of NexSys modules. These modules reside in the Ci's module bay (see Amplifier Layout for the exact location of the module bay) and provide numerous control, monitoring, and signal processing features to the NexSys system. This section will cover installation of the three NexSys modules as well as important information concerning computer control of a NexSys system. The Nexsys Software Manual can also be downloaded from the Crest Audio website at this link: <http://www.crestaudio.com/media/pdf/nexman8-13-97.pdf>

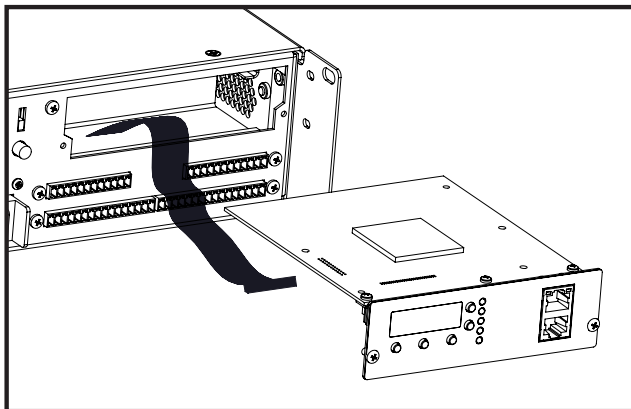
### Overview

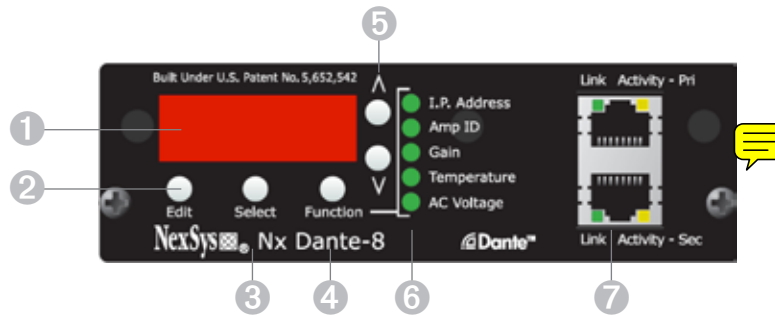
The extended capabilities of Ci amplifiers are reached when connected to a NexSys amplifier network via a NexSys module. These modules reside in the Ci's module bay and provide control, monitoring, and signal processing features. This section covers the installation of NexSys modules as well as information concerning computer control of a NexSys system.

### Module Installation

There are two modules through which a Ci amplifier can be connected to a NexSys network – the Nx Dante8 Module and Nx CobraNet8 Module. Although they have different feature sets, they both serve the networking function. Because of this, they are collectively referred to as “network modules.” The installation procedure for both is the same.

- 1 Remove the blank panel covering the Ci's module bay by removing the screws on either side of the panel. Save these screws, as they will be needed for fastening the network module.
- 2 Inside the exposed module bay you should see the ribbon cable connector on the amplifier's circuit board. Note of the way the connector is keyed, and position the ribbon cable to match. Insert the cable into the connector, with the opposite end hanging out of the module bay.
- 3 Position the network module right side up. Connect the exposed end of the ribbon cable to the connector on the module, again taking note of the keying of the connectors.
- 4 Slide the module into the bay, and fasten it to the Ci's chassis with the screws removed in Step #1.





## NexSys Modules

### Module Features

These following pages describe the buttons, indicators, connectors and functional components that are relevant to the two NexSys modules. These features exist on both the Nx Dante8 and Nx Cobranet8 Modules. Features specific to the Nx Cobranet8 Module are discussed later in this section.

#### 1 4-character Display

The LED display shows the value of the current parameter for the function chosen. The selected Function is indicated by the corresponding LED.

#### 2 Edit Button

Enables and disables editing of a function parameter. When pressed, the value in the display will flash, indicating that edit mode has been entered. The value can now be adjusted using the increment and decrement buttons. Pressing Edit again will register the value and stop the flashing of the display.

#### 3 Select Button

When a function parameter exists for both channels independently (e.g. Gain, Temperature), this button changes between the parameter values for Channel A and Channel B. This button is also used to select parameters within a given function.

#### 4 Function Button

This button scrolls through the functions that can be controlled from the module panel including: I.P. Address, Amp ID, Gain, Temperature, AC Line Voltage. As each is selected, the corresponding LED will light and the appropriate function parameter will appear in the display.

