CA SERIES

CA-502
CA-504
CA-1.02
CA-1.04
CA-1.52
CA-1.54

2- and 4-channel

Power Amplifier

Operating Manual

• *Click the yellow box on any page to return to the table of contents*

Important Safety Instructions • *Consignes de sécurité à lire attentivement*

The lightning flash with arrowhead symbol, within an equilateral triangle, is 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. The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance instructions in the literature accompanying the device.

Le symbole de la flèche dans un triangle équilateral symbolisant la foudre est prévu pour sensibiliser l'utilisateur à la présence de tension de voltage non isolée à l'intérieur de l'appareil. Elle pourrait constituer un danger de risque de décharge électrique pour les utilisateurs. Le point d'excl mation dans le triangle équilatérale alerte l'utilisateur de la présence de consignes qu'il doit d'abord consulter avant d'utiliser l'appareil.

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.
6. Do not use this apparatus near water.
7. Clean only with dry cloth.
8. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
9. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus.
10. Do not defeat the safety purpose of the polarized or groundingtype 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 the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
11. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
12. Only use attachments/ accessories specified by the manufacturer.
13. Use only with the 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.
14. Unplug this apparatus during lightning storms or when unused for long periods of time.
15. 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.
16. This equipment is not suitable for use in locations where children are likely to be present.

1. *Lisez ces instructions.*
2. *Conservez ces instructions.*
3. *Observez les avertissements.*
4. *Suivez ces instructions.*
5. *Pour réduire le risque de feu ou la décharge électrique, ne pas exposer cet appareil pour pleuvoir ou l'humidité.*
6. *Ne pas utiliser l'appareil près de l'eau.*
7. *Le nettoyer à l'aide d'un tissus sec.*
8. *Ne pas bloquer les ouvertures de ventilation, installer selon les consignes du fabricant.*
9. *Eloigner des sources de chaleur tel: radiateurs, fourneaux ou autres appareils qui produisent de la chaleur.*
10. *Ne pas modifier ou amputer le système de la mise à terre. Une prise avec mise à terre comprend deux lames dont une plus large ainsi qu'une mise à terre: ne pas la couper ou la modifier. Si la prise murale n'accepte pas la fiche, consulter un électricien pour qu'il remplace la prise désuète.*
11. *Protéger le cordon de secteur contre tous bris ou pincement qui pourraient l'endommager, soit à la fiche murale ou à l'appareil.*
12. *N'employer que les accessoires recommandés par le fabricant.*
13. *N'utiliser qu'avec les systèmes de fixation,chariots, trépied ou autres, approuvés par le fabricant ou vendus avec l'appareil.*
14. *Débrancher l'appareil lors des orages électriques ou si inutilisé pendant une longue période de temps.*
15. *Un entretient effectué par un centre de service accrédité est exigé si l'appareil a été endommagé de quelque façon: si il a été exposé à la pluie,, l'humidité ou s'il ne fonctionne pas normalement ou qu'il a été échappé.*
16. *Cet équipement ne convient pas pour une utilisation dans des endroits où des enfants sont susceptibles d'être présents.*

WARNING: THIS APPARATUS MUST BE GROUNDED (EARTHED)

FCC Compliance

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference
- This device must accept any interference received, including interference that may cause undesired operation

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 both a commercial and 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 to 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.

Unpacking

As a part of our system of quality control, every Ashly product is carefully inspected before leaving the factory to ensure flawless appearance.

After unpacking, please inspect for any physical damage. Save the shipping carton and all packing materials, as they were carefully designed to reduce to a minimum the possibility of transportation damage should the unit again require packing and shipping. In the event that damage has occurred, immediately notify your dealer so that a written claim to cover the damages can be initiated.

The right to any claim against a public carrier can be forfeited if the carrier is not notified promptly and if the shipping carton and packing materials are not available for inspection by the carrier. Save all packing materials until the claim has been settled.

About Ashly

Ashly Audio was founded in 1974 by a group of recording engineers, concert sound professionals, and electronics designers. The first products were elaborate custom consoles for friends and associates, but business quickly spread to new clients and the business grew.

The philosophy we established from the very beginning holds true today: to offer only the highest quality audio tools at an affordable cost to the professional user – ensuring reliability and long life. Years later, Ashly remains committed to these principles.

