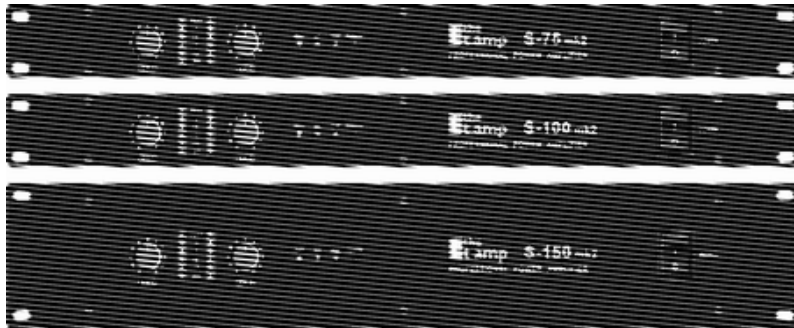




S-75 • S-100 • S-150
power amplifier



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1 General notes


This user manual contains important information on the safe operation of the device. Read and follow all safety notes and all instructions. Save this manual for future reference. Make sure that it is available to all persons using this device. If you sell the device to another user, be sure that they also receive this manual.

Our products are subject to a process of continuous development. We therefore reserve the right to make changes without notice.

Symbols and signal words

This section gives an overview of the symbols and signal words used in this user manual.

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.
CAUTION!	This combination of symbol and signal word indicates a possible dangerous situation that can result in minor 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 signs	Type of danger
	Warning – danger zone.

2 Safety instructions

Intended use

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!

Danger for children

Ensure that plastic bags, packaging, etc. are disposed of properly and are not within reach of babies and young children. Choking hazard!

Ensure that children do not detach any small parts (e.g. knobs or the like) from the unit. They could swallow the pieces and choke!

Never let children unattended use electrical devices.



DANGER!

Electric shock caused by high voltages inside

Within the device there are areas where high voltages may be present. Never remove any covers.

There are no user-serviceable parts inside.



DANGER!

Electric shock caused by short-circuit

Always use proper ready-made insulated mains cabling (power cord) with a protective contact plug. Do not modify the mains cable or the plug. Failure to do so could result in electric shock/death or fire. If in doubt, seek advice from a registered electrician.



CAUTION!

Possible hearing damage

With loudspeakers or headphones connected, the device can produce volume levels that may cause temporary or permanent hearing impairment.

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.



NOTICE!

Risk of fire

Do not block areas of ventilation. Do not install the device near any direct heat source. Keep the device away from naked flames.



NOTICE!

Operating conditions

This device has been designed for indoor use only. To prevent damage, never expose the device to any liquid or moisture. Avoid direct sunlight, heavy dirt, and strong vibrations.



NOTICE!

Power supply

Before connecting the device, ensure that the input voltage (AC outlet) matches the voltage rating of the device and that the AC outlet is protected by a residual current circuit breaker. Failure to do so could result in damage to the device and possibly injure the user.

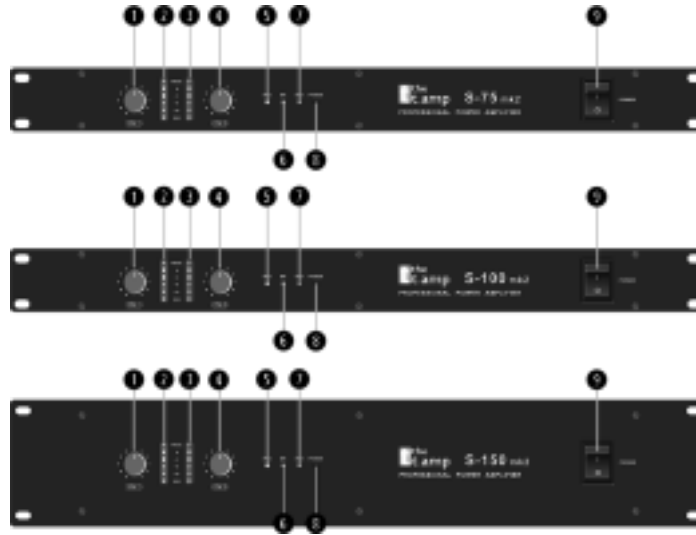
Unplug the device before electrical storms occur and when it is unused for long periods of time to reduce the risk of electric shock or fire.