#### 5 Increment/Decrement Buttons

When the module is in edit mode and the value in the display is flashing, the increment and decrement buttons will adjust the value.

#### 6 Function LEDs

Each of the main functions has a corresponding LED. When a function is selected, this LED will light to identify the selection. Some secondary functions do not have an associated LED, so no LED will light when these functions are selected.

#### 7 RJ-45 Network Connector

The RJ-45 connector allows connection of the Ci amplifier to an Ethernet network. The jack accommodates a standard male RJ-45 connector.

### Data & Link LEDs

The Data LED will flash when data packets are being sent or received by the module.

Edited values are not saved while incrementing/decrementing. The value being edited is saved when exiting edit mode.



The Link LED will light when the module detects that it is connected to an Ethernet network.

## Module Operation

The following pages contain information on how to operate the NxEthernet and Nx CobraNet modules. The NexSys functions that can be controlled from the amplifier's rear panel will be explained. After working through this section, you should have an understanding of the network modules' operation through hardware. For more on software control of the modules' features, see the NexSys Manual.

The instructions in this section assume that a module has been mounted in the Ci amplifier and the user has a working knowledge of the module's control panel layout.

## Making Network Connections

The Network modules are connected to the network via standard CAT-5 Ethernet cabling using an RJ-45 connector. When the cable has been physically connected to the module and to an active network device, the "Link" LED will illuminate.

## Setting IP Addresses

Press the Function button until the LED next to I.P.Address illuminates. Once the function has been chosen, depressing the Select button will scroll through the four octets of the I.P.Address. The position of the decimal point in the numeric display designates which octet has been selected. If the decimal point is to the left of all three digits, then the first octet is being displayed. If the decimal is between the first and second digit, the second octet is being displayed and so on. Once the appropriate octet has been selected, press the Edit button. The octet value will begin flashing. Press the increment and decrement buttons to change the octet value. There are 256 possible values for each octet, ranging from 0 to 255. Once the correct value has been reached, press the Edit button again to register the value and exit edit mode. If another octet value must be changed, select it using the Select button and repeat the editing procedure. Setting the I.P.Address to 000.000.000.000 will enable DHCP for this amplifier. Under this setting a connected DHCP server will dynamically assign an I.P.Address to the amplifier.

## Setting Amplifier ID

Use the Function button to choose Amp ID. Each Amp ID is composed of two, two-digit hexadecimal values (see Appendix C for more information on Hex Numbering). The upper two digits (the High Value) and the lower two digits (the Low Value) can be independently adjusted. For this function, the Select button toggles between these two values.

Select a value for adjustment, and press Edit. The selected portion of the ID will flash, and the increment and decrement keys can now be used to adjust the value. An amplifier's I.P.Address can be used to designate an amp in a network, however Amp ID is more useful for designation, particularly when DHCP is being used.

## Network Examples

### NexSys Modules 7

Amplifier IDs can remain fixed even if I.P.Address change, making the amplifier's settings and operating conditions easier to track. Additionally, creative use of the High and Low Values in the Amp ID can provide even more information about an amplifier. Since the two values can be adjusted independently, the High Value could

Not all function parameters can be adjusted (e.g.AC Line Voltage, Temperature, etc.) as they are output values only.



Firmware revision 0.2.61 and later allows two speed value editing. For example, when setting the IP Address on the module, first select the IP Address octet to be edited. Then press the "Edit" button. Next, press the up/down arrow to increment/decrement the value at a slow speed. Or, press the up or down arrow in conjunction with the "Function" button to increment/decrement the value at a faster speed.



Note: For instructions on I.P.Addresses, designing and setting up a complete network, please see Appendix C:



be used to designate a group of amplifiers, while the Low Value would identify specific amplifiers in that group.

### **Adjusting Gain**

Use the Function button to choose Gain. In this mode, the Select button chooses between Channel 1 thru 8. With the proper channel selected, press the Edit button. The increment and decrement buttons will now adjust the channel's gain. If the channel has been muted by NexSys, the first press of either the increment or decrement will bring the channel out of mute and return its previous value. Subsequent presses will adjust the gain value. Once the gain has been adjusted, pressing the "Edit" button again will lock in the value and the display will stop flashing. Gain values are listed in dB, from 0 (unity) to -80. The setting of the amplifier's attenuators will also affect the overall gain. The attenuators are positioned after the NexSys gain control in the amp's gain structure resulting in an additive attenuation value. For example, if an attenuator is set to -6dB, and the NexSys gain for that channel is set to -10dB, the amplifier's overall gain will be 16dB below the amplifier's maximum output.