Ashly's exclusive five-year, worry-free warranty remains one of the most generous policies available on any commercial- grade product. The warranty covers every product with the Ashly brand name, and is offered at no extra cost to you.

Please read this entire manual to fully understand the features and capabilities of this product.

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1 Introduction

Thank you for your purchase of this Ashly CA power amplifier. This product uses state of the art, light weight, high power, high efficiency switching technology developed through years of design and testing. CA amplifiers are available in three power levels, designed to meet the most demanding live sound and fixed installation sound systems in stadiums, arenas, performance venues, worship spaces and convention centers.

1.2 Features

- Two or four channel models
- 500W, 1,000W, or 1,500W per channel models
- Active power factor correction (PFC)
- Low impedance output (to 2 Ohm)
- Direct 70V or 100V output
- Extremely efficient and lightweight
- Neutrik® Combo XLR - 1/4" jack and Euroblock input connectors
- Euroblock speaker output connectors
- Front panel soft-power switch, defeatable
- Front panel level controls, fully off = mute, defeatable
- Front panel LEDs for clip/mute, signal, current, temperature, bridge mode, protect, and front panel disable
- 80Hz 2nd order hi-pass filter per channel (on/off)
- Clip limiter per channel (on/off)
- Input gain settings per channel: 26dB, 32dB, 38dB, or 1.4V
- Remote DC level control per channel
- Remote standby contact closure, with polarity setting
- Universal 100-240VAC operation, 50-60Hz, detachable AC connector
- Continuously variable cooling fan(s)
- Protection: Inrush current limitation, over-temperature, output short-circuit/over-power, output DC, mains fuse
- Safety/Compliance: cTUVus, CE, FCC Class B, RoHS
- Ashly five year warranty

2 Requirements

Before connecting to AC mains power, make sure that the mechanical installation, cooling requirements, wiring, and controls are all set to the configuration needed for your application. Failure to do so could result in damage to the unit or to other components in the system.

2.1 AC Mains

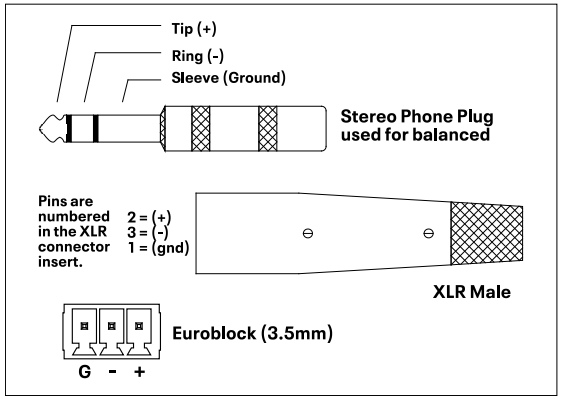
This amplifier uses a universal Switch Mode Power Supply (SMPS) with active Power Factor Correction (PFC). The power supply will auto-detect nominal AC mains voltage from 100 to 240VAC, 50-60Hz.

Use only the provided AC cord to connect to AC mains.

All CA models have a fixed, non-defeatable warm-up delay of two seconds to protect against excessive in-rush current when first powered up. The model number and power consumption are indicated on the back panel label placed near the AC inlet. To reduce the risk of ground loop hum, all sound system ground references should originate at the same AC power distribution point. Do not lift or remove the amplifier power cord ground pin.

2.2 Input Signal Wire

Use shielded wiring for balanced or unbalanced audio signals. Shielding which is properly grounded will protect the signal from outside electrical interference such as RF, fluorescent lighting, and computer/display emissions. Unbalanced or single-ended (tip-sleeve) lines



of less than 10 feet are generally ok, but for greater distance or noisy field environments, use balanced input signal wiring.

Each channel's Euroblock, 1/4" phone jack, and XLR inputs are wired in parallel, with XLR pin 2 (+) and pin 3 (-). When using an unbalanced input, wire the signal to the input (+) Euroblock pin, phone jack tip, or XLR pin 2, and also be sure to wire the input (-) pin, phone jack ring, or XLR pin 3 to ground. Do not leave the (-) input unconnected. Avoid running low level signal wires in close proximity or parallel to long speaker cables, AC power cables, or power transformers, as they can induce hum or oscillation.