**NOTICE!****Magnetic fields**

The device generates strong magnetic fields that can interfere with the function of poorly shielded devices. The strongest magnetic fields are directly above and below the power amplifier. Therefore, never place sensitive devices such as pre-amplifiers, radio transmission systems, or tape decks directly above or below the power amplifier. When installing the power amplifier into a rack, you should place it in the lowest position, and further equipment such as pre-amplifiers in the highest position.

3 Connections and operating elements

Front panel

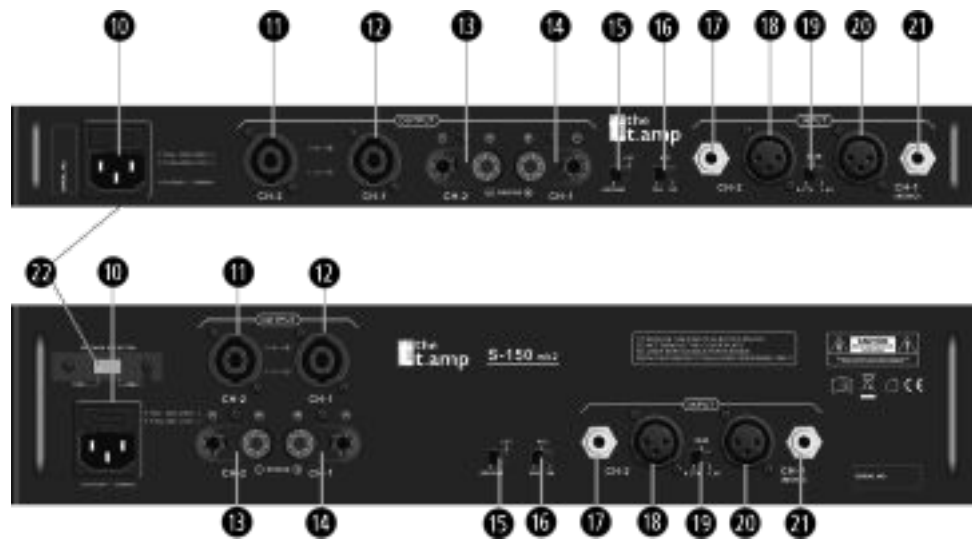


1	<p>CH-1: Input level controller for channel 1</p> <p>Use the input level controllers CH-1 and CH-2 (4) on the front panel to control the signal amplification in the respective channel. If possible, turn this control fully to the right stop (= 0 dB attenuation) for optimal headroom. Professional power amplifiers then output their rated power, if the input voltage is 0.775 V resp. 1.4 V (depending on the position of the switch for the input sensitivity [19]).</p>
2/3	<p>PEAK: Indicator for signal and maximum level</p> <p>These LED chains indicate the output power of the device in the respective channel. The PEAK indicator lights up when the output power reaches its maximum. If this indicator lights up continuously, the volume of the respective channel must be reduced. To do so, turn to the input level knob counter-clockwise.</p>
4	<p>CH-2: Input level controller for channel 2</p> <p>Input level controller for channel 2, functionality is equal to point (1).</p>

5	PRO: Indicator for activated protection circuit This indicator lights up, if one of the following situations arises in one of the channels: <ul style="list-style-type: none">• 3-5 seconds after switching on, as the speakers are still electrically disconnected from the power amp.• The temperature of the output transistors exceeds 85 °C.• A malfunction exists in the device.
6	BR: Indicator for mono operation in bridged mode Please read more about the available operating modes in chapter ↗ 'Possible operation modes' on page 27.
7	PAR: Indicator for mono operation in parallel mode Please read more about the available operating modes in chapter ↗ 'Possible operation modes' on page 27.

8	POWER: Power indicator light Lights up when the unit is turned on.
9	POWER: On / off switch (9) This switch turns the power on and off. When switching on the protection circuits are activated. After a few seconds you will hear two "clicks" - now the speakers are electrically connected to the amplifier and the device is ready to operate. When switching on electronic devices, especially power amps, the power consumption is particularly high. Make sure you don't turn on too many devices simultaneously. Otherwise, the power supply circuit may be overloaded and the RCD will disconnect the power supply.

