

**801**  
**Mic/Line Mixer**  
**Operation Manual**



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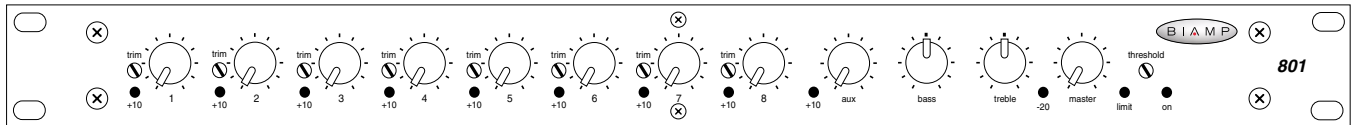
**INTRODUCTION**

The **801** is a single rack-space mixer, with eight mic/line inputs and one auxiliary line input. Each mic/line channel uses a differentially balanced, discrete transistor preamplifier for low noise and low distortion performance. Special features, including a limiter and remote level control, make the **801** extremely versatile. The **801** mixer is dependable, easy to install, simple to operate, and carries a five-year warranty.

**801** features include:

- ◆ eight differential balanced mic/line inputs & one aux line input
- ◆ discrete transistor mic/line preamps for low noise & distortion
- ◆ optional mic/line input isolation transformers (user installed)
- ◆ +24 volt phantom power selectable on each mic/line input
- ◆ optional +48 volt phantom power supply (user installed)
- ◆ aux input switch selectable for balanced or stereo summing
- ◆ aux input 'auto-ducking' switch selectable on channels 1-8
- ◆ front panel trim and rear panel pad switch on each channel
- ◆ +10dB 'peak' LED indicator on each channel for easy set-up
- ◆ high-pass 'rumble' filter switch selectable on each channel
- ◆ mic/line & aux inputs on plug-in barrier strip connectors
- ◆ 1/4" patch insert jack on each channel and at main output
- ◆ balanced main output on plug-in barrier strip connector
- ◆ main output limiter with threshold control and LED indicator
- ◆ main out Bass & Treble control with rear panel bypass switch
- ◆ -20dB signal present & power LED indicators at main output
- ◆ channel 1 / priority override via rear panel switch terminals
- ◆ optional remote control of main out via external level control
- ◆ optional main output isolation transformer (user installed)
- ◆ stack in & slave switch to add inputs by linking multiple units
- ◆ DC Out jack for powering certain other BIAMP products
- ◆ covered by Biamp Systems' five-year warranty
- ◆ CE marked and UL / C-UL listed power source

## FRONT PANEL



**+10 Indicator** (Channels 1~8 & Aux): These red LEDs will light whenever channel signal levels reach +10dB (8dB below clipping). Use this feature to aid in adjusting the Trim controls (see below).

**Trim** (Channels 1~8): These screw-driver adjustable controls set the channel gain (0~60dB) to compensate for different input signal levels. For best performance, adjust these controls so the channel +10 indicators flash only on occasional peaks. If input signal exceeds the normal operating range of the Trim control, assign the rear panel Pad switch (see DIP switches on next page).

**Level** (Channels 1~8 & Aux): These controls adjust the amount of signal sent from the individual input channels to the mixer output section. Optimum Level settings are near the 12 o'clock position (unity gain).

**Bass:** This control provides low-frequency tonal adjustment ( $\pm 10$ dB @ 100Hz) for signals at Main Patch & Main Output.

**Treble:** This control provides high-frequency tonal adjustment ( $\pm 10$ dB @ 10kHz) for signals at Main Patch & Main Output.

**-20 Indicator:** This red LED will light whenever signal levels reach -20dB (signal present) at Main Output.

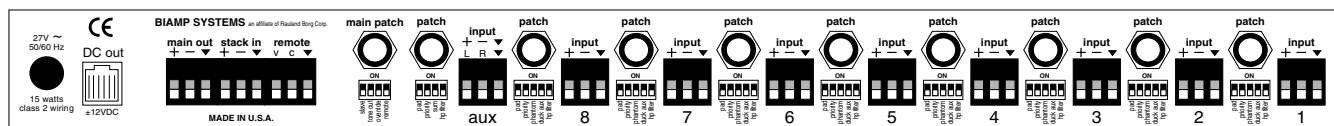
**Master:** This control adjusts the level of overall signal sent to Main Output. Optimum Master settings are near the 12 o'clock position (unity gain) or below.

**Threshold:** A limiter is provided at Main Output to help eliminate unwanted peaks in signal level. This screw-driver adjustable control sets the level at which the limiter will be activated. For most applications, set Threshold so the limiter is activated only by occasional peaks. Counter-clockwise adjustment lowers Threshold, increasing the amount of limiting. Clockwise adjustment raises Threshold, decreasing the amount of limiting. Threshold is factory set fully clockwise, effectively removing the limiter from operation.

**Limit:** This red LED will light whenever signal levels exceed the threshold, thereby activating the limiter.

**On Indicator:** When the power transformer is plugged in, and AC power is applied to the 801, the red On indicator remains lit.