2.3 Speaker Wire

Note: The sound system installer is responsible for using loudspeaker wiring that is in compliance with local electrical code. The following recommendations for speaker wiring are based on UL 60065 section 5.2-d and the US National Electrical Code Article 725. These are only guidelines, consult your local code for specific up to date requirements.

- Class 2 wiring is typically used when the maximum measured open-circuit speaker output voltage is less than 120V rms.
- Class 3 wiring is typically used if the measured open circuit output voltage exceeds 120V rms, such as when amplifiers are used in bridged mode. See the specifications for specific model configurations that may require Class 3 speaker wiring.

Speaker wire gauge: CA amplifiers are capable of delivering high levels of output current, so the wire gauge used for speaker outputs is important. Inadequate wire gauge, especially over long distance, adds significant resistance to the speaker's own impedance, reducing the power which is actually delivered to the speaker. It could also result in a decreased damping factor and potential fire hazard. Since power at the speaker load is of primary concern in system design, refer to the table below to best determine appropriate wire gauge for your application.

The following table lists the resistance per 100 feet of common copper wire gauges, and also lists the percentage of the speaker load power which would be lost as heat in an arbitrary 100 ft run of different gauges of 2-conductor copper speaker wire.

Wire Gauge	Ohms /100ft	8Ω load	4Ω load	2Ω load
#8	0.0605Ω	0.8%	1.5%	3%
#10	0.1018Ω	1.3%	2.5%	5%
#12	0.1619Ω	2.0%	4.0%	8%
#14	0.2575Ω	3.2%	6.4%	12.8%
#16	0.4094Ω	5.1%	10.2%	20.4%
#18	0.6510Ω	8.1%	16.3%	32.6%

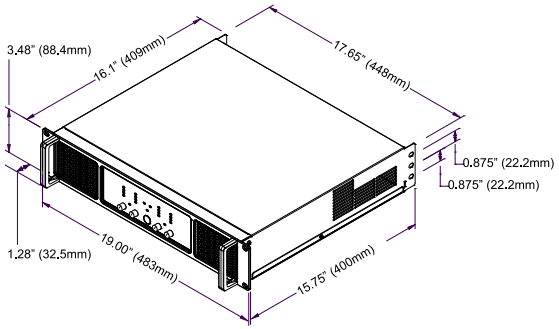
This table expresses the power loss as a percentage of the load's power rather than the total amplifier output power in order to accurately determine power loss at other cable lengths. For example, if you plan to deliver 150 watts to an 8 Ohm load through 50 ft of 14 ga. cable, the power loss in the cable would be half that of a 100 ft run of #14 wire as shown in the table, or 1.6% of 150W, which is an insignificant 2.4 watts. However, if you were to run 200 ft of 18 ga. cable to a 2 Ohm load, the loss would be twice that of the 100 ft run shown in the table, or 65.2% of 250W, which is 163 watts lost as heat. Always be sure to use adequate gauge speaker wire.

2.4 Remote Control Wire

- Remote DC level control - Bell or telephone wire is sufficient for DC level control, as well as CAT5 cable. The V+ and Ground pins from one amplifier channel can be shared with other remote DC level controls wired to the same amplifier, however do not connect remote control ground to any external grounds.
- Remote Standby - This is a logic level signal, use low gauge wire, shielding is unnecessary.

2.5 Mechanical

Each amplifier model is 2RU and is designed to fit into a 19-inch equipment rack with minimum depth of 16.1" (409mm). Use four screws when mounting the amplifier to the front rack rails. Rear support is recommended for mobile or touring use. In some installations where the sound system is exposed to a high level of RF noise or system-induced oscillation, it may be necessary to ground the amplifier's chassis to the rack enclosure. This is accomplished using star type lockwashers on the four rack mounting screws, placed between the amplifier chassis and the rack rails. These star washers will penetrate through the amplifier and rack rail finish to adequately ground the chassis to the rack.



2.6 Cooling

Air vents on the amplifier front and side panels must have access to free flowing room temperature air. Cool air is drawn in through the front panel and blown out through the sides. It is not necessary to leave empty rack spaces above or below the amplifier. See specifications for amplifier thermal output characteristics in BTU/hr.

