SA 125

User Manual

Mixer Amplifier

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Table of contents


swissonic SA 125 PA Amplifier
MASTER

1 General information

This document contains important instructions for the safe operation of the product. Read and follow the safety instructions and all other instructions. Keep the document for future reference. Make sure that it is available to all those using the product. If you sell the product to another user, be sure that they also receive this document.

Our products and documentation are subject to a process of continuous development. They are therefore subject to change. Please refer to the latest version of the documentation, which is ready for download under *www.thomann.de*.

1.1 Symbols and signal words

In this section you will find an overview of the meaning of symbols and signal words that are used in this document.

Signal word	Meaning
DANGER!	This combination of symbol and signal word indicates an immediate dangerous situation that will result in death or serious injury if it is not avoided.
WARNING!	This combination of symbol and signal word indicates a possible dangerous situation that can result in death or serious injury if it is not avoided.
NOTICE!	This combination of symbol and signal word indicates a possible dangerous situation that can result in material and environmental damage if it is not avoided.

Warning signs	Type of danger
	Warning – high-voltage.
	Warning – danger zone.

2 Safety instructions

Intended use

This device is intended to be used for amplification, mixing and playback of signals from musical instruments and microphones. Use the device only as described in this user manual. Any other use or use under other operating conditions is considered to be improper and may result in personal injury or property damage. No liability will be assumed for damages resulting from improper use.

This device may be used only by persons with sufficient physical, sensorial, and intellectual abilities and having corresponding knowledge and experience. Other persons may use this device only if they are supervised or instructed by a person who is responsible for their safety.

Safety

DANGER!

Risk of injury and choking hazard for children!

Children can suffocate on packaging material and small parts. Children can injure themselves when handling the device. Never allow children to play with the packaging material and the device. Always store packaging material out of the reach of babies and small children. Always dispose of packaging material properly when it is not in use. Never allow children to use the device without supervision. Keep small parts away from children and make sure that the device does not shed any small parts (such knobs) that children could play with.

DANGER!

Danger to life due to electric current!

Within the device there are areas where high voltages may be present. Never remove any covers. There are no user-serviceable parts inside. Do not use the device when covers, safety equipment or optical components are missing or damaged.

DANGER!

Risk of death from electrical current!

The output voltages of modern high-performance amplifiers may result in death or serious injury. Never touch the bare ends of loudspeaker cables when the amplifier is on.

DANGER!

Danger to life due to electric current!

A short circuit could lead to a fire hazard and risk of death. Always use proper ready-made insulated triple-core mains cable with a safety plug. Do not modify the mains cable or the plug. In case of isolation damage, disconnect immediately the power supply and arrange repair. If in doubt, seek advice from a qualified electrician.

WARNING!

Possible hearing damage due to high volumes on speakers!

With loudspeakers connected, the device can produce volume levels that may cause temporary or permanent hearing impairment. Over an extended period of time, even levels that seem to be uncritical can cause hearing damage. Do not operate the device permanently at a high volume level. Decrease the volume level immediately if you experience ringing in your ears or hearing impairment. If this is not possible, keep a greater distance to the speaker or use adequate ear-muffs.

NOTICE!

Risk of fire due to covered vents and neighbouring heat sources!

If the vents of the device are covered or the device is operated in the immediate vicinity of other heat sources, the device can overheat and burst into flames. Never cover the device or the vents. Do not install the device in the immediate vicinity of other heat sources. Never operate the device in the immediate vicinity of naked flames.

NOTICE!

Damage to the device if operated in unsuitable ambient conditions!

The device can be damaged if it is operated in unsuitable ambient conditions. Only operate the device indoors within the ambient conditions specified in the "Technical specifications" chapter of this user manual. Avoid operating it in environments with direct sunlight, heavy dirt and strong vibrations. Avoid operating it in environments with strong temperature fluctuations. If temperature fluctuations cannot be avoided (for example after transport in low outside temperatures), do not switch on the device immediately. Never subject the device to liquids or moisture. Never move the device to another location while it is in operation. In environments with increased dirt levels (for example due to dust, smoke, nicotine or mist): Have the device cleaned by qualified specialists at regular intervals to prevent damage due to overheating and other malfunctions.

NOTICE!

Damage to the device due to high voltages!

The device can be damaged if it is operated with the incorrect voltage or if high voltage peaks occur. In the worst case, excess voltages can also cause a risk of injury and fires. The voltage selector switch can be used to set the device to the required operating voltage. Make sure that the voltage set on the device matches the local power supply network before plugging in the device. Only operate the device from professionally installed mains sockets that are protected by a residual current circuit breaker (FI). Ensure that the power cord plug is easily accessible at all times if it is the only device to safely disconnect the device from the mains supply. As a precaution, disconnect the device from the power grid when storms are approaching or it the device will not be used for a longer period.