## REAR PANEL



**AC Power Cord:** The power transformer provides 27 Volts AC to the mixer, and is detachable via a 5-pin DIN connector. The mixer has two internal ‘self-resetting’ fuses (there are no user serviceable parts inside the unit). If the internal fuses blow, they will attempt to re-set after a short period. However, this may be an indication that the mixer requires service.

**DC Out:** This 6-pin RJ11 modular jack supplies ±12 Volts DC (100mA max.) for powering certain other BIAMP products, or other external devices (see product manuals for power considerations). Manual triggering of Channel 1 Override is also provided at the DC Out jack, by shorting pins 3 & 6 together using an external contact-closure (see Options on pg. 4). Channel 1 Override can be triggered automatically, by signal present in Channel 1, as well (see Master DIP switches below).

**Main Output:** This plug-in barrier strip provides the balanced line-level Main Output from the mixer. An output isolation transformer (model IT-B) is available as a user installed option (see Options on pg. 4). For balanced connection, wire high (+), low (-), and ground (▼). For unbalanced connection, wire high (+) and ground (▼), leaving (-) unconnected. Signal level will be reduced by 6dB when output is unbalanced. Main Output level is affected by the front panel Master control, as well as by remote control (see Remote below).

**Stack In:** This plug-in barrier strip provides the balanced line-level Stack In to the mixer. Signal entering here is combined with signals from the input channels, and is then sent to the Main Output section. When using multiple 801 mixers within a system, connect Main Output of one mixer to Stack In of the next mixer, and so forth. All mixers except the final 801 should be assigned as ‘slaves’ (see Master DIP Switches below). For balanced connection, wire high (+), low (-), and ground (▼). For unbalanced connection, wire high (+) and ground to both (▼) & (-).

**Remote:** This plug-in barrier strip provides connection for an optional remote master level control (model RP-L1) (see Options on pg. 4). An external potentiometer (5k~50k ohm linear taper) or external ramp voltage (0~+10VDC) can also be used. Potentiometers are wired high (V), wiper (C), and low (▼). Ramp voltage is wired positive (C), and ground (▼). The Remote port must be enabled before remote master level control is possible (see Master DIP switches below).

**Main Patch:** This 3-conductor TRS ¼” phone insert jack is for connection of other BIAMP products or external devices at the Main Output section. The Main Patch jack is pre-Master Level, and is wired Tip (send), Ring (return), and Sleeve (ground). Certain BIAMP products require a single TRS ¼” phone cable for connection. Other devices may require a special ‘Y’ cable. If a pre-Master Level output is desired, connect to Main Patch with Tip & Ring (send) and Sleeve (ground).

**Patch (Channels 1~8 & Aux):** These 3-conductor TRS ¼” phone insert jacks are for connection of other BIAMP products or external devices to the individual input channels. Patch jacks are pre-Channel Level, and are wired Tip (send), Ring (return), and Sleeve (ground). Certain BIAMP products require TRS ¼” phone cables for connection. Other devices may require special ‘Y’ cables. If a pre-Channel Level direct output is desired, connect to Patch with Tip & Ring (send) and Sleeve (ground).

**Input (Channels 1~8 & Aux):** These plug-in barrier strips provide the balanced mic/line Inputs to the mixer (*Channels 1~8 only*). Input isolation transformers (model IT-A) are available as a user installed option (see Options on pg. 4). For balanced connection, wire high (+), low (-), and ground (▼). For unbalanced connection, wire high (+) and ground to both (▼) & (-). Phantom power (+24VDC) is available (see DIP Switches below), with +48V phantom power as an option (model 48VPS) (see Options on pg. 4). The Aux input accepts either balanced mono line input or unbalanced stereo line input (see DIP switches below). Aux input cannot accept mic input signal, or the optional input isolation transformer, and does not provide phantom power.

**Master DIP Switches:** These switches assign functions to the mixer as a whole (when pushed up). Slave assigns the mixer as an expander to a ‘master’ mixer. Tone Out bypasses the front panel tone controls (Bass & Treble). Override allows automatic muting of all other inputs when signal is present in Channel 1. Remote allows remote control of Main Output level, by enabling the Remote terminals (see above).

**DIP Switches (Channels 1~8 & Aux):** These switches assign functions to the individual inputs (when pushed up). Pad attenuates channel signal -18dB (-10dB at Aux) for line input. Priority disables Channel 1 Override muting for that channel. Phantom (*Channels 1~8 only*) turns on phantom power (for condenser mics). Duck Aux (*Channels 1~8 only*) allows channel signal presence to activate -15dB attenuation at Aux input (ducking). HP Filter enables a high-pass filter on the input (6dB/octave @ 170Hz). Sum (*Aux only*) converts Aux from standard balanced input to stereo (L/R) summing input.

