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ÄNDERUNGEN VORBEHALTEN

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User Instructions

DSP 10K4



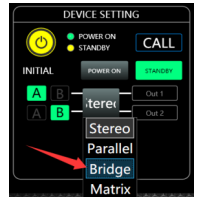
Englisch

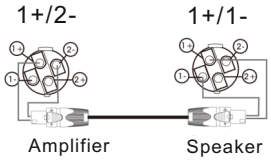
Please read this manual carefully before operating the equipment.

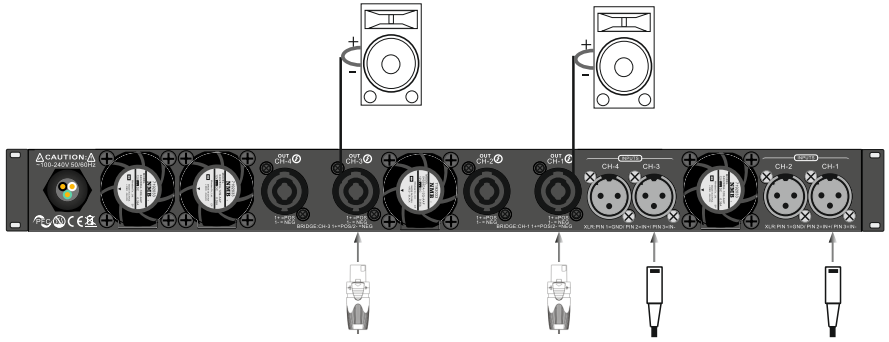
Version 1.0

Four Channel Bridge Mode Wiring Instructions

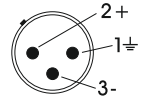
1.Use Speakon connectors to achieve bridged mono connection mode, allowing the amplifier to operate in bridged mode. The output power is doubled.
2.Connect the speaker to the Speakon connectors as shown in the figure below.
3.As shown in the figure on the right, select Bridge on DEVICE SETTING of the operating software.
4.When connected in bridge mode, only gain control of CH1 and CH3 is available.







Mode selection and setting is done by DSP software user interface.



Important Safety Instructions

1.Read these instructions.
2.Keep these instructions.
3.Heed all warnings.
4.Follow all instructions.
5.Do not use this apparatus near water.
6.Clean only with a dry cloth.
7.Do not block any ventilation opening. Install in accordance with the manufacturer's instructions.
8.Do not install near any heat source such as radiator, heat register, stove, or other apparatus (including amplifier) that produce heat.
9.Do not defeat the safety purpose of the polarized or grounding-type 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 is provided for your safety. If the provided plug does not fit into your socket, consult an electrician for replacement of the correct socket.
10.Protect the power cord from being walked on or pinched, particularly at the plug, convenience receptacle, and the point where they exit from the apparatus.
11.Only use attachments/accessories specified by the manufacturer.
12.Use only with a 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.
13.Unplug this apparatus during lightning storms or when unused for long periods of time.
14.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.
15.Use the mains plug to disconnect the apparatus from the mains.
16.WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPARATUS TO RAIN OR MOISTURE.
17.WARNING: THIS APPLIANCE SHALL BE CONNECTED TO A MAINS SOCKET OUTLET WITH A PROTECTIVE EARTHING CONNECTION.
18.DO NOT EXPOSE THIS EQUIPMENT TO DRIPPING OR SPLASHING AND ENSURE THAT NO OBJECTS FILLED WITH LIQUIDS, SUCH AS VASES, ARE PLACED ON THE EQUIPMENT.
19THE MAINS PLUG OF THE POWER SUPPLY CORD SHALL REMAIN READILY OPERABLE.

TO PREVENT ELECTRIC SHOCK DO NOT REMOVE TOP OR BOTTOM COVERS. NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

TO COMPLETELY DISCONNECT THIS EQUIPMENT FROM THE AC MAINS, DISCONNECT THE POWER SUPPLY CORD PLUG FROM THE AC RECEPTACLE. THE MAINS PLUG OF THE POWER SUPPLY CORD SHALL REMAIN READILY OPERABLE.