### **Condition Monitoring**

These functions do not make use of the Edit and increment/decrement buttons. They simply provide information concerning the amplifier's operating condition.

### **Temperature**

Use the Function button to choose Temperature. The internal ambient temperature of the amplifier will be displayed with a designation of "F" for degrees Fahrenheit or "C" for degrees Celsius. To change the units that the temperature is displayed in, press the Select button.

### **AC Line Voltage**

Use the Function button to choose AC Voltage. The AC line voltage will be displayed.

### The Amp ID's

The Amp ID's given to each amplifier in a NexSys system are composed of two independently adjustable two-digit hexadecimal values. It is not necessary to fully understand hexadecimal numbering in order to set an Amp ID, but it is helpful to know. Also, when the numeric display reads "AE," the operator will realize this is a completely normal number when working in hex, and there is no cause for alarm!

Hexadecimal or "hex" numbering is a system of counting widely used in digital technology and in the design of digital systems. This is largely because of its close relationship to binary numbering, which is the counting scheme that makes up the fundamentals of all digital technology. Hexadecimal is a Base-16 numbering system, as opposed to binary, which is Base-2, or our comfortable, everyday decimal numbering system, which is Base-10.

The "base" of a numbering system is simply the number of digits in the system. For example, the garden-variety decimal system has ten digits ("0," "1," "2," "3," "4," "5," "6," "7," "8," and "9") and therefore we say it is a Base-10 system. Binary, as the name implies, has only two digits – the lowly "1" and the humble "0." However, these two digits can still be used to represent infinitely large numbers just as effectively as the decimal system. In fact, while most humans think in terms of the decimal system, computers and digital devices "think" in terms of the binary system.

Hex uses sixteen digits – all of the numerals used in the decimal system, plus the first six letters of the alphabet. Therefore, counting from zero in hex one has "0," "1," "2," "3," "4," "5," "6," "7," "8," "9," "A," "B," "C," "D," "E," and "F." Remember, the digits are just symbols representing a value – they could be numerals, letters, hieroglyphs, dots of different colors, anything. This is important to keep in mind, because many systems (including the three mentioned here) just so happen to use many of the same symbols, however in the different systems they may not always represent the same value. This is where confusion often arises, and it is an issue that will be address shortly.

Counting in the decimal system, once "9" is reached there are no more different symbols to use. The solution is to start combining digits in a logical fashion, by adding a new placeholder. The result is the number "10." The value in this new place is worth ten times the placeholder to its right, and as we all know we can continue this pattern indefinitely. However, the reason each value is worth ten times the placeholder to its right is because decimal is a Base-10 numbering system. This is not a hard and fast rule, although it may seem to be because the Base-10 (decimal) system is used almost exclusively in day-to-day life. However, in Base-2 for example, each placeholder is worth two times the placeholder to its right, and in Base-16, sixteen times.

### Here is the decimal example described:

$$10 = (1 * \text{ten}) + (0 * \text{one}) = \text{ten}$$

Likewise, other decimal values:

$$\begin{aligned} &35 \\ &= (3 * 10) + (5 * 1) \\ &= 30 + 5 \\ &= 35 \end{aligned}$$

$$\begin{aligned} &528 \\ &= (5 * 100) + (2 * 10) + (8 * 1) \\ &= 500 + 20 + 8 \end{aligned}$$

$$\begin{aligned}
 &= 528 \\
 &\quad 2046 \\
 &= (2*1000) + (0*100) + (4*10) + (6*1) \\
 &= 2000 + 000 + 40 + 6 \\
 &= 2046
 \end{aligned}$$

However, since this is really only converting decimal back into decimal, it is of limited usefulness. Retaining the above concepts and applying it to the other numbering systems makes things much more clear. Looking at Base-2, digits are in very short supply. Counting from zero, one has "0," "1," and then one must start again. Add a placeholder, and again the result is "10." However, now "10" represents two, not ten. The "1" in "10" binary has a value of two times the place to its right, and the place to its right has a one's value.