## OPTIONS

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**Override:** Channel 1 Override can be manually triggered by an external switch wired across pins 3 & 6 of the DC Out jack (see diagram on next page). Channel 1 Override can also be triggered automatically by signal present in Channel 1 (see Master DIP Switches on pg. 3). When additional 801 mixers are being used (for more inputs), pins 3 & 6 of the various DC Out jacks can be wired together (in parallel). This allows Channel 1 Override triggering (manual or automatic) to be transmitted to all 801 mixers in the system. The additional 801 mixers should be assigned as 'slaves' (see Master DIP Switches on pg. 3), which allows all channels (except Channel 1 of the 'master' 801 mixer) to be muted. If necessary, specific channels of the system may then be excluded from Channel 1 Override muting, by assigning them as 'priority' channels (see DIP switches on pg. 3).

**Remote:** The output level of an 801 mixer can be remotely controlled via an external potentiometer (5k-50k ohm linear taper) or ramp control voltage (0~+10VDC). An RP-L1 remote control panel is available as an option (see diagram on next page). Potentiometers are wired high (V), wiper (C), and low (▼). Ramp voltage is wired positive (C) and ground(▼). The Remote port of the 801 mixer must be enabled before remote control of output level is possible (see Master DIP Switches on pg. 3). Remote control does not change physical settings on the 801 mixer, it only attenuates from the maximum level settings established at the mixer.

**48 Volt Phantom Power:** The 801 mixer provides +24 Volts DC phantom power for condenser microphones (see DIP Switches on pg. 3). Most modern electret condenser microphones can operate using a wide range of phantom power voltages (typically 9-52VDC). Only rare circumstances (such as older or specialized microphones) will require anything greater than the standard +24VDC phantom power. However, if these circumstances should arise, an optional +48 Volt DC phantom power supply is available (model 48VPS). To install the optional 48VPS: simply separate the AC power cord at the 'in-line' DIN connector near the 801 chassis. Insert the 48VPS 'in-line' with the power cord, mating the DIN connectors of the 48VPS to the appropriate gender DIN connectors from the 801 chassis & the wall-mount power transformer. No other modification is needed. Phantom power is automatically converted to +48 Volts DC when selected at inputs.

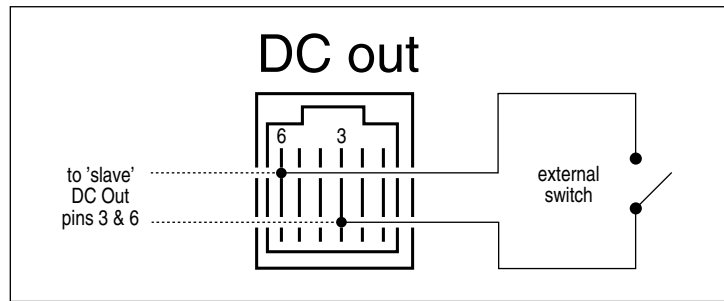
**NOTE:** *The 801 chassis must be disassembled before installing input/output transformers: 1) remove top panel (2 screws at bottom of each side panel; 1 screw at top-center of front panel; 1 screw at top-center of rear panel). 2) remove screws from front panel (2 screws at each end; 1 screw at bottom-center). 3) remove screws from rear panel (2 screws near Main Out/Remote connectors). 4) remove nuts & washers from rear panel (10 nuts & washers on Channel & Main Patch jacks). 5) remove mounting screws from circuit board (9 screws in front of input connectors; 2 screws behind channel 3 Level & master Treble controls). 6) gently pull circuit board forward (front panel comes forward; connectors exit rear panel). 7) rotate front panel/circuit board upward, away from chassis (leave rear portion of circuit board in chassis, being careful not to strain power cord connections).*

**Input Transformers:** To install input transformers (see diagram on next page): 1) locate the transformer positions on the circuit board (circle area located in front of input connector & DIP switches on each channel). 2) un-solder & remove the 2 capacitors located within each of the appropriate circle areas. 3) install & solder an input transformer at each of the appropriate circle areas (transformer pin 1, designated by a red dot, must be inserted into the proper hole, designated by a square).

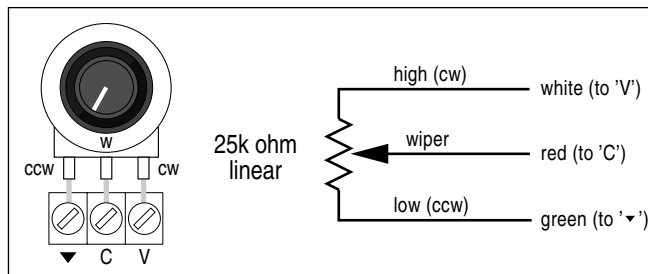
**Output Transformer:** To install output transformer (see diagram on next page): 1) locate the transformer position on the circuit board (rectangle area located in front of Main Output connector). 2) un-solder & remove the 2 capacitors located within the rectangle area. 3) install & solder the output transformer at the rectangle area (transformer pin 1, designated by a red dot, must be inserted into the proper hole, designated by a square).