3 Amplifier Protection

Power-On Delay: All models have a two second turn-on delay to prevent excessive in-rush current when first powered on.

Thermal Protection: Cooling fans are continuously variable, reaching their maximum speed when an amplifier channel reaches 80% of it's safe operating temperature. Temp LEDs turn on when signal limiting countermeasures are being applied to that channel due to over temperature conditions.

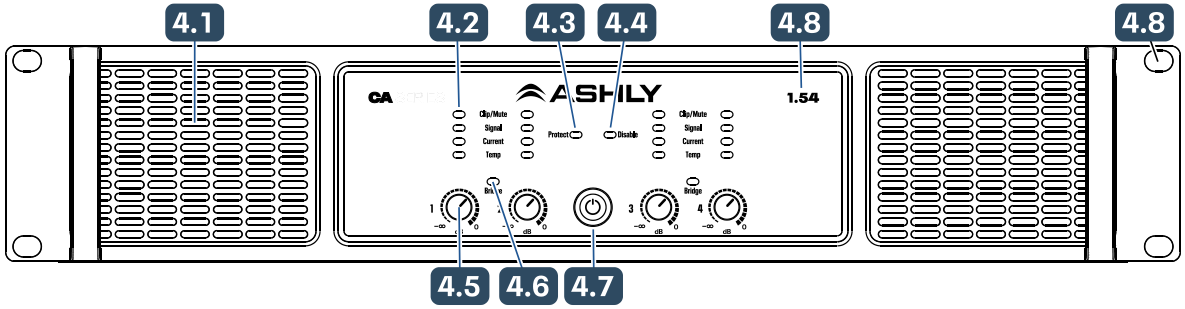
Overpower Protection: To protect internal components against overpower conditions, a protection scheme in each output stage reduces audio output power until the fault condition is no longer present.

Output DC and Rail Fault Protection: Output DC on any channel will trigger the Protect LED and mute that channel.

AC Mains: If the AC Mains line voltage exceeds or falls below the specified operating range, the amplifier will temporarily shut down. It will automatically restart as soon as the AC line voltage returns to the specified range.

For details on these and other amplifier protection schemes, plus their LED codes, refer to the troubleshooting section.

4 Front Panel Features *CA-1.54 shown*



4.1 Air Vents

Cool air enters in through the amplifier front panel and is vented out the sides.

4.2 Channel LED Indicators

- CLIP/MUTE (red):

  CLIPPING is indicated when the speaker output reaches 95% (-0.5dB) of maximum power.

  MUTE is indicated when front panel level or DC level controls are fully attenuated.

  The Clip/Mute LED is also used with the Protect LED to indicate output DC fault. See the troubleshooting section for LED fault codes.

- SIGNAL (green) is indicated when amplifier output voltage reaches 25% (-12dB) of maximum.
- CURRENT (green) indicates when output current delivered to the speaker load is 2 Amp or greater.
- TEMP (yellow) indicates that automatic counter-measures are being applied due to an excessive internal temperature .

4.3 Protect LED

The red protect LED initially turns on to indicate that real-time countermeasures are being applied to overpower, over-temperature, or rail voltage fault conditions while the amp is still running.

If the countermeasures are unsuccessful and the amplifier protects itself by shutting down, the protect LED remains on and the amplifier's power must be cycled before resuming normal operation.

The exception to this is when the amp shuts down due to the AC mains voltage being out of range, in which case the amp automatically restarts as soon as the AC mains line voltage returns to the specified operating range.

4.4 Disable LED

This yellow LED lights when the power switch and level controls have been disabled using the back panel DIP switch (sec. 5.2b).

4.5 Channel Attenuators

These control the level of the amplifier, and work in combination with the remote DC level controls. When an input attenuator is turned fully off, the red Clip/Mute LED for that channel turns on to indicate mute status. Front panel attenuators and the power switch can be disabled using the back panel DIP switch (sec. 5.2b).

4.6 Bridge LED

This green LED indicates when a channel pair is set to BRIDGE mode from the back panel switch (sec. 5.6). In bridge mode, only the odd numbered input and level control for that channel pair is used.