Analyzing this example with the approach used above:

$$10 = (1*\text{two}) + (0*\text{one}) = \text{two}$$

It becomes readily apparent that "10" does not always represent "ten," it is entirely dependent on the base of the numbering system being used. Other binary values:

$$\begin{aligned}
 &100011 \text{ b} \\
 &= (1*32) + (0*16) + (0*8) + (0*4) + (1*2) + (1*1) \\
 &= 32 + 0 + 0 + 0 + 2 + 1 \\
 &= 35
 \end{aligned}$$

$$\begin{aligned}
 &1000010000 \text{ b} \\
 &= (1*512) + (0*256) + (0*128) + (0*64) + (0*32) + (1*16) + (0*8) + (0*4) \\
 &+ (0*2) + (0*1) \\
 &= 512 + 0 + 0 + 0 + 0 + 16 + 0 + 0 + 0 + 0 \\
 &= 528
 \end{aligned}$$

$$\begin{aligned}
 &1111111110 \text{ b} \\
 &= (1*1024) + (1*512) + (1*256) + (1*128) + (1*64) + (1*32) + (1*16) + (1*8) \\
 &+ (1*4) + (1*2) + (0*1) \\
 &= 1024 + 512 + 256 + 128 + 64 + 32 + 16 + 8 + 4 + 2 + 0 \\
 &= 2046
 \end{aligned}$$

Of course, a similar approach can be applied to hex. However, this time there are more digits than in decimal. Now, counting to "9" is the same as in decimal, but it is possible to continue on with "A," "B," "C," "D," "E," and "F." It is only once "F" is exceeded that a new placeholder is required, and it will of course have a value sixteen times that of the placeholder to its right. If we use our example of "10" again, the "1" is worth sixteen, so the number represented in this case is sixteen.

Approaching "10" with the above method in hex:

$$10 = (1*\text{sixteen}) + (0*\text{one}) = \text{sixteen}$$

Yet another proof that "10" does not always mean "ten." Here are other hex



examples:

$$\begin{aligned}
 &23 \text{ h} \\
 &= (2*16) + (3*1) \\
 &= 32 + 3 \\
 &= 35 \\
 &210 \text{ h} \\
 &= (2*256) + (1*16) + (0*1) \\
 &= 512 + 16 + 0 \\
 &= 528 \\
 &7FE \text{ h} \\
 &= (7*256) + (15*16) + (14*1) \\
 &= 1792 + 240 + 14 \\
 &= 2046
 \end{aligned}$$

## Wire Gauge

Stranded Cable Length	Wire Gauge	8 Ω load	4 Ω load	2 Ω load	Stranded Cable Length	Wire Gauge	8 Ω load	4 Ω load	2 Ω load
<b>2</b> meters	0.3mm <sup>2</sup>	2.9%	5.6%	10.8%	<b>5</b> feet	18AWG	0.81%	1.61%	3.2%
	0.5	1.74	3.4	6.7		16	0.51	1.02	2.0
	0.75	1.16	2.3	4.5		14	0.32	0.64	1.28
	1.5	0.58	1.16	2.3		12	0.20	0.40	0.80
	2.5	0.35	0.70	1.39		10	0.128	0.25	0.51
	4.0	0.22	0.44	0.87					
<b>5</b> meters	0.5mm <sup>2</sup>	4.3%	8.2%	15.5%	<b>10</b> feet	18AWG	1.61%	3.2%	6.2%
	0.75	2.9	5.6	10.8		16	1.02	2.0	4.0
	1.5	1.45	2.9	5.6		14	0.64	1.28	2.5
	2.5	0.87	1.74	3.4		12	0.40	0.80	1.60
	4	0.55	1.09	2.2		10	0.25	0.51	1.01
	6	0.37	0.73	1.45					
<b>10</b> meters	0.5mm <sup>2</sup>	8.24%	5.5%	28%	<b>40</b> feet	18AWG	6.2%	11.9%	22%
	0.75	5.6	10.8	19.9		16	4.0	7.7	14.6
	1.5	2.9	5.6	10.8		14	2.5	5.0	9.6
	2.5	1.74	2.9	6.7		12	1.60	3.2	6.2
	4	1.09	1.74	4.3		10	1.01	2.0	4.0
	6	0.73	1.09	2.9		8	0.60	1.20	2.4
<b>30</b> meters	0.75mm <sup>2</sup>	15.5%	0.73%	45%	<b>80</b> feet	18AWG	11.9%	22%	37%
	1.5	8.2	15.5	28		16	7.7	14.6	26
	2.5	5.1	9.8	18.2		14	5.0	9.6	17.8
	4	3.2	6.3	12.0		12	3.2	6.2	11.8
	6	2.2	4.3	8.2		10	2.0	4.0	7.7
	10	1.31	2.6	5.1		8	1.20	2.4	4.7

**This document explains the fault codes and versions displayed on the front and rear panel LED's during the initialization process of Ci amplifiers..**

When power switch is turned to the "On" position, the amplifier begins an initialization process.