# OPTIONS

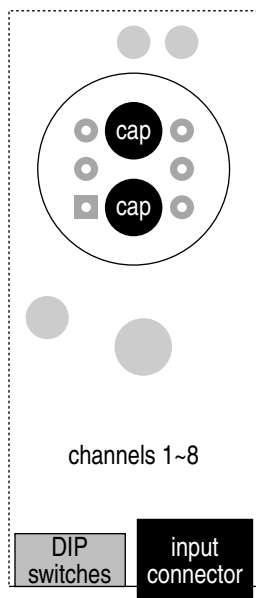
## VERRIDE



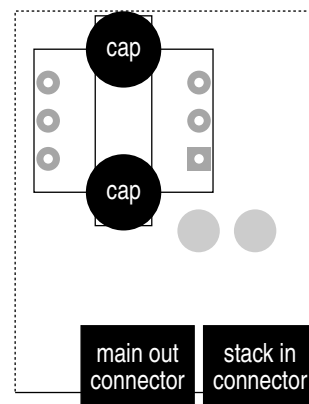
## REMOTE



## INPUT TRANSFORMERS

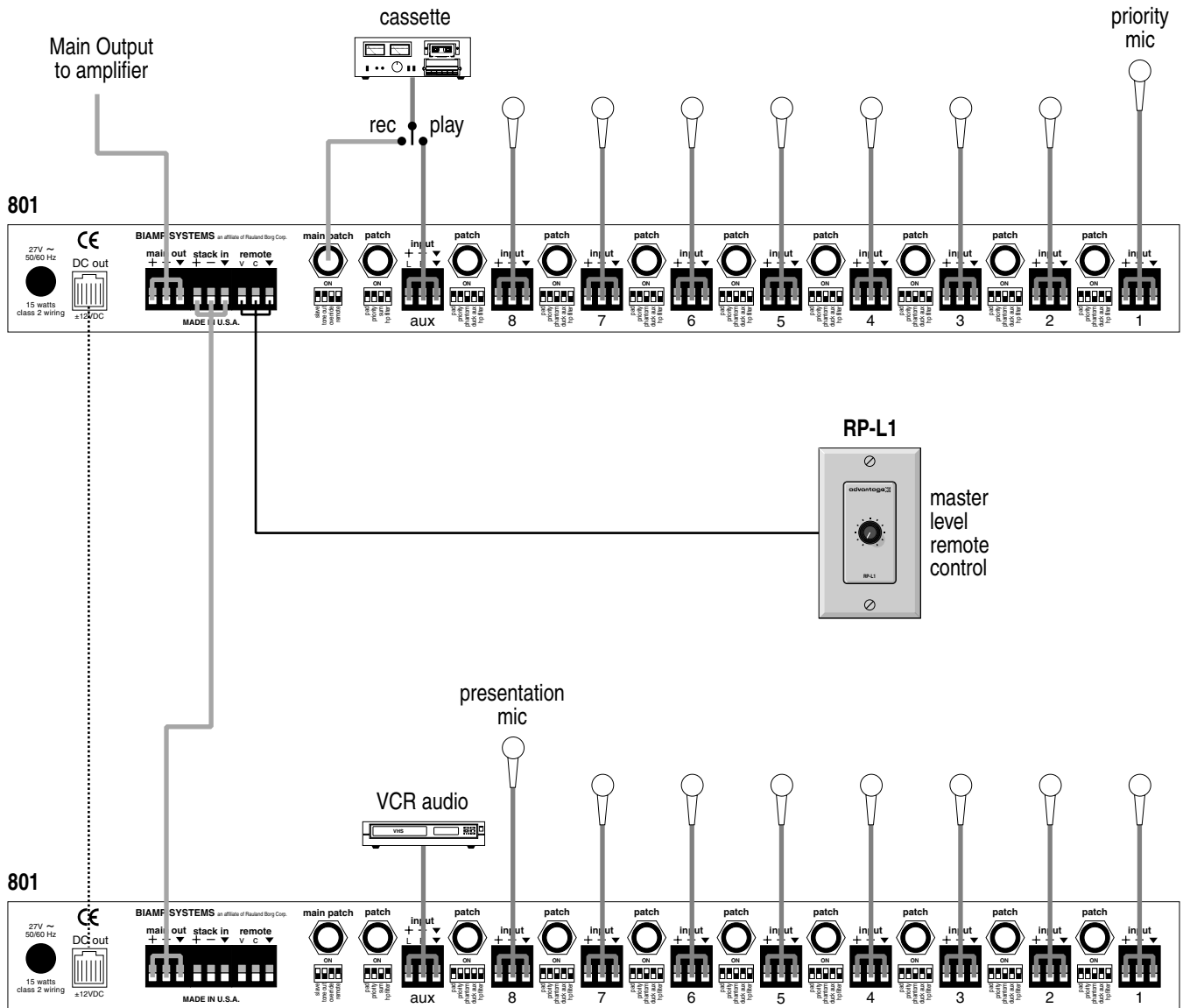


## OUTPUT TRANSFORMER



# APPLICATIONS

## 18-Input Mixer with Override, Ducking, Remote Level, & Recording

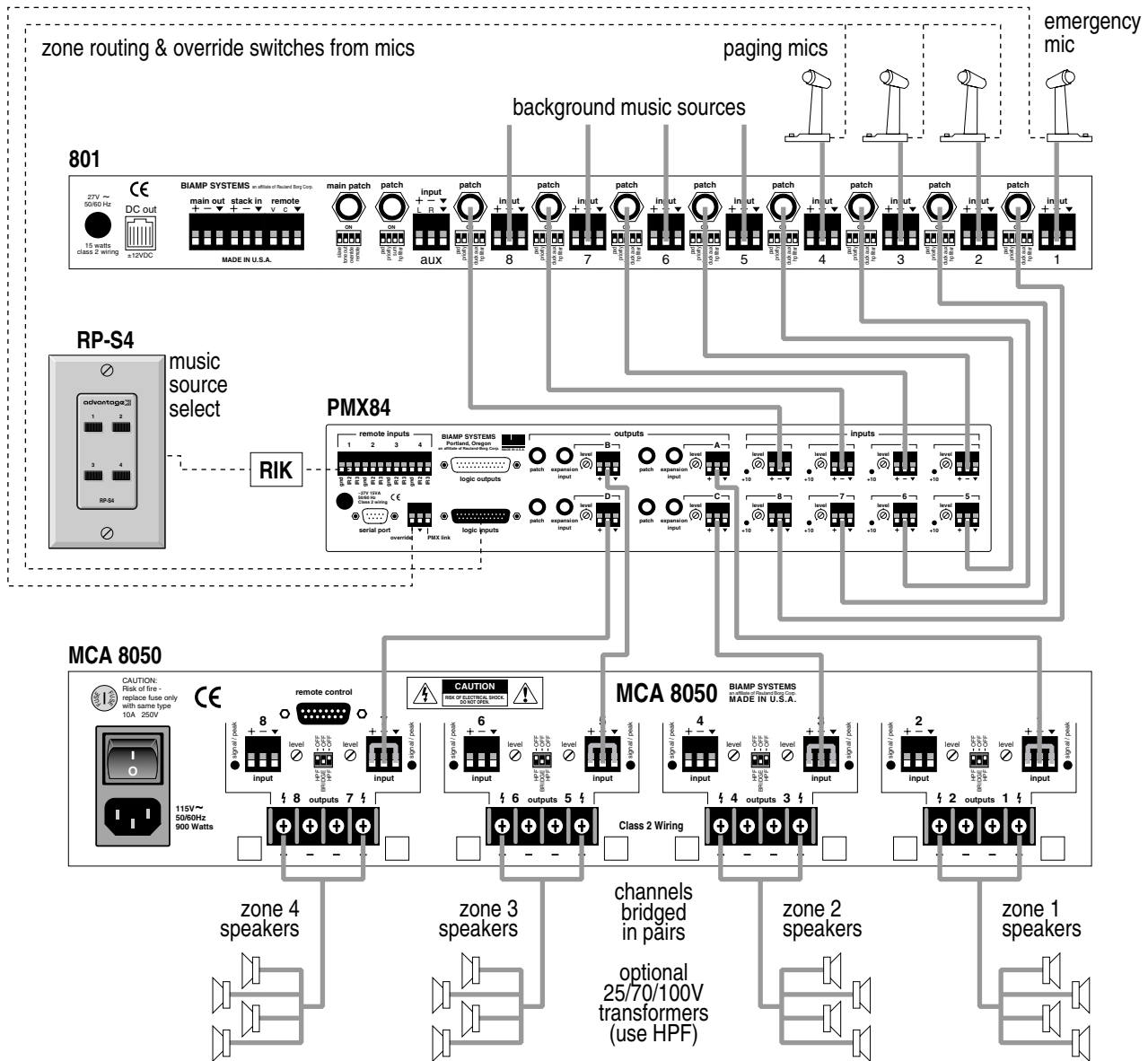


This application shows two 801 mixers being used together to create an eighteen input mixing system. Main Output of the bottom unit is connected to Stack In on the top unit, which then provides all channel signals at its Main Output. All mic inputs have phantom power (for condenser mics) and high-pass filter (for speech signals) assigned. Playback signal from cassette is connected to the Aux input on the top unit, which is set to sum the stereo signal. Record signal for cassette is derived (pre-Master level) from Main Patch, using a 3-conductor plug wired with Tip & Ring (signal) and Sleeve (ground). An external switch allows either playback or record, thereby preventing cassette feedback during recording. The top unit is set for remote, and an RP-L1 is connected to the Remote port to control output level. The top unit is also set for override, which allows signal in Channel 1 to override the other inputs. Connecting DC Out (pins 3 & 6) from one unit to the other allows Channel 1 to override inputs on the bottom unit as well. The bottom unit is set for slave, which both defeats its output level control and allows Channel 1 of the top unit to override Channel 1 of the bottom unit. Tone Out is also assigned on the bottom unit, to avoid redundant controls. Playback signal from VCR is connected to the Aux input on the bottom unit, which is set to sum the stereo signal. Channel 8 on the bottom unit is set for priority & duck aux, which both prevents Channel 1 override of this input and allows signal in Channel 8 to cause ducking (attenuation) of the Aux input (VCR) signal.