NOTICE!

Risk of fire due to improper handling of an external battery!

When using an external battery, an arc or short circuit may occur between the bare ends of the live supply cables if not handled properly. This may destroy the battery and cause a fire. Observe the polarity markings and safety instructions of the manufacturer of the external battery. For connecting the battery: First connect the power cord to the screw terminals on the rear panel of the device. Then connect the free ends of the cables to the battery poles. For disconnecting the battery: First unscrew the cables on the battery poles. Then on the screw terminals of the device.

3 Features

Special features of this mixer amplifier:

- 4 microphone/line inputs
- 24 V phantom power
- Priority control
- CD/AUX input
- Input for external pre-amplifier
- Output for external power amplifier
- Screw terminals for speakers and mains-independent 24-V power supply

4 Installation and starting up

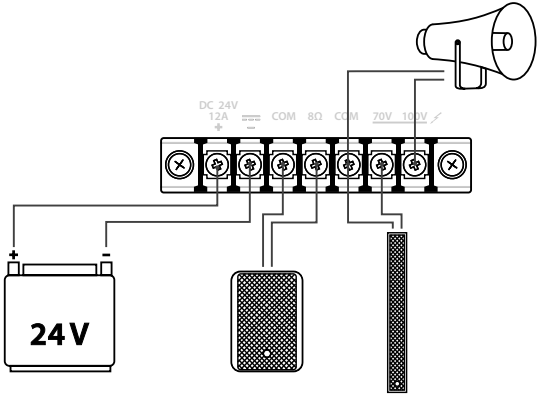
Unpack and check carefully there is no transportation damage before using the unit. Keep the equipment packaging. To fully protect the product against vibration, dust and moisture during transportation or storage use the original packaging or your own packaging material suitable for transport or storage, respectively.

Create all connections while the device is off. Use the shortest possible high-quality cables for all connections. Take care when running the cables to prevent tripping hazards.

4.1 Screw terminal strip

All speaker units and the battery for mains-independent power supply are connected via a screw terminal strip on the back of the device.

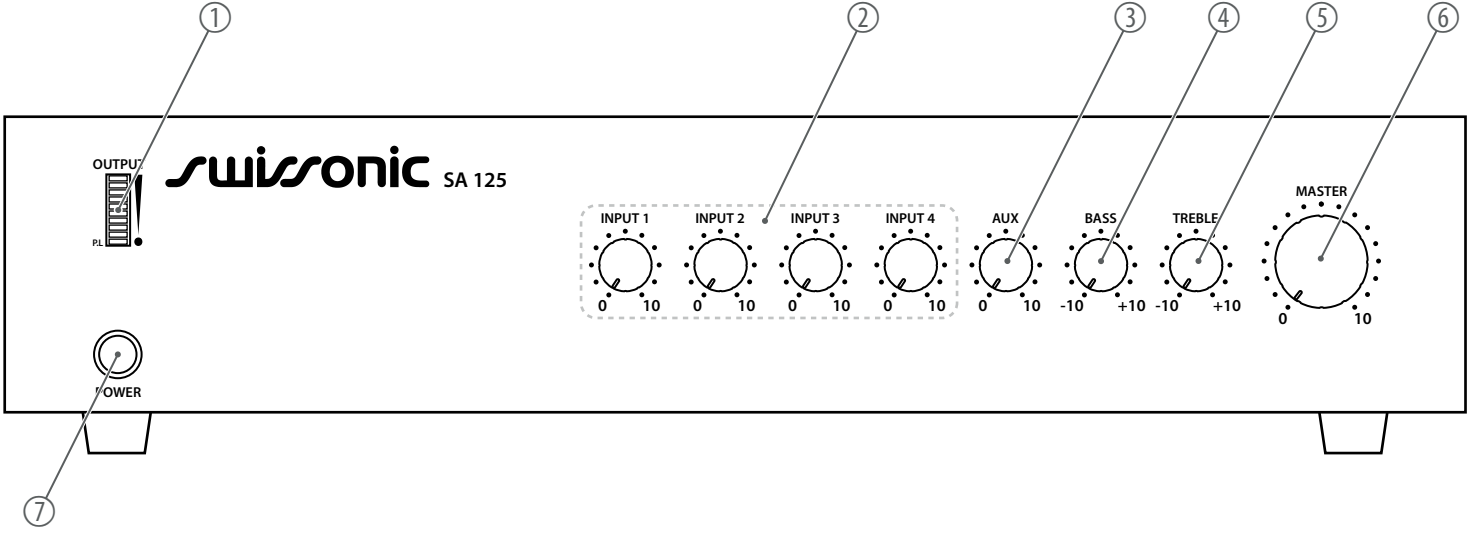
First detach the cover of the screw terminal strip using a suitable screwdriver. Loosen the required screw terminals (see connection diagram) and attach the necessary cables using a suitable screwdriver.