This process has three phases:

1. All LED's On
2. Amp Faults and Version on LED's
3. Channel initialization

The "All LED's On" phase occurs first when power is turned "On". All the LED's will light for about one second.

Then the Signal LED's will display the revision of the amplifier firmware (which is separate from the NexSys module firmware) and the "Mute" LED's will display any amplifier faults. If there are no faults, all of the "Mute" LED's will be off.

Please note the following faults for 8 channel Ci amplifiers:

- CH1 Mute LED: Amplifier Heatsink Thermal Fault or Transformer Thermal Fault
- CH2 Mute LED: Reserved
- CH3 Mute LED: 5V and 3.3V Monitor Fault
- CH4 Mute LED: AC Line Voltage Fault
- CH5 Mute LED: FET Driver Voltage Fault
- CH6 Mute LED: +/- High Voltage Fault
- CH7 Mute LED: Unregulated 15V Fault
- CH8 Mute LED: -5V Fault

Please note the following faults for 4 channel Ci amplifiers:

- CH1 Mute LED: Amplifier Heatsink Thermal Fault and/or Transformer Thermal Fault
- CH2 Mute LED: 5V and/or 3.3V Monitor Fault and/or AC Line Voltage Fault
- CH3 Mute LED: FET Driver Voltage Fault and/or +/- High Voltage Fault
- CH4 Mute LED: Unregulated 15V Fault and/or -5V Fault

The Amp Faults and Version phase will be displayed for a minimum of one second or as long as faults are active. The lit Signal LED's represent the binary version number. Once all the faults are cleared, the amplifier will continue to the "Channel Initialization" phase.

Next, all the "Signal", "ACL/IGM" and "Fault" LED's will shut off and each channel will sequentially initialize. During "Channel Initialization", the signal and ACL/IGM LED will light and then they will all turn off. The channel is now active.

A distributed or constant voltage system, as shown in the figure below, uses loudspeaker step-down transformers for each speaker. The transformers are designed to deliver a specific power level into a specific load impedance when a specific voltage (the example here uses 70.7 volts) appears at the primary. A speaker transformer usually has taps on its primary, secondary, or both, so it can be used for several different power levels or speaker impedances. Each speaker step-down transformer converts the low impedance of its loudspeaker to a relatively high impedance as seen by the distributed line. Consequently, loads can be added or subtracted to the distributed line with very little effect on the actual line voltage, hence the term "constant voltage." The actual line load Z that the amplifier "sees" is determined by the formula

$$Z = V^2/P$$

where P is the sum of the loudspeaker power taps, compensated for transformer insertion loss;

( $P = X [xfrmr\#1] * P [speaker\#1] + X [xfrmr\#2] * P [speaker\#2] + \dots$ ), and V is the distributed line voltage. So, for a 70.7 volt line,

$$Z = (70.7)^2 / P$$

$$Z = 5000 / P$$

For example, if the total power demanded by the speakers is 200 watts, then:

