

US-series

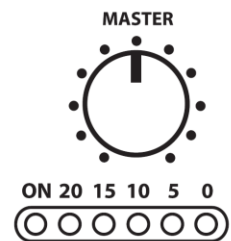
Compact 100V slave amplifiers

Item ref: US60 953.196UK

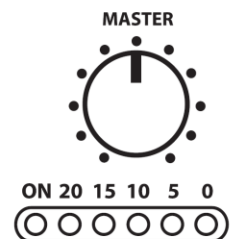
US90 953.199UK

User Manual

 **adastra**
US60



 **adastra**
US90



Version 1.0



Caution: Please read this manual carefully before operating
Damage caused by misuse is not covered by the warranty

Introduction

Thank you for choosing an Adastra US-series slave amplifier as part of your public address system. This unit is designed to offer high quality, dependable service for mobile and installed systems. Please read this manual to gain the best results from your product and avoid damage through misuse.

SAFETY SYMBOL AND MESSAGE CONVENTIONS



CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN

AVIS
RISQUE DE CHOC ELECTRIQUE NE PAS
OUVRIR



This symbol indicates that dangerous voltage constituting a risk of electric shock is present within this unit



This symbol indicates that there are important operating and maintenance instructions in the literature accompanying this unit.



SAFETY NOTICE

1. Prior to use, read through this manual
2. Keep the manual in good condition
3. Pay attention to safety warnings
4. Observe all operating requirements
5. Do not use the device near water or wet areas
6. For cleaning, only use a lint-free, dry cloth
7. Install according to the specifications
8. Place away from heat sources or heating appliances
9. Use mains lead provided and avoid damage to cable or connectors
10. Unplug power from mains during stormy weather or if unused for long periods
11. In case of malfunction, water ingress or other damage, consult qualified service personnel
12. Do not place in damp areas or near liquids or moisture. Do not spill liquids on the housing
13. Please pay attention to warning symbols during transit and placement
14. Terminals marked with the ⚡ symbol are HAZARDOUS LIVE and should only be connected by qualified personnel
15. Ensure that the apparatus is connected to a mains socket with a protective EARTH connection
16. Ensure correct operation of the mains switch

Warning

To prevent the risk of fire or electric shock, do not expose any components to rain or moisture. If liquids are spilled on the casing, stop using immediately, allow unit to dry out and have checked by qualified personnel before further use. Avoid impact, extreme pressure or heavy vibration to the case. No user serviceable parts inside – Do not open the case – refer all servicing to qualified service personnel.

Safety

- Check for correct mains voltage and condition of IEC lead before connecting to power outlet
- Use double insulated speaker wire with adequate current rating for 100V speaker connections
- Only use 1 type of output – i.e. 8Ω or 100V – do not mix or combine these outputs
- Do not connect 8Ω speakers to the 100V terminal or 100V speakers to the 8Ω terminal
- Do not allow any foreign objects to enter the case or through the ventilation grilles

Placement

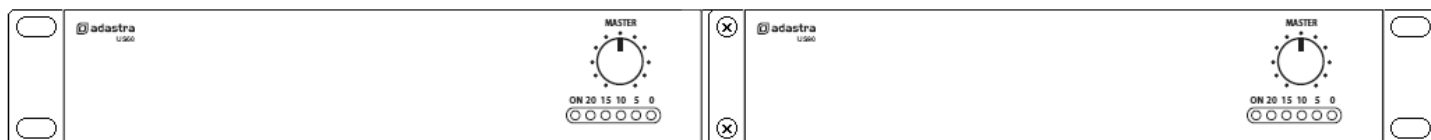
- Keep out of direct sunlight and away from heat sources
- Keep away from damp or dusty environments
- For rack-mounting, use the supplied accessories and ensure adequate support
- Ensure adequate airflow and do not cover cooling vents at the front and rear of the amplifier
- Ensure adequate access to controls and connections

Cleaning

- Use a soft cloth with a neutral detergent to clean the casing as required
- Use a vacuum cleaner to clear ventilation grilles of any dust or debris build-ups
- Do not use strong solvents for cleaning the unit