# APPLICATIONS

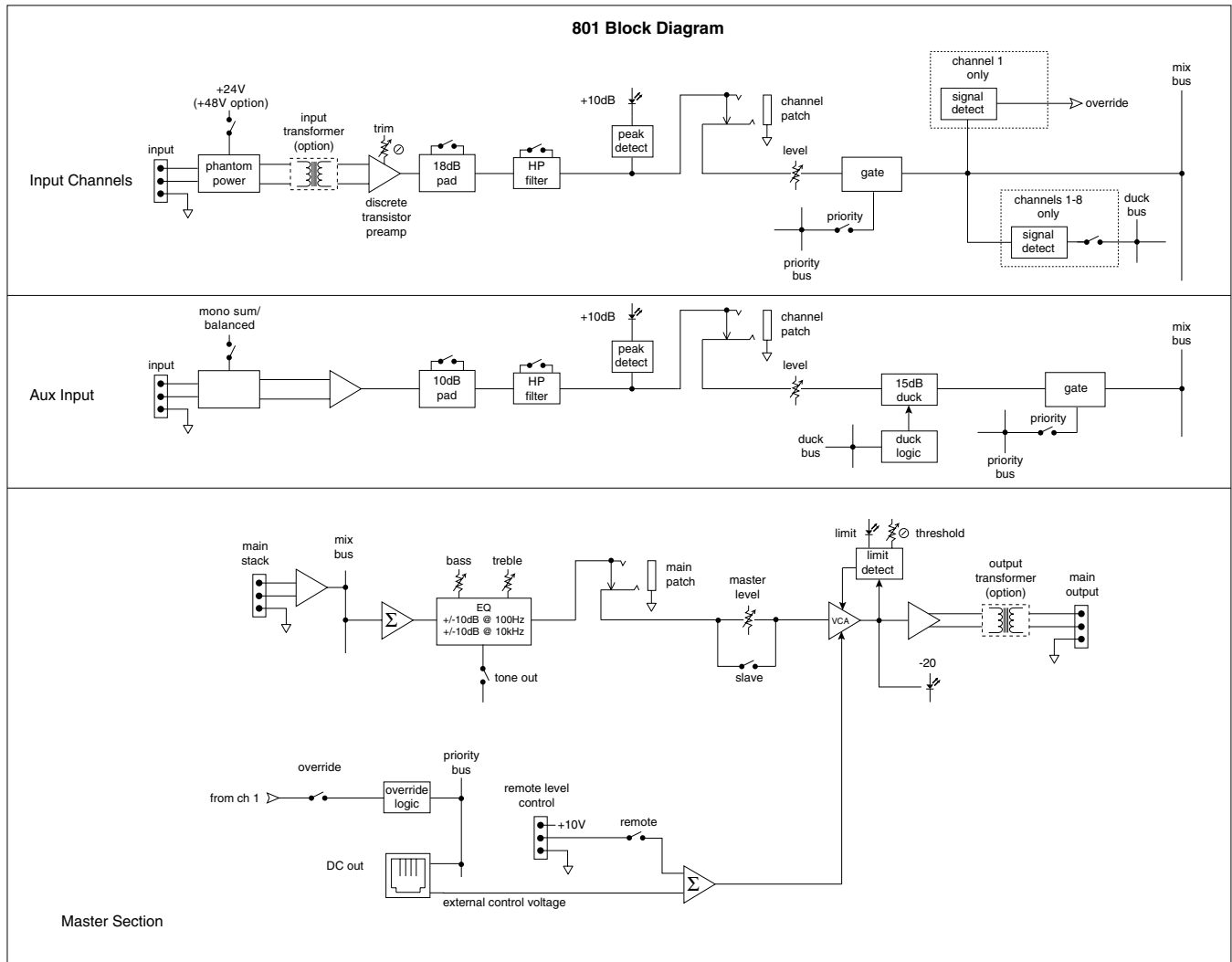
## 8-Input / 4-Output Zone Paging & Background Music System



This application shows an 801 mixer connected with other BIAMP products to provide a 4-zone paging & background music system with page routing, music source selection, override, and amplification. The 801 mic inputs have phantom power (for condenser mics) and high-pass filter (for speech signals) assigned. Patch jacks are used as channel direct outputs, which feed into line inputs of a PMX84. The PMX84 provides an 8x4 matrix, with mic switches wired to Logic Inputs for page routing & override. An RP-S4 switch panel is wired (via an RIK control module) to a PMX84 Remote input, allowing selection of the desired music source (additional RP-S4 / RIK units can be used to provide music source selection for individual zones). The outputs of the PMX84 are connected to the appropriate four inputs of an MCA 8050 multi-channel amplifier. The eight channels of the MCA 8050 are bridged in pairs, and output transformers are installed, to provide 100 Watts of power per zone into 25/70/100 Volt distributed speakers. Output connections from the 801 channel Patch jacks are made using 2-conductor TS ¼" phone plugs (3-conductor TRS ¼" phone patch cables are not necessary). The 801 is acting primarily as a set of 8 high-quality mic/line preamps.