4.7 Power Switch/LED

This switch is used for powering the amplifier on or off. Its white LED lights solid when the amplifier is on and flashes at 1 Hz when in standby mode. The power switch can be disabled using the back panel DIP switch. The three possible power switch LED conditions are:

- Fully lit: The amplifier is powered up, even if the power switch has been disabled, in which case the disable LED will be on.
- Flashing: The amplifier is in standby mode.
- Fully off: The amplifier is completely off.

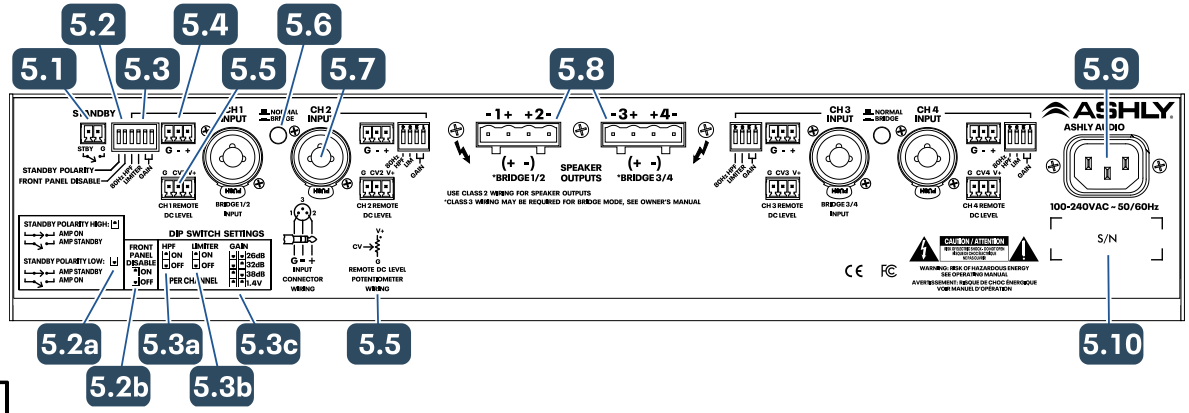
4.8 Model Number

The first two numbers of model number express the power rating per channel of the amplifier. For example, "1.5" mean 1,500W per channel, "1.0" means 1,000W per channel, and "50" means 500 W per channel. The last number is the channel count.

4.9 Mounting Holes

For mounting to a 19" equipment rack.

5 Rear Panel Features *CA-1.54 shown*

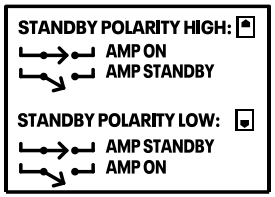


5.1 Standby Connector

This Euroblock connector is used for remote contact closure control of amplifier standby status, which places the amplifier into a low power consumption state. A DIP switch sets standby circuit polarity.

5.2 Standby Polarity & Front Panel Disable DIP Switch

5.2a Standby Polarity



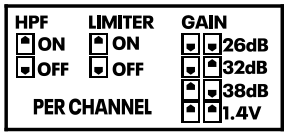
The Standby Polarity DIP switch sets the polarity requirement for placing the amplifier into standby. When standby polarity is set High, the amp goes into standby whenever the circuit is open. When standby polarity is set Low, the amp goes into standby whenever the circuit is closed.

5.2b Front Panel Disable

The Front Panel Disable DIP switch de-activates all front panel controls.

5.3 DIP Switch Channel Settings

Each channel has its own DIP switch for independently setting 80Hz Hi-Pass Filter, Clip Limiter, and Gain as described below:



5.3a High Pass Filter

An 80Hz 2nd order hipass filter is used to reduce low frequency content going to a speaker.

5.3b Limiter

The clip limiter is used to prevent the amplifier channel from sending clipped audio to the speaker. When the clip limiter is enabled, input signal level is automatically turned down whenever full output power is exceeded.

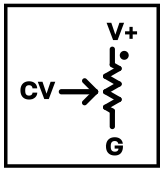
5.3c Gain

The Amplifier Gain settings are used to set the overall voltage gain of the amplifier in dB. This is useful when matching an amplifier to input signal strength. Using the maximum expected input signal level, set amplifier gain to the highest setting possible without risk of the amplifier going into clipping. The Gain setting of 1.4V means a 1.4V input signal will drive the amp to full output.