Rear panel



10	<p>Mains connector with fuse holder</p> <p>Connect the supplied power cord here and supply the device with mains voltage.</p>
11/12	<p>Speaker outputs CH-1/2</p> <p>Connect speakers to the speaker outputs of channel 1 and 2 using SPK cables (wiring = 1+ 2+ 1- 2-)</p>
13/14	<p>Speaker terminals CH-1/2</p> <p>You can connect the speakers either with cable lugs or bare wire to the cable terminals on the rear panel.</p>
15	<p>Ground/Lift switch</p> <p>In normal operation signal source and power amplifier should share the same ground potential. In some constellations this admittedly leads to ground loops and thus to humming. If this happens vary the toggle switch setting for ground potential on the rear panel of the unit. This switch connects in one setting the shield/ground of the input signal with the housing of the power amp and thus with mains earthing. In the other setting there is no electrical connection between the shield/ground of the input signal and the power amp housing.</p>

16	STE / PAR / BR Use this switch to select the operating mode of the power amp: stereo (STE), parallel (PAR) or bridged (BR).
17	CH-2 Connect the line-level signals to be amplified to the 1/4" balanced TRS phone jack input of Channel 2 using a 1/4" phone jack cable.
18	CH-2 Connect the line-level signals to be amplified to the XLR input of Channel 2 using a XLR cable.
19	0.77 V 1.4 V Use this switch to adjust the input level at which the power amplifier should deliver its rated output power, "0.77 V" for units with -10 dBV outputs, or "1.4 V" for connecting devices with +4 dBu outputs. Often multiple amplifiers are used simultaneously. If you switch to the "26 dB" position, the signal will be amplified by all amps equally. Thus, you can combine different power amps of the S-series, and always get the same output level.

20	CH-1 (MONO) Connect the line-level signals to be amplified to the XLR input of Channel 1 using a XLR cable.
21	CH-1 (MONO) Connect the line-level signals to be amplified to the 1/4" balanced TRS phone jack input of Channel 1 using a 1/4" phone jack cable.
22	Switch for power supply voltage Before connecting the amplifier to the mains power supply, ensure that the mains voltage switch on the bottom side (or rear side for S-150) is in the position that corresponds to the actual power available (in Germany AC 230 V). If in doubt, consult an electrician.

4 Installation and starting up

Unpack and check carefully there is no transportation damage before using the unit.

Establish all connections as long as the unit is switched off. Use the shortest possible high-quality cables for all connections.



DANGER!

Electric shock caused by high voltages at the power amplifier output

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.



NOTICE!

Magnetic fields

The device generates strong magnetic fields that can interfere with the function of poorly shielded devices. The strongest magnetic fields are directly above and below the power amplifier. Therefore, never place sensitive devices such as pre-amplifiers, radio transmission systems, or tape decks directly above or below the power amplifier. When installing the power amplifier into a rack, you should place it in the lowest position, and further equipment such as pre-amplifiers in the highest position.

Models S-75 and S-100

Rack mounting

The unit has been designed for rack mounting in a standard 19-inch rack; it occupies one rack unit.

Model S-150

Rack mounting

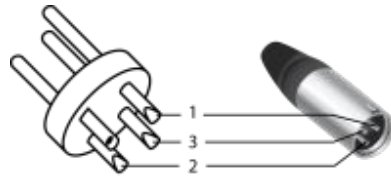
The device has been designed for rack mounting in a standard 19-inch rack; it occupies two rack units.

4.1 Pin assignment

You can use XLR and phone jack connectors with either balanced or unbalanced wiring.

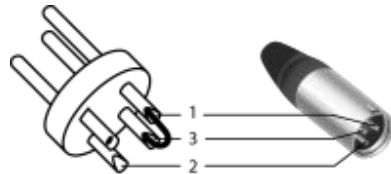
XLR connection for signal in and outputs

XLR mounting sockets provided for signal inputs. XLR mounting plugs provided for signal outputs. Drawings and descriptions explain the pin assignment.



Balanced wiring:

1	Ground, shielding
2	Positive signal (+)
3	Negative signal (-)



Unbalanced wiring:

1	Ground, shielding
2	Signal
3	bridged with Pin 1

1/4" connectors for signal in and outputs

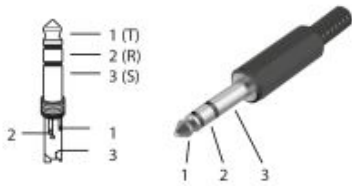
Drawings and descriptions explain the pin assignment of 1/4" connectors.

Unbalanced wired 1/4" TS jack:

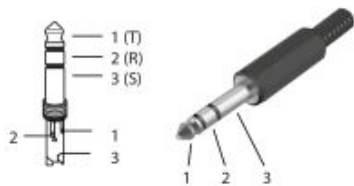


1	Signal
2	Ground, shielding

Unbalanced wired 1/4" TRS jack:



1	Signal
2	Ground, shielding



Balanced wired 1/4" TRS jack:

1 (Tip)	Positive signal (+)
2 (Ring)	Negative signal (-)
3 (Sleeve)	Ground, shielding

4.2 Tips on handling speakers

We recommend you to set up the speakers in a way, that the sound signals can reach the audience unobstructedly. It will often be helpful to mount the speakers on tripods. Thus, the sound will be evenly spread with maximum range throughout the audience area.