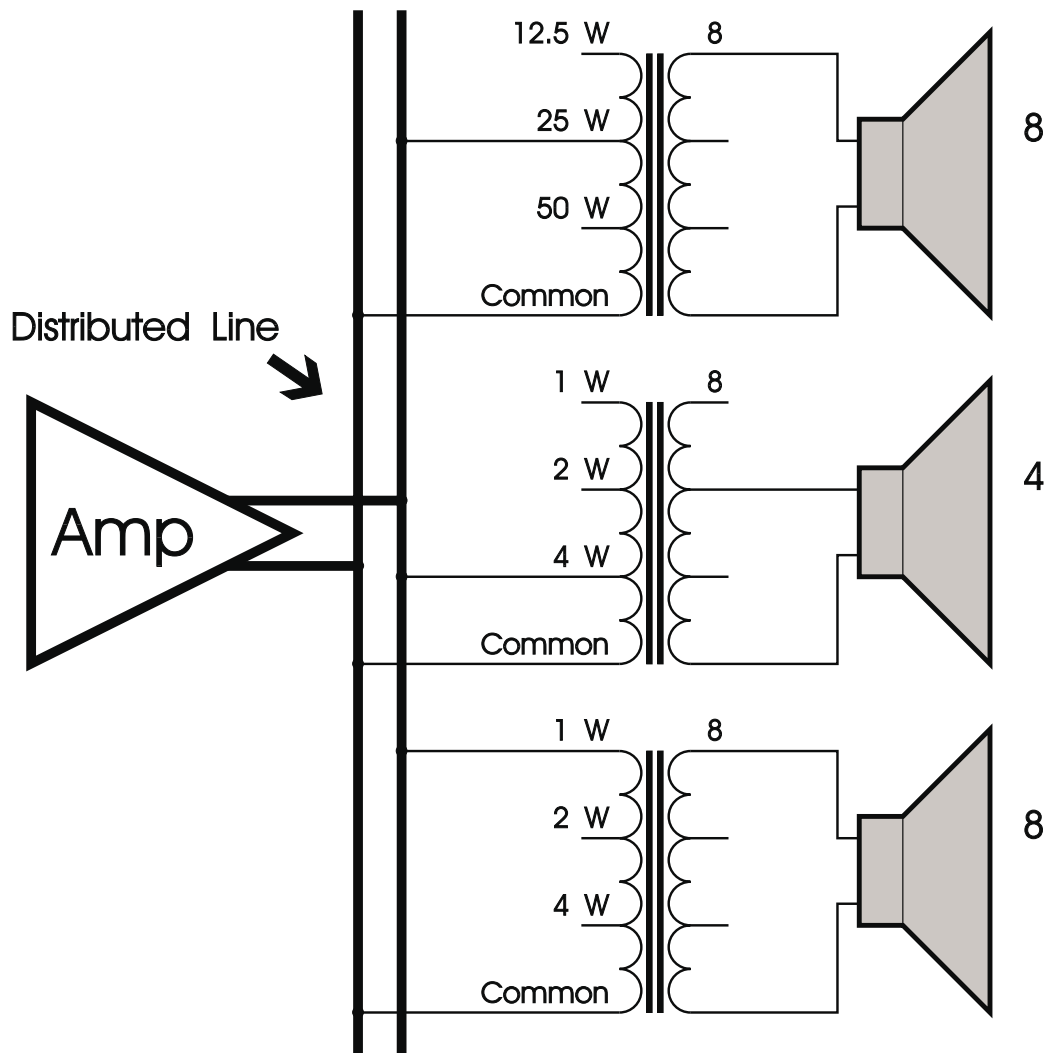
$$V^2/P = 25$$

The compensation factor for transformer insertion loss is:

$$x = \text{power drawn from distributed line}$$

$$\text{power delivered to speaker} = 10 \text{ Insertion loss (in dB)} / 10$$

Therefore, a speaker transformer with an insertion loss of 1 dB, tapped at 4 watts, will actually demand 1.26 times 4 watts, or about 5 watts. Ci Series amplifiers are specifically designed for use with distributed or constant voltage systems. Each Ci Series model can drive up to eight distributed lines (one per channel) of the type for which they are configured, any number of tapped loudspeakers can be placed on a line as long as the total demanded power including insertion losses does not exceed the rated power of the model chosen. If the impedance of a distributed line overly stresses the amplifier output stage, the amplifier's IGM protection circuits engage, reducing gain in order to protect the amplifier.





(Ci 20x8 model shown)

Power Ratings	Dual		Bridged	
	8Ω	70 volt	16Ω	140 volt
<b>Ci 20x8</b>	200 w	200 w	400 w	400 w
<b>Ci 30x4</b>	300 w	300 w	600 w	600 w

1kHz, 0.02% THD+N Power figures are watts per channel, all channels driven.

## FEATURES OVERVIEW:

- Four- and eight-channel versions available (100-volts isolated outputs with optional accessories).
- Individual channels may be selected as low impedance or 70 volt
- TourClass® protection
- Front and rear panel indicators for amplifier status
- Variable-speed fan
- Sequential turn-on standard
- Euro-style input connectors
- Barrier strip output connectors
- One controlled-voltage input per channel standard
- One fault relay per channel standard
- Module bay provided to input Nx module bay accessories for full amplifier control and monitoring via NexSys® 4 software or MediaMatrix® product and digital audio distribution
- The outputs of the Ci 30x4 and Ci 20x8 can be isolated and converted to 100V or 50V with the optional CMX4-50/CMX4-100/CMX8-50/CMX8-100 accessories, respectively.