5.4 Euroblock Input Jack

Used for wiring a balanced input. Euroblock connectors and 1/4" TRS/XLR combo jacks are internally wired in parallel. If using an unbalanced signal source on the Euroblock connector, wire its input signal to the (+) pin, shield to (G), and also wire the (-) input pin to ground.

5.5 Remote DC Level Control



Each channel has a potentiometer circuit available on a Euroblock connector for remote DC level control of that channel. The illustration to the right shows proper wiring. There is no limit to wire length. Do not use any other ground source. If multiple remote DC level controls are used for different channels, the same ground and V+ sources can be shared.

5.6 Bridge Mode Switch

This switch, when pressed in, places the adjacent channel pair into bridge mode, combining two amplifier outputs for more power to a single speaker load. Bridge mode uses only the odd numbered input and level control, disabling the even numbered input and level control for that channel pair. Speaker outputs in bridge mode must be wired differently, as shown on the back of the amplifier. A bridge mode switch button can be removed for added security by pulling it straight off.

(rear panel features continued)

5.7 Combo Input Jack
The combination 1/4" TRS and XLR jack (pin 2 hot) is wired in parallel to the Euroblock input. Do not float the TRS ring or XLR pin 3, connect it to (-) signal or to ground (if unbalanced).

5.8 Speaker Output Connectors
7.62mm Euroblock connectors are used for convenient and secure wiring to speaker loads. Bridge mode uses the center two pins as indicated on the amplifier back panel.

5.9 AC Mains Connector
Always use the AC cord provided by Ashly for connecting to mains power. The amplifier auto-detects nominal mains voltage from 100VAC to 240VAC. WARNING: Do not remove or lift the mains connector ground.

5.10 Serial Number Sticker
This sticker identifies the product model number, serial number, and AC mains current/power rating.

6 Troubleshooting

No AC Power

- Is the detachable AC power cord properly installed? Is it plugged into a known live outlet?
- Has the power switch been disabled?

No Amplifier Output

- Is the amplifier in Standby Mode?
- Is there signal getting to the amplifier?
- Is the input signal properly wired?
- Are output connectors properly wired?
- Are front panel or remote control attenuators turned down?
- Is the Amplifier in Protect Mode? (see table below)

Attenuators Don't Work

- Have the front panel controls been disabled using the rear panel DIP switch?

Still Not Working?

- Contact Ashly technical support at 1-800-872-0010 x124, or email service@ashly.com

Protect Mode - Front Panel LED Error Codes:

Protect Mode Fault Description	Power	Protect	Clip/Mute	Signal	Temp	Current
>9dB Continuous Power Limiting	On	✹				
Amp Power Module Channel Protect	On	✹	✹			✹
†Thermal Protect	On	✹			✹	
††Power Supply Out Of Range	On	✹	✹			
*Amp Channel DC Protect	On	✹	✹	✹		
*Amp Channel Over-Temperature	On	✹	✹		✹	
*Power Transformer Over-Temperature	On	✹	✹		✹	✹
*Power Supply Rails Too High	On	✹	✹			
*Micro-Controller Over-Temperature	On	✹	✹	✹	✹	✹
†Thermal Protect	Standby	✹			✹	
††Power Supply Out Of Range	Standby	✹	✹			
*Amp Channel DC Protect	Standby	✹	✹	✹		
*Amp Channel Over-Temperature	Standby	✹	✹		✹	
*Power Transformer Over-Temperature	Standby	✹	✹		✹	✹
*Power Supply Rails Too High	Standby	✹	✹			
*Micro-Controller Over-Temperature	Standby	✹	✹	✹	✹	✹