WARNING: Pay attention to a procedure, practice, condition or the like, if not correctly performed or adhered to, could result in personal injury or death.
CAUTION: Pay attention to procedure, practice, condition or the like, if not correctly performed or adhered to, could result in damage or destruction to part or all of the component.

Watch for these Symbols

The lightning bolt triangle is used to alert the user to the risk of electric shock.

The exclamation point triangle is used to alert the user to important operating or maintenance instructions.





This device is designed and evaluated under the condition of 2000 meters tall above sea level and it can be only used in locations below 2000 meters tall above sea level. Using the device above 2000 meters altitude would result in high safety risk.

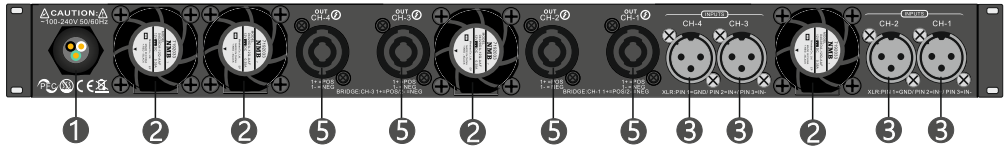
The device is designed and evaluated under the condition of non-tropical climate; and, it can be only used in locations in non-tropical climate areas. Using the device in tropical climate areas would result in high safety risk.

CAUTION!

Do not locate sensitive high-gain equipment such as pre-amplifiers or tape decks directly above or below the unit because this amplifier has a high power density, it has a strong magnetic field which can induce hum into unshielded devices that are located nearby. The field is strongest just above and below the unit.

If an equipment rack is used, we recommend locating the amplifier(s) in the bottom of the rack and the pre-amplifier or other sensitive equipment at the top.

Rear Panel Introduction



·1 Power connector
·2 Cooling fans
·3 Signal input XLR female connectors, the balanced type of input connectors.
·4 Signal input XLR male connectors, LINK input plug to connect another device.
·5Signal output connectors, four core SPEAKON speaker sockets.

DSP 10K4 Specifications

Parameter	4x1600W
Stereo output power RMS, 8 ohms	4x1600W
Stereo output power RMS, 4 ohms	4x2720W
Stereo output power, 2 ohms	4x3570W
Bridged output power, 16 ohms	2x3200W
Bridged output power, 8 ohms	2x5440W
Bridged output power, 4 ohms	2x7140W
RMS output voltage (THD=1%, 1kHz)	109.5V
Maximum power consumption (W)	7004W
Maximum power consumption (A)	31A
Net weight	12.25kg
Gross weight (shipping)	13.85kg

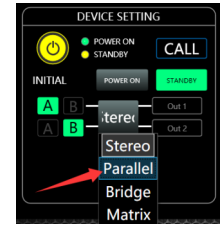
Parameter	Specification
Input sensitivity options	35/32/29/26dB; 41/38/35/32dB
Input sensitivity voltage	0.775V / 1.125V / 1.414V / 2.25V
Voltage gain	42.7 / 40.5 / 32
THD (total harmonic distortion)	0.01% (10% rated output power, 1kHz, 8 ohm)
IMD (intermodulation distortion)	<= 0.15% (8 ohm, 1kHz, 1/8 rated power)
S/N ratio (20Hz-20kHz, 4 ohms)	> 105dB A (20Hz-20kHz, 8 ohm)
Cross-talk (1kHz, 4 ohms)	>= 90dB (lower than rated output power, 20Hz-1kHz, 8 ohm)
Frequency response	10Hz to 20kHz, +/-0.5dB
Input impedance	Balanced 20k / non-balanced 10k
Damping factor (10-400Hz, 8 ohms)	>= 1000 (20Hz-20kHz, 8 ohm)
Slew rate	>= 20V/us
Power requirement	90-260V, 50/60Hz
Dimensions (W x H x D)	483 x 44 x 465 mm
Shipping dimensions (W x H x D)	590 x 110 x 570 mm

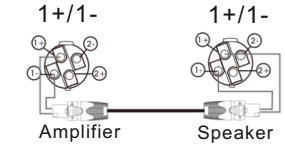
The above power measured using a 1 kHz sinusoidal wave with a 20 ms pulse at 1% total harmonic distortion