Finally check all cable connections for tightness and reattach the terminal screw strip cover to the device.

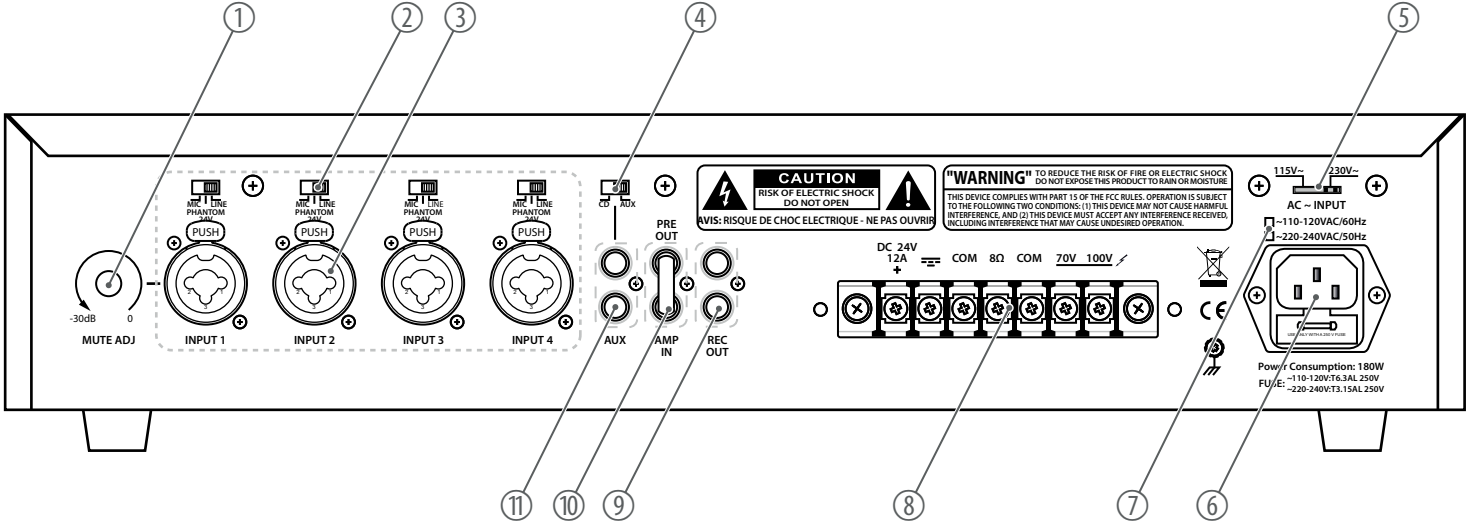
5 Connections and controls

Front



1	*[OUTPUT]* | LED chain: The bottom LED lights up permanently as soon as the device is switched on. The upper LEDs indicate the strength of the output signal, depending on the position of the MASTER control.
2	*[INPUT 1 – 4]* | Volume controls for inputs 1 to 4.
3	*[AUX]* | Volume control for the AUX input.
4	*[BASS]* | Control for boosting/attenuating the low frequencies (100 Hz). Starting from the neutral position, turn the control knob in clockwise or anti-clockwise direction to boost or attenuate the bass frequencies by up to ± 10 dB.
5	*[TREBLE]* | Control for boosting/attenuating the high frequencies (10 Hz). Starting from the neutral position, turn the control knob in clockwise or anti-clockwise direction to boost or attenuate the treble frequencies by up to ± 10 dB.
6	*[MASTER]* | Volume control for the signal output of the mixer amplifier.
7	*[POWER]* | Mains switch for turning the device on and off.