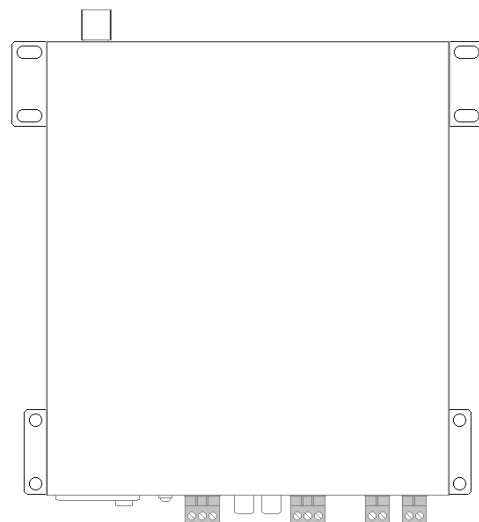
Rack mounting

The US series amplifiers can be mounted into a 19" rack cabinet using the supplied rack accessories. As shown below, the 2 joining brackets link a pair of US series amplifiers together to form a full-width 1U rack-mount pair. One rack ear can be mounted at each end for fixing to the rack strip.

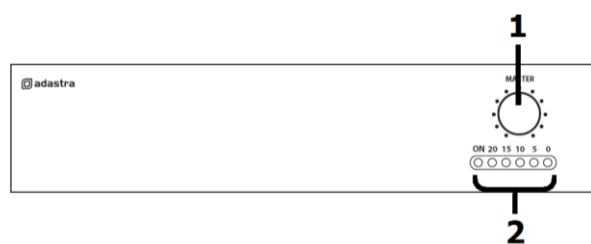


Wall or under counter mounting

The rack mounting accessories can also be attached so that the amplifier can be mounted against a wall or under a counter or work surface. To do this, mount the rack ears with the tabs aligned with the top of the housing to provide mounting holes to screw the amplifier to the underside of a work surface or against a wall with the controls visible vertically.

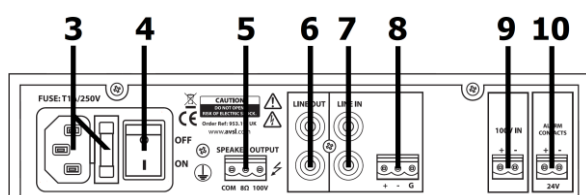


Front panel



1. MASTER volume control
2. Power and Audio Output indicators

Rear panel



3. IEC power inlet and fuse holder
4. Power on/off switch
5. 100V and 8Ω speaker output terminals
6. LINE OUT RCA output
7. LINE IN input (L+R RCA)
8. LINE IN input (Euroblock screw terminals)
9. 100V input (Euroblock screw terminals)
10. 24V MUTE contacts (Euroblock screw terminals)

Connection and setup

Set the rear power switch (4) to the "off" position and connect the rear IEC inlet (3) to the mains using the supplied mains lead (or an equivalent approved type). Check that the supply voltage is 170-264Vac 50Hz.

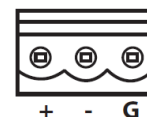
A pair of screw terminals is provided on the right side of the rear panel for connection to an alarm system if required (10). This connection will mute the LINE IN inputs but will not mute 100V IN (for alerts) when 24V is present across the terminals. (24V is a standard trigger voltage from most fire and security panels)



Note: Screw terminal blocks can be unplugged from the panel for convenience during connection.

The US series slave amplifiers are designed to accept a single line level audio input, such as the line output of a mixer or another amplifier, as a means of expanding an existing sound system. The line input can also be from a CD, mp3, DAB/FM tuner or other line level source if that is the only audio source that is required.

Input connection is via Left + Right RCA sockets (7), which are summed to mono for the output, or via a screw terminal input (8), which is labelled "+ / - / G".



For Unbalanced connection, connect the signal (core) wire to "+" and connect the Ground (braid) to "-" and "G".

For Balanced connection, there will be 2 core wires. Connect the hot (usually red) wire to "+" and the cold (white, black or blue) wire to "-". Then connect the Ground (braid) separately to "G".

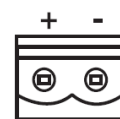
Another input method is provided via the 100V input terminals (9)

This is a pair of screw terminals (+/-) for connecting to the speaker line in a 100V line system. Connect "+" to 100V and "-" to 0V or GND as you would any 100V speaker.

(there is internal protection to ensure that the high voltage cannot cause damage to this input)

Caution: Do not connect 100V speaker output from this amplifier to its own 100V input!

100V IN



This type of input means that an existing 100V sound system can be extended from any point along its output wiring without the need for running additional signal cables and can also avoid problems associated with signal degradation along low voltage audio cables.

Caution: Do not connect 100V speaker level to any other input - this could damage the amplifier.

A twin RCA line output (6) is provided for connecting the mix of all channels onto further amplifiers.