Always use high grade cable to connect your equipment. Otherwise you won't reach maximum sound quality.

For optimum results both impedance and power handling of the speakers must match the requirements of the amplifier. Always follow the technical specifications of the speakers! The overall impedance of the connected loudspeakers must not exceed the minimum output impedance of the amp. The amp's RMS output power should be 50 % above the power handling capacity of the connected speakers.

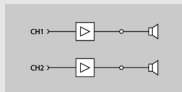
If you notice distortion during operation, either the amp or the speaker is overloaded. This may permanently damage the amp or the speaker. Always reduce the volume when you hear distortion.

4.3 More useful tips

Possible operation modes

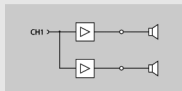
Depending on the individual application, the amplifier can be used in different operation modes:

Stereo mode



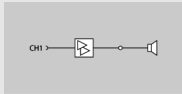
The two amplifier channels operate independently of one another, either channel (CH1 and CH2) is amplified and connected to loudspeakers, the volume can be controlled separately for the two outputs.

Parallel mode



The two amplifier channels receive the same input signal from channel CH1 and loudspeakers are connected to each amplifier, the volume can be controlled separately for the two outputs.

Bridged mode



The two amplifier channels are internally connected in such a way that twice the output power is available. Only the input signal from channel CH1 is amplified and loudspeakers are connected only to the correspondingly marked output. The volume is controlled via the control knob for channel CH1.

For each output of the amplifier, the total impedance resulting from the loudspeakers connected to it must not be below the allowed minimal impedance of the amplifier output. If you connect more than one loudspeaker to an amplifier output, please note the following:

- If the loudspeakers are connected in a series, the individual impedances will be added up.
- If the loudspeakers are connected in parallel, the reciprocal of the total impedance equals the sum of the reciprocals of the individual impedances.

Example: If you have two loudspeakers with the same impedance, their impedance doubles if they are connected in a series, their impedance halves if they are connected in parallel.

For detailed information related to this topic please refer to our Online Guide 'PA Speakers' (www.thomann.de).

5 Technical specifications

Model no.	S-75	S-100	S-150
Output power			
stereo 8 Ω	2 x 45 W	2 x 65 W	2 x 85 W
stereo 4 Ω	2 x 75 W	2 x 100 W	2 x 150 W
bridged 8 Ω	150 W	200 W	250 W
parallel 2 Ω		200 W	
Frequency response	10 Hz - 50 kHz, -1.5 dB		
Input sensitivity	0.77 V / 26 dB / 1.4 V		
Maximum input level	21 dBV / 9 V		
Input impedance, active balanced	20 k Ω		
Signal-to-noise ratio, A-weighted, RMS	> 80 dB		> 85 dB
Crosstalk @ rated power, 8 Ω , 1 kHz	> 70 dB		

Technical specifications

Model no.	S-75	S-100	S-150
Damping factor, $f=1$ kHz, 8Ω	> 150 dB		
Slew rate	35 V/ μ s		40 V/ μ s
Protection circuits	Short circuit current limit, DC voltage fault, fuse for power supply, limiter, temperature, mains transients		
Indicator lights	Power (green), protection (yellow), clipping (red), bridged mode operation (green), parallel mode operation (green)		
Cooling	Fanless		
Power consumption @ half output power, 8Ω	65 W	100 W	120 W
Power supply voltage	AC 115 V / 230 V, 50-60 Hz		
Dimensions (W \times D \times H) in mm	483 x 250 x 44	483 x 250 x 44	483 x 270 x 88

6 Protecting the environment

Disposal of the packaging material



For the transport and protective packaging, environmentally friendly materials have been chosen that can be supplied to normal recycling.

Ensure that plastic bags, packaging, etc. are properly disposed of.

Do not just dispose these materials with your normal household waste, but make sure that they are fed to a recovery. Please follow the notes and markings on the packaging.

Disposal of your old device



This device is subject to the European directive 2002/96/EC.

Do not dispose the device with your normal household waste.

Dispose this device through an approved waste disposal firm or through your local waste facility. When discarding the device, comply with the rules and regulations that apply in your country. If in doubt, consult your local waste disposal facility.

S-75 • S-100 • S-150