† Amp still passes audio, automatic recovery

†† Amp mutes until fault clears, automatic recovery

** Non-recoverable fault, must reset Amp by cycling AC power*

7 Specifications

General Power Amplifier Specifications (0dBu = 0.775V rms)						
Amplifier Model	**CA1.54**	**CA1.52**	**CA1.04**	**CA1.02**	**CA504**	**CA502**
Maximum Output Power - in Watts *CEA-2006/490A, 20ms 1kHz 1%THD+N, 480ms 1kHz -20dB, 120VAC, all channels driven at rated load*						
Low Z output, per channel						
2 Ohm	1500	1500	1000	1000	500	500
4 Ohm	1500	1500	1000	1000	500	500
8 Ohm	750	750	500	500	250	250
Low Z output, per bridged channel pair*						
4 Ohm	3000*	3000*	2000*	2000*	1000*	1000*
8 Ohm	3000*	3000*	2000*	2000*	1000*	1000*
70V/100V* output						
70V	1500 (direct)	1500 (direct)	1000 (direct)	1000 (direct)	1000* (bridged)	1000* (bridged)
100V	3000* (bridged)	3000* (bridged)	2000* (bridged)	2000* (bridged)	1000* (bridged)	1000* (bridged)
*May require Class 3 speaker wiring, all others use Class 2 wiring. See section 2.3						
Total Power Draw - in Watts, all channels driven, 1/8 power sinewave						
Standby	22	13	19	10	17	8
Idle (no signal)	100	31	70	40	34	17
1/8 max power	975	485	675	335	345	172
Total Current Draw - in Amps, all channels driven, 1/8 power sinewave, 120VAC (divide by 2 for 240VAC)						
Standby mode	0.39	0.24	0.37	0.21	0.35	0.2
Idle (no signal)	0.68	0.36	0.64	0.34	0.5	0.27
1/8 max power	8.9	4.2	6	3	3	1.5
Total Thermal Dissipation - in BTU/hour with typical input, all channels driven, 120VAC						
Standby mode	76	44	65	32	57	28
Idle (no signal)	209	105	184	96	115	57
1/8 max power, 4 Ohm	648	314	474	229	266	120
1/8 max power, 2 Ohm	754	355	576	269	304	148
Input Sensitivity - in Volts(rms) and dBu, per back panel DIP Switch gain settings						
@26dB gain	3.87V (+14.0dBu)	3.87V (+14.0dBu)	3.16V (+12.2dBu)	3.16V (+12.2dBu)	2.24V (+9.2dBu)	2.24V (+9.2dBu)
@32dB gain	1.94V (+8.0dBu)	1.94V (+8.0dBu)	1.58V (+6.2dBu)	1.58V (+6.2dBu)	1.12V (+3.2dBu)	1.12V (+3.2dBu)
@38dB gain	0.97V (+2.0dBu)	0.97V (+2.0dBu)	0.79V (+0.2dBu)	0.79V (+0.2dBu)	0.56V (-2.8dBu)	0.56V (-2.8dBu)
@1.4V gain	1.4V (+5.1dBu)	1.4V (+5.1dBu)	1.4V (+5.1dBu)	1.4V (+5.1dBu)	1.4V (+5.1dBu)	1.4V (+5.1dBu)

Specifications (continued)