Back


1
2
3
4
5
-30dB
0
MUTE ADJ
MIC LINE
PHANTOM
PUSH
INPUT 1
INPUT 2
INPUT 3
INPUT 4
CD AUX
PRE OUT
AUX
AMP IN
REC OUT
CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN
AVIS: RISQUE DE CHOC ELECTRIQUE - NE PAS OUVRIR
"WARNING" TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK DO NOT EXPOSE THIS PRODUCT TO RAIN OR MOISTURE
THIS DEVICE COMPLIES WITH PART 15 OF THE FCC RULES. OPERATION IS SUBJECT TO THE FOLLOWING TWO CONDITIONS: (1) THIS DEVICE MAY NOT CAUSE HARMFUL INTERFERENCE, AND (2) THIS DEVICE MUST ACCEPT ANY INTERFERENCE RECEIVED, INCLUDING INTERFERENCE THAT MAY CAUSE UNDESIRED OPERATION.
DC 24V
12A
COM 8Ω COM 70V 100V
115V~ 230V~
AC ~ INPUT
~110-120VAC/60Hz
~220-240VAC/50Hz
Power Consumption: 180W
FUSE: ~110-120V:T6.3AL 250V
~220-240V:T3.15AL 250V
6
7
8
9
10
11

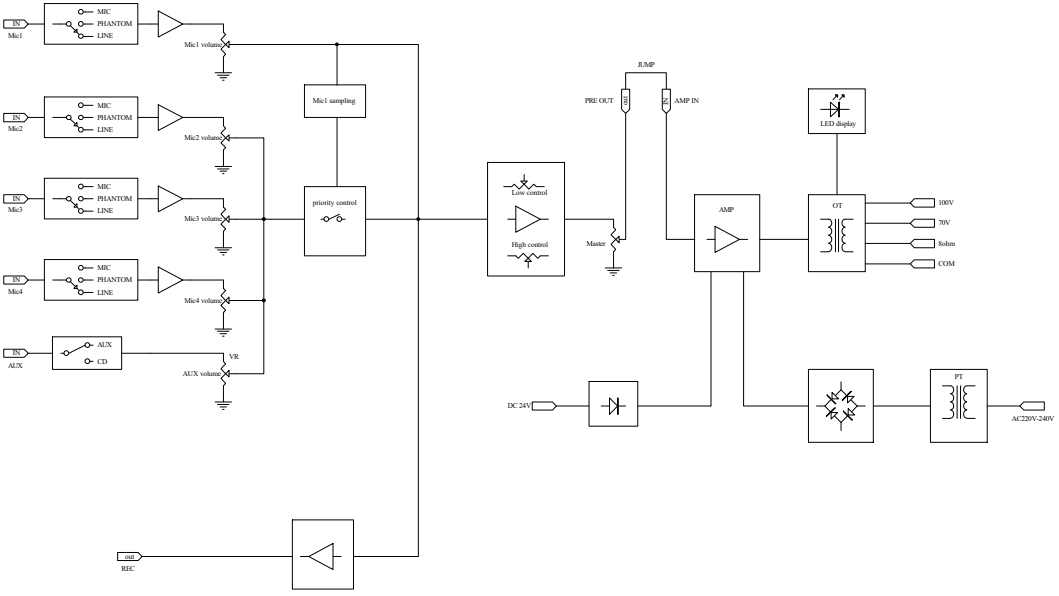
1	*[MUTE ADJ]* | Priority control for INPUT 1. This setting controls to which extent the volume levels of the other channels are decreased when an audio or microphone signal is output via channel 1. Use a suitable screwdriver to turn the control knob to the required position.
2	*[MIC] — [PHANTOM 24V] — [LINE]* | Input signal switch for the respective signal input.
3	*[INPUT 1 – 4]* | Signal inputs 1 to 4, designed as lockable combo XLR/jack sockets.
4	*[CD – AUX]* | Signal level selector switch for the AUX input.
5	*[AC INPUT]* | Selector switch for the supply voltage of the device (115 V or 230 V, factory-set default setting).
6	Rubber panel plug with fuse holder for the power supply.
7	Label indicating the factory-set supply voltage of the device (115 V or 230 V).
8	Screw terminal strip for connecting an external power supply and the speaker system(s), see .
9	*[REC OUT]* | Cinch output socket for connecting an external recording device.
10	*[PRE OUT]/[AMP IN]* | These two cinch sockets are bridged with a jumper by default. If necessary, they can be used to loop in an external equalizer or compressor or to control another power amplifier.
11	*[AUX]* | Cinch input socket for connecting an external audio device. Use the CD –AUX switch to adjust the signal level.