# SPECIFICATIONS & BLOCK DIAGRAM

<b>Frequency Response</b> (20Hz-20kHz @ +4dBu):	+0/-1dB	<b>Output Impedance:</b>	
<b>THD + Noise</b> (20Hz-20kHz @ +4dBu):	< 0.08%	main output (balanced)	200 ohms
<b>Equivalent Input Noise</b> (20Hz-20kHz, 150 ohm term.):	-123dBu	channel patch (unbalanced)	100 ohms
<b>Output Noise</b> (20Hz-20kHz):		main patch (unbalanced)	100 ohms
master level control down	< -86dBu	<b>Maximum Output:</b>	
master level & one channel at nominal	< -78dBu	channel patch & main patch	+18dBu
<b>Maximum Gain:</b>		main output	+24dBu
mic input to main output	85dB	<b>Input Impedance:</b>	
channel patch to main output	25 dB	mic/line input (balanced)	5.1k ohms
main patch to main output	16dB	channel patch (unbalanced)	> 7k ohms
main stack to main output	9dB	main patch (unbalanced)	> 7k ohms
<b>Crosstalk</b> (channel-to-channel @ 1kHz):	-60dB	main stack (balanced)	40k ohms
<b>Output Tone Controls:</b>		<b>Maximum Input:</b>	
Treble	+/-10dB @ 10kHz	mic/line input	+20dBu
Bass	+/-10dB @ 100Hz	channel patch & main patch	+30dBu
<b>Channel High-Pass Filters:</b>		main stack	+24dBu
frequency	-3dB @ 170Hz	<b>Power Consumption</b> (120/240VAC 50/60Hz):	< 15 watts
slope	6dB/octave	<b>Dimensions:</b>	
<b>Output Limiter:</b>		height (1 rack space)	1.75 inches (44mm)
attack time	1~2 mS (program dependent)	width	19 inches (483mm)
release time	100~500 mS (program dependent)	depth	7 inches (178mm)
threshold range	-4dBu ~ +24dBu	<b>Weight:</b>	6 lbs. (2.72kg)



## WARRANTY

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

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

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

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

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

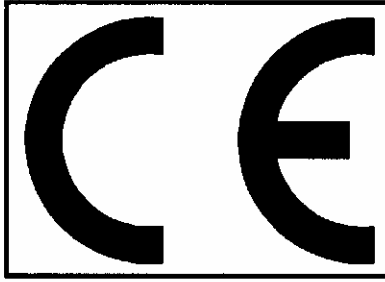
4. BIAMP SYSTEMS SHALL NOT IN ANY EVENT BE LIABLE FOR SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, INCLUDING LOST PROFITS, LOSS OF USE, PROPERTY DAMAGE, INJURY TO GOODWILL, OR OTHER ECONOMIC LOSS OF ANY SORT. EXCEPT AS EXPRESSLY PROVIDED HEREIN, BIAMP SYSTEMS DISCLAIMS ALL OTHER LIABILITY TO PURCHASER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

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

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

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

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



## Declaration of Conformity

BIAMP SYSTEMS  
10074 SW Arctic Drive  
Beaverton, OR USA 97005

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

Product: Model: ADVANTAGE® 801  
Description: Mic/Line Mixer

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

Applicable Harmonized Standards: EN55103-1 emissions EN55103-2 immunity  
EN60065 safety

### Special Considerations for Product Environment or Compliance:

Shielded cabling must be used for system connections. The apparatus is deemed incapable of producing harmonic emissions or flicker levels sufficient enough to interfere with other apparatus as noted in EN61000-3-2 and EN61000-3-3.

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

RF interference conducted through interconnect cabling may cause varying degrees of random signal degradation. The effect of increased noise or distortion due to this interference is typically masked by the desired signal. In no instance is operation inhibited.

The Technical Report/File is maintained at:

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

A handwritten signature in black ink, appearing to read 'Ralph D. Lockhart', is written over a white background.

Authorized Representative: Ralph Lockhart, President

Authorized Representative Signature:  
Issued: 1999

## SAFETY INFORMATION

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

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

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

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



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



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

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

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



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

	<b>CAUTION</b> RISK OF ELECTRICAL SHOCK. DO NOT OPEN	
<p><b>CAUTION:</b> TO REDUCE THE RISK OF ELECTRICAL SHOCK, DO NOT REMOVE COVER.</p> <p>NO USER-SERVICEABLE PARTS INSIDE.</p> <p>REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.</p>		

## "INFORMACIÓN DE SEGURIDAD"

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

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

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

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



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



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

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

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



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

	<b>PRECAUCIÓN</b> RIESGO DE DESCARGA ELÉCTRICA NO ABRIR.	
<p><b>PRECAUCIÓN:</b> para reducir el riesgo de descarga eléctrica no levantar la tapa.</p> <p>NO EXISTEN COMPONENTES DE SERVICIO EN EL INTERIOR.</p> <p>REFERIRSE ÚNICAMENTE A PERSONAL CUALIFICADO PARA SERVICIO TÉCNICO.</p>		