Distortion (SMPTE, typical)	<0.5%
Distortion (THD-N, typical, 8 Ohm, 10dB below rated power, 20Hz-20kHz	<0.5%
Signal to Noise, 26dB input sensitivity, 20Hz-20kHz, unweighted	>98dB (50x models), >101dB (1.0x models), >103dB (1.5x models)
Frequency Response	20Hz-20kHz, +/-0.05dB
Channel Separation (dB from full output, 1kHz)	-75dB
Damping Factor (8 Ohm load, <1kHz)	>250
Balanced Input Connector (per channel)	Euroblock (3.5mm), 1/4" TRS and XLR Combo jack
Input Impedance	10k Ohm
Maximum Input Level	+21dBu
Bridge Mode Switch (per channel pair)	In for bridged mode, Out for stereo
Remote DC Level Control (G, CV, V+ per channel)	Euroblock (3.5mm), V+ is fully on, G is fully attenuated
DIP Switch settings (per channel)	
Switches 1-2: Input Gain	26dB, 32dB, 38dB, 1.4V
Switch 3: Output Clip Limiter	On, Off
Switch 4: Input High Pass Filter	80Hz 2nd order HPF - On, Off
DIP Switch settings (global)	
Switch 5: Front Panel Disable	On, Off
Switch 6: Standby Polarity	High (standby when open), Low (standby when closed)
Standby Contact Closure	Euroblock (3.5mm)
Speaker Output Connector	Euroblock (7.62mm)
Front Panel Indicators	
Power Switch LED (white)	On, Off, Standby (flashing)
Clip/Mute LED (red)	On at 95% max output (0.5dB below max), Mute
Signal LED (green)	On at 25% max output voltage (-12dB)
Current LED (green)	On at >2 Amps to speaker load
Temp LED (yellow)	On when thermal counter-measures are being applied
Bridge LED (green)	Per Channel Pair - On, Off
Protect LED (red) -see troubleshooting section for protect LED error codes	On for fault condition counter-measures or shut-down, Off
Disable LED (yellow)	On when front panel controls are disabled, Off
Attenuators	Per channel: front panel, Fully off = Mute
Remote Control Options	WR-1, WR-1.1 DC level control
Amplifier Protection	In-rush current, over-temperature, output DC, output over-power, AC mains voltage, mains fuses
Cooling	Continuously variable temperature controlled fan(s)
Power Requirements (50-60Hz)	
Nominal Voltage Input	100-240VAC
Operating Range	70-270VAC
Minimum Power-up	70VAC
Power Supply Type	SMPS with active PFC (Power Factor Correction)
AC Mains Line Cord Connector	Detachable Nema 5-15 for USA (may vary for export)
Environmental	32°F-120°F, (0°C-49°C) noncondensing
Unit Dimensions (all models)	19"W x 3.5"H x 16.1"D (483 x 89 x 409mm)
Unit Weight by Model	CA-502: 15lbs (6.81kg) CA-504 17.5lbs (7.95kg) CA-1.02 15.5lbs (7.04kg) CA-1.04 19.5lbs (8.85kg) CA-1.52 16lbs (7.26kg) CA-1.54 20lbs (9.08kg)
Shipping Dimensions (all models)	21.9"W x 5.43"H x 19.3"D (556mm x 13.8mm x 489mm)
Shipping Weight by Model	CA-502 18.5lbs (8.4kg) CA-504 21.5lbs (9.76kg) CA-1.02 19.5lbs (8.85kg) CA-1.04 24.0lbs (10.9kg) CA-1.52 20.0lbs (9.08kg) CA-1.54 24lbs (10.9kg)
Safety/Compliance	cTUVus, CE, FCC Class B, RoHS

LIMITED WARRANTY (USA ONLY)

(Other countries please contact your respective distributor or dealer.)

For units purchased in the USA, warranty service for this unit shall be provided by ASHLY AUDIO. in accordance with the following warranty statement.

ASHLY AUDIO, an **exertis|JAM** business, warrants to the owner of this product that it will be free from defects in workmanship and materials for a period of FIVE years from the original-date-of-purchase, with the exception of touch-screen displays and motorized faders which are warrantied for THREE years from the original-date-of-purchase.

ASHLY AUDIO will without charge, repair or replace at its discretion, any defective product or component parts upon prepaid delivery of the product to the ASHLY AUDIO factory service department, accompanied with a proof of original-date-of-purchase in the form of a valid sales receipt. This warranty gives you specific legal rights, and you may also have other rights, which vary from state to state.

EXCLUSIONS: This warranty does not apply in the event of misuse, neglect, or as a result of unauthorized alterations or repairs made to the product. This warranty is void if the serial number is altered, defaced, or removed. ASHLY AUDIO reserves the right to make changes in design, or make additions to, or improvements upon, this product without any obligation to install the same on products previously manufactured.

Any implied warranties, which may arise under the operation of state law, shall be effective only for FIVE years (THREE years for touch-screen displays and motorized faders) from the original-date-of-purchase of the product. ASHLY AUDIO shall be obligated to only correct defects in the product itself. ASHLY AUDIO is not liable for any damage or injury, which may result from, or be incidental to, or a consequence of, such defects. Some states do not allow limitations on how long an implied warranty lasts, or the exclusion, or limitation of incidental or consequential damages, so the above limitations or exclusions may not apply to you.

OBTAINING WARRANTY SERVICE:

For warranty service in the United States, please follow this procedure:

1) Return the product to ASHLY AUDIO, freight prepaid, with a written statement describing the defect and application that the product is used in. ASHLY AUDIO will examine the product and perform any necessary service, including replacement of defective parts, at no further cost to you.

2) Ship your product to:

ASHLY AUDIO

Attention: Service Department

847 Holt Road

Webster, NY 14580-9103

ASHLY AUDIO 847 Holt Road Webster, NY 14580-9103, USA
Phone: (585) 872-0010 Fax: (585) 872-0739
Toll Free (800) 828-6308 www.ashly.com

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