6 Technical specifications

Amplifier class		AB
Input connections	Power supply	Rubber panel plug C14
	24 V ⎓ 12 A	Terminal block
	MIC/LINE	4 × XLR / 6.35-mm jack combo socket, balanced
	CD/AUX	Cinch input socket (L/R)
	AMP IN	Cinch input socket
Input sensitivity		AUX: –15 dBV/1 kHz (unbalanced) CD: –6 dBV/1 kHz (unbalanced) MIC: –50 dBV/1 kHz (balanced/unbalanced) LINE: –15 dBV/1 kHz (balanced/unbalanced)
Output connections	COM, 8 Ω/70 V/100 V	Terminal block
	PRE OUT	Cinch output socket
	REC OUT	Cinch output socket (L/R)
Output power		Peak: 120 W
Frequency response		60 Hz … 18 kHz, ±3 dB

Signal-to-noise ratio		MIC/LINE: ≥ 65 dB AUX: ≥ 75 dB
Total harmonic distortion (THD)		≤0.5%, at 50% of maximum output power
Crosstalk		60 dB
Gain		MIC: 76 dB LINE/AUX: 41 dB
Tone control		Treble: ± 10 dB, 10 kHz Bass: ± 10 dB, 100 Hz
Power consumption		180 W
Supply voltage		115/230 V ~ 50/60 Hz 24 V ⎓ 12 A
Fuse		115 V: 5 mm x 20 mm, 6.3 A, 250 V, slow blow 230 V: 5 mm x 20 mm, 3.15 A, 250 V, slow blow
Dimensions (W × H × D)		420 mm × 88 mm × 262 mm
Weight		10 kg
Ambient conditions	Temperature range	0 °C…40 °C
	Relative humidity	20%…80% (non-condensing)

Block diagram



7 Plug and connection assignment

Introduction

This chapter will help you select the right cables and plugs to connect your valuable equipment in such a way that a perfect sound experience is ensured.

Please note these advices, because especially in 'Sound & Light' caution is indicated: Even if a plug fits into the socket, an incorrect connection may result in a destroyed power amp, a short circuit or 'just' in poor transmission quality!

Balanced and unbalanced transmission

Unbalanced transmission is mainly used in semi-professional environment and in hifi use. Instrument cables with two conductors (one core plus shielding) are typical representatives of the unbalanced transmission. One conductor is ground and shielding while the signal is transmitted through the core.

Unbalanced transmission is susceptible to electromagnetic interference, especially at low levels, such as microphone signals and when using long cables.

In a professional environment, therefore, the balanced transmission is preferred, because this enables an undisturbed transmission of signals over long distances. In addition to the conductors 'Ground' and 'Signal', in a balanced transmission a second core is added. This also transfers the signal, but phase-shifted by 180°.

Since the interference affects both cores equally, by subtracting the phase-shifted signals, the interfering signal is completely neutralized. The result is a pure signal without any noise interference.

1/4" TS phone plug (mono, unbalanced)

1	Signal
2	Ground, shielding

1/4" TRS phone plug (mono, balanced)

1	Signal (in phase, +)
2	Signal (out of phase, –)
3	Ground

RCA connection

Drawing and table indicate the pin assignment of an RCA plug.

1	Signal
2	Ground, shielding

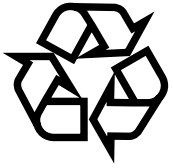
8 Cleaning

Fan grids

The fan grids of the device must be cleaned of any contamination, such as dust, etc. on a regular basis. Before cleaning, switch off the device and disconnect mains-operated devices from the mains. Only use pH-neutral, solvent-free and non-abrasive cleaning agents. Clean the unit with a slightly damp lint-free cloth.

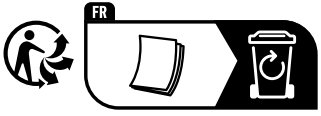
9 Protecting the environment

Disposal of the packing material



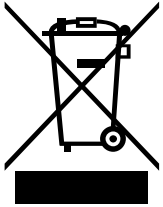
Environmentally friendly materials have been chosen for the packaging. These materials can be sent for normal recycling. Ensure that plastic bags, packaging, etc. are disposed of in the proper manner.

Do not dispose of these materials with your normal household waste, but make sure that they are collected for recycling. Please follow the instructions and markings on the packaging.



Observe the disposal note regarding documentation in France.

Disposal of your old device



This product is subject to the European Waste Electrical and Electronic Equipment Directive (WEEE) as amended.

Do not dispose of your old device with your normal household waste; instead, deliver it for controlled disposal by an approved waste disposal firm or through your local waste facility. If in doubt, consult your local waste management facility. You can also return the device to a retailer if they offer to take the device back for free or if they are legally obliged to do so. When disposing of the device, comply with the rules and regulations that apply in your country. You can also return your old device to Thomann GmbH at no charge. Check the current conditions on *www.thomann.de*.

Proper disposal protects the environment as well as the health of your fellow human beings. This is because the proper handling of old devices negates the potential negative effects of hazardous substances, and because it conserves resources by recycling them.

Also note that waste avoidance is a valuable contribution to environmental protection. Repairing a device or passing it on to another user is an ecologically valuable alternative to disposal.

If your old device contains personal data, delete those data before disposing of it.