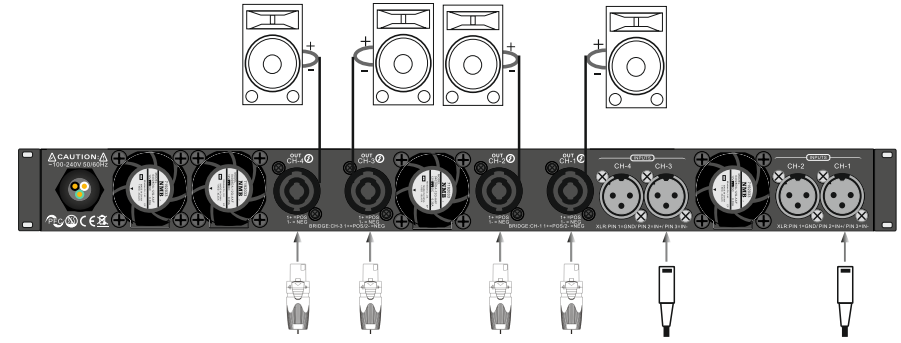
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9. Bridge Mode Instructions
10. Parallel Mode Instructions

Four Channel Parallel Mode Wiring Instructions

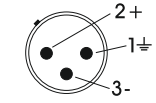
1.Using SPEAKON connector for parallel mode, signal input from two channels to drive four speakers for sound.
2.Connect the speaker to the Speakon connectors as shown in the figure below.
3.As shown in the figure on the left, select Parallel on DEVICE SETTING of the operating software.
4.When connected in parallel mode, only gain control of CH1 and CH3 is available.







Mode selection and setting is done by DSP software user interface.



Product Features

DSP Features Highlighted

High-performance 4-in-4-out DSP processor board, integrating DSP digital signal processing technology and network communication technology. Primarily used for constructing the preamplifier section of power amplifiers. The DSP 10K4 provides gain for different amplifier solutions. Matching function, providing amplifier temperature, voltage, current, and load detection interfaces.
Equipped with precise compressors, limiters, noise gates, parametric equalizers (PEQ), dynamic equalizers (DEQ), and device presets equipment lock, amplifier gain matching function. The Windows operating software Mconsole provides an intuitive user interface that is capable of quickly adapting to operations.
Supports multiple connection methods: USB, TCP/IP, COM.
Supports 48k FIR filters. Through the FIR Designer function window of Mconsole, users can easily export/input the speaker data measured by Smaart/REW/rePhase, and utilize functions such as automatic amplitude and automatic phase.
Flexible compensation of amplitude and phase curves for speakers.
Dante is optional available.

DSP Main Functions

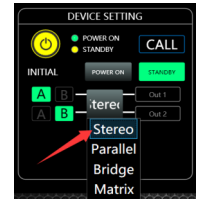
Function	Function
High-performance DSP with 450MHz processing	Parameter Equilibrium PEQ
Sampling rate: 96kHz, 24-bit, professional-grade	Maximum 48dB/Oct High and Low Pass Filter
Balanced analog signal pin interface	48K FIR filter and automatic phase correction function
AES/EBU Digital Input Interface	FIR input 1024 taps/output 512 taps
Optional Dante network audio module	Can import speaker measurement parameters such as Smaart/Auto FIR
Amplifier gain matching	Temperature, voltage, current, load monitoring pin interface
DSP 4x4 Matrix Processing Architecture	USB, TCP/IP, COM control pin interface
96K IIR up to 14 filter types	Optional 2-inch IPS color screen
Dynamic Equilibrium (DEQ)	Constant voltage and resistance supported: 70V-100V, 8 ohms, 4 ohms (for some models)