- EN60849 and ANSI60849 compliant with optional accessories.

## **DESCRIPTION:**

The Ci Series is the next generation family of elevated efficiency amplification from Crest Audio. Ci amplifiers are designed to drive low-impedance or 70-volt speaker loads without bridging between channels. Bridged operations are supported for additional power into 8-ohm loads or 140-volt operation.

As with all Crest Audio products, sonic performance is of primary importance. In addition, high-efficiency, comprehensive load protection and compact packaging have been achieved in the Ci design.

The Ci Series amplifiers incorporate Crest Audio's tried-and-true modular approach to intelligent amplifier configuration. Through the provision of a single module bay, these amplifiers comes with a module that facilitates load monitoring, digital audio delivery and Crest Audio's NexSys networking.

A full complement of features and options makes this series very versatile, whether powering airport systems, restaurant audio or a myriad of other applications. The Ci Series amplifiers bring a new generation of amplification to Crest Audio.

# Product Specifications



**frequency response 1W @ 8 ohms** 5 Hz to 20 kHz, +/-1 dB  
**power bw rated power @ 4 ohms, 1% THD+N** 20 Hz to 20 kHz, +/-1 dB  
**THD + N** <0.02% @ rated power (@ 70 volt, 1kHz)  
**damping factor** 200:1 @ 8 ohms (20 Hz to 100 Hz)

**input CMRR** >60 dB @ 1kHz  
**gain / input sensitivity @ 70 volts** 1.41 volts for full rated output power (70V sensitivity)  
**gain / input sensitivity @ 8Ω** 1.0 volts for full rated output power (Low Z switch selected)  
**input impedance** >20 kohms balanced, > 10 kohms unbalanced  
**hum and noise** > -97 dB, A-weighted below rated power @ 8 ohms  
**crosstalk** > -60 dB below max rated power (1 kHz)  
**power supply** Linear with toroid transformer

	<b>Ci 30x4</b>	<b>Ci 20x8</b>
<b>circuit breaker rating (120V/230V)</b>	6A / 3A	12A / 6A
<b>current draw (120VAC) 1/8 power, 70 volts</b>	3A	5A
<b>1/3 power, 70 volts</b>	6A	10A
<b>at idle</b>	<1.0A	<2.0A
<b>thermal emissions 1/3 Power, 70 volts btu / hr</b>	621	947

**cooling** Front to side via variable speed fan  
**input connectors** balanced three-pin Euro-style (rear panel)  
**output connectors** barrier strips (rear panel)  
**power sequence connectors** 2 X three-pin Euro-style (rear panel)  
**fault connectors** three-pin Euro-style (rear panel)  
**control voltage connectors** two-pin Euro-style (rear panel)  
**controls** front panel: three-position On / Off / Remote power switch  
 rear panel: stepped attenuators, 70V/Low Z switch, dual/bridged switch, circuit breaker  
**LED indicators** front and rear panels: Signal, ACL/IGM, Protect, Active, Power Present  
**construction** 16-gauge steel chassis, double thickness in rack ear areas  
**dimensions (h x w x d)** 3.5" x 19" (front panel) 17" (chassis) x 17.3" (18.55" to rack ears)  
**warranty** five years \*U.S.A., Canada, United Kingdom and many other countries

Crest Audio reserves the right to make improvements in manufacturing or design which may affect specifications.





[www.peaveycommercialaudio.com](http://www.peaveycommercialaudio.com)

Warranty registration and information for U.S. customers available online at  
[www.peaveycommercialaudio.com/warranty](http://www.peaveycommercialaudio.com/warranty)  
or use the QR tag below



Features and specifications subject to change without notice.

Crest Audio 5022 HWY 493 N. Meridian, MS 39305 (601) 483-5365 FAX (601) 486-1278



Logo referenced in Directive 2002/96/EC Annex IV  
(OJ(L)37/36,13.02.03 and defined in EN 50419: 2005  
The bar is the symbol for marking of new waste and  
is applied only to equipment manufactured after  
13 August 2005