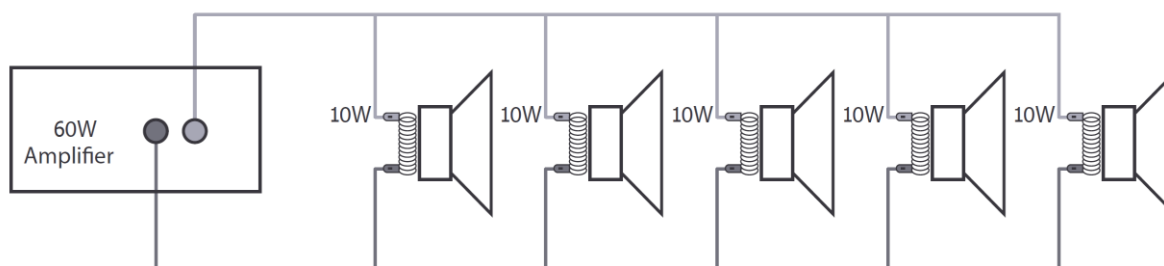
Speaker Connections

The US series amplifiers can be used either as 100V line amplifiers or standard low impedance power amplifiers. These 2 configurations cannot be used together, so decide which method will be used at the start.

100V line systems

For 100V line systems, connect the amplifier to the first speaker in the system using double-insulated speaker wire which has adequate current rating to handle the total output of the amplifier.

Connect the "100V" output terminal to the positive (+) connection of the speaker and "COM" output to the negative (-) connection of the speaker (5). Connect further speakers in parallel to the first speaker with all positive terminals connected together and all negative terminals connected together as shown below.



A 100V line speaker system can comprise of many speakers connected together. The determining factor for how many speakers can be used on a single amplifier is the power rating. For most purposes, it is advised to connect as many speakers as needed with a combined wattage of no more than 90% of the amplifier's output power rating.

The terminals of a 100V speaker are connected to a transformer and in some cases, this transformer may be "tapped" for different power ratings. These tapings can be used to adjust the wattage (and output volume) of each speaker in the system to help achieve the ideal total power of the system for the amplifier.

Low impedance systems

The US-series amplifiers can alternatively provide an output for a single 8Ω speaker by connecting the “8Ω” output to the positive (+) speaker connection and “COM” output to the negative (-) speaker connection (5). It is important to ensure that the speaker load is no lower than 8Ω and that the power handling of the speaker is equal to or greater than the output power of the amplifier.

Operation

When all connections to the amplifier are made, turn the MASTER volume control down (1) and switch on the power (4). A power LED will illuminate at the left side of the audio output indicator LEDs (2).

Play an input signal (line or 100V) into the amplifier to check the system. Turn up the MASTER volume control (1) gradually until the output is heard through the speakers. The MASTER acts as the overall volume control.

When not being used, turn down the MASTER control before powering down to avoid loud clicks or pops.

Specifications

Model	US60	US90
Output power: RMS	60W	90W
Dimensions	269 x 210 x 44mm	300 x 210 x 44mm
Weight	2.47kg	2.99kg
Power supply	170-264Vac, 50Hz (IEC)	
Amplifier: construction	Class D + transformer output	
Inputs	Line in (RCA or Euroblock), 100V in (Euroblock)	
Line output	2 x RCA (mono)	
Speaker outputs	Screw terminals - 100V / 8Ω / COM	
Mute	24V relay contacts	
THD	<0.4% @ 1kHz	
Input impedance	1k Ohms (line)	
Input sensitivity	-10dB (line)	
SNR	80dB (line)	
Frequency response	100Hz - 18kHz	

Troubleshooting

No power LED on control panel	Ensure IEC lead, mains switch and inlet fuse
Power LED is on but no other LEDs and no output	Check input signals and condition of input connection leads
	Check MASTER volume is turned up
Power light and output LEDs lighting but no output	Check speaker output terminals are connected correctly
	Check speakers are working (test on another amp if available)
Output is very loud or distorted	Check level of input signal is not too high
	Reduce Channel and/or MASTER levels
Output is working but at very low level	Check input audio source level is not too low
	Increase Channel and/or MASTER levels
Amplifier overheating or cutting out	Check that 8Ω speakers are not connected to 100V terminals
	Ensure total 100V speaker wattage is lower than amplifier rating
	Ensure that 100V and 8Ω speakers are not both connected



Disposal: The “Crossed Wheelie Bin” symbol on the product means that the product is classed as Electrical or Electronic equipment and should not be disposed with other household or commercial waste at the end of its useful life. The goods must be disposed of according to your local council guidelines.

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