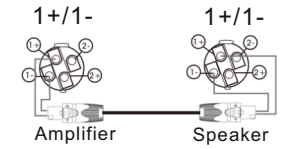
DSP Parameters

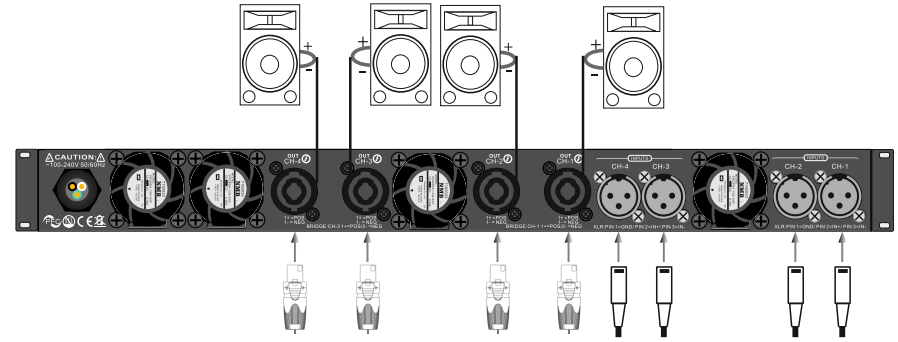
Parameter	Specification
Input audio source	Analog, DANTE, AES67; test signals: pink noise, white noise, sine wave
Sampling rate	96kHz
Frequency division	Butterworth, Bessel, Linkwitz slope 6-24
DSP preset	80 preset positions
Output limiter	Start control level -90dBu to 24dBu, release time 1-2895ms
Output compressor	Soft inflection point, control level, control time, compression ratio, release time
FIR function	Input supports 4x1024 taps, output supports 4x512 taps
DSP matrix	4x4 matrix
Input noise gate	Start time 1-2895ms, release time 1-2895ms, start level -120dBu to 0dBu
Input/output EQ	Input EQ 15 parameter equalities, output EQ 10 parameter equalities, with dynamic EQ adjustment
Delay	Input Delay: 2000ms; Output Delay: 2000ms
Network specifications	TCP/IP, 1000base-T/100base-TX, RJ45x2

Four Channel Stereo Mode Wiring Instructions

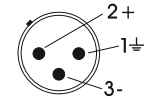
1.Use SPEAKON connectors for stereo mode; connect four input channels to drive four separate speakers.
2.Connect the speakers to the SPEAKON connectors as shown in the diagram below.
3.In the DSP software (MConsole), open DEVICE SETTING and select “Stereo”.
4.When in stereo mode, gain control for CH1, CH2, CH3 and CH4 is active.







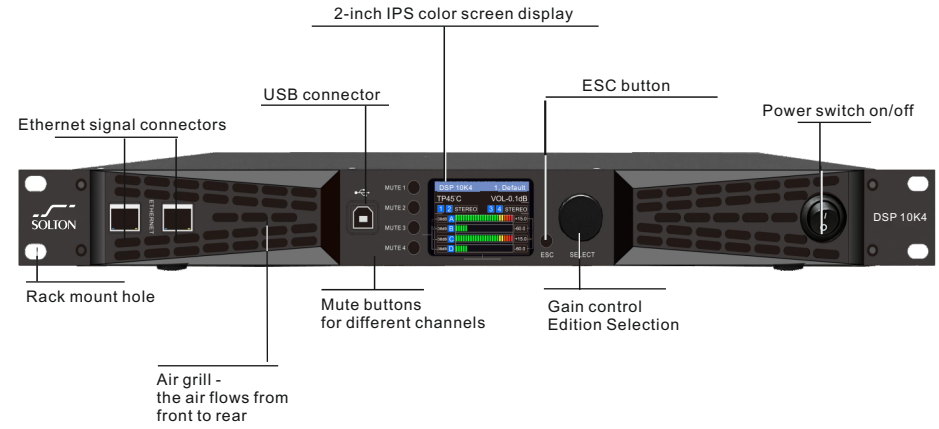
Mode selection and setting is done by DSP software user interface.



Emergency Response Methods in Case of Malfunction

Failures	Possible Causes	Response Methods
Power supply failed	Power cord not connected or fuses burnt	Plug power cord into the power socket or replace same specifications of fuses
No sound from speaker	Speaker wire not connected or low level of volume	Reconnect the speakers or adjust the volume
Relay resets switch	Short circuit from speaker connection or speaker unit failure	Check connection of the speaker and the speaker units

Front Panel Introduction



Display Screen Introductions