## INFORMATION CONCERNANT VOTRE SECURITE

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

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

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

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



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



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

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

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



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

	<b>ATTENTION:</b> Risque de choc électrique, ne pas enlever le couvercle.	
<p><b>ATTENTION:</b> L'entretien des pièces intérieures ne peut pas être fait par des personnes non qualifiées.</p> <p>Faire faire l'entretien uniquement par du personnel qualifié.</p>		

## INFORMAZIONI PER LA SICUREZZA

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

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

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

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



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



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

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

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



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

	<b>Attenzione</b> Pericolo di scosse elettriche. Non aprire l'apparecchio.	
<p><b>PRUDENZA:</b> a scopo di ridurre la possibilità di incorrere in scosse elettriche, vi consigliamo di non rimuovere il pannello di chiusura dell'apparecchio.</p> <p>Nessuna parte di manutenzione all'interno dell'apparecchio!</p> <p>Per ogni necessità di servizio e manutenzione rivolgersi al personale qualificato.</p>		

## Sicherheitshinweise

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

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

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

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



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



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

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

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



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

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

## Sikkerhedsinformation

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

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

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

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



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



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

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

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



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

	<b>FORSIGTIG</b> Fare for elektrisk stød må ikke åbnes.	
FORSIGTIG: Med henblik på at reducere risikoen for elektrisk stød, må svabel ikke fjernes.		
Indeholder ingen komponenter relevante for brugeren.		
Anvend autoriseret servicepersonale ved alle servicetilfælde.		

## VEILIGHEIDSINFORMATIE

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

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

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

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



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



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

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

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



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

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

## TURVALLISUUSTIEDOTE

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

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

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

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



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



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

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

**HUOMIO:** Laitteen asentaminen tulisi jättää ammattilaisen henkilön suorittavaksi ja asennuksessa tulee noudattaa kaikkia paikallisia säännöksiä.



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

	<b>HUOMIO</b> SÄHKÖISKUN VAARA, ÄLÄ AVAA.	
HUOMIO: ÄLÄ AVAA KANTTA SÄHKÖISKUN VAARAN VUOKSI		
EI SISÄLLÄ KÄYTTÄJÄN HUOLLETTAVIA OSIA		
JÄTÄ HUOLTO AMMATTITAITOISELLE HENKILÖKUNNALLE		

# SIKKERHETS INFORMASJON

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

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

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

Produkt merkingen og bruksanvisningen bruker internasjonale symboler for å merke punkter som er viktige for brukernes sikkerhet.



Lynet i en triangel advarer brukeren om uisoleret "farlig spenning" inne i apparatet, eller tilkoblings terminaler som kan gi støt.



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

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

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



Modifikasjoner og tilleggs informasjon som følger er kun for kvalifiserte installatører eller service personale.

	<b>VIKTIG</b> FARE FOR STØT, MÅ IKKE DEMONTERES.	
<p><b>VIKTIG:</b> For å unngå faren for støt, må ingen delar fjernes</p> <p>Ingen interne deler skal justeres eller repareres av bruker.</p> <p>Overtalt service til autorisert personale.</p>		

# SÄKERHETS INFORMATION

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

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

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

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



En blix med pil, innesluten i en triangel, menad att uppmärksamma användare på närvaron av isolerade "farliga spänningar" i apparaten eller på anslutnings kontakter vilka har tillräcklig styrka för att medföra risk för elektrisk stöt.



Ett utropstecken, innesluten i en triangel, menad att uppmärksamma användare på viktiga installations, handhavande eller underhålls-instruktioner i medföljande dokumentation.

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

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



Eventuella modifierings instruktioner och annan information av teknisk art i denna manual är endast avsedd att användas av kvalificerad installations och service personal.

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

# ΠΛΗΡΟΦΟΡΙΕΣ ΑΣΦΑΛΕΙΑΣ

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

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

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

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



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



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

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

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



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

	<b>ΠΡΟΣΟΧΗ</b> ΚΙΝΔΥΝΟΣ ΗΛΕΚΤΡΟΠΛΗΞΙΑΣ, ΜΗΝ ΑΝΟΙΓΕΤΕ.	
<p><b>ΠΡΟΣΟΧΗ:</b> ΓΙΑ ΝΑ ΜΗΝ ΕΞΕΤΕ ΤΟΝ ΚΙΝΔΥΝΟ ΗΛΕΚΤΡΟΠΛΗΞΙΑΣ, ΜΗΝ ΜΕΤΑΚΙΝΗΣΕΤΕ ΤΟ ΚΑΛΥΜΜΑ</p> <p>ΔΕΝ ΠΑΡΕΧΟΝΤΑΙ ΑΝΤΑΛΛΑΚΤΙΚΑ SERVICE ΣΤΟΝ ΧΡΗΣΤΗ</p> <p>ΓΙΑ SERVICE ΑΝΑΦΕΡΕΤΕ ΣΤΟ ΕΞΟΥΣΙΟΔΟΤΗΜΕΝΟ ΠΡΟΣΩΠΟ SERVICE</p>		

# INFORMAÇÃO SOBRE SEGURANÇA

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

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

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

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



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



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

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

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



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

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