RODEC®

USER MANUAL

BX9 Original

Electromagnetic and safety compliances

- This product complies with the European Electromagnetic Compatibility Directives 89/336/EEC & 92/31/EEC and the European Low Voltage Directives 73/23/EEC & 93/68/EEC.

- In accordance with the provisions of Council Directive 89/336/EEC on the approximation of the laws of the Member States relating to electromagnetic compatibility**,** this product is in conformity with the following specifications:

  NEN-EN 55103-1: Electromagnetic compatibility.
  Product family standard for audio, video, audio-visual entertainment lighting control equipment for professional use. Part 1: Emission. (September 1995)

  NEN-EN 55103-2 Electromagnetic compatibility.
  Product family standard for audio, video, audio-visual entertainment lighting control equipment for professional use. Part 2: Immunity. (September 1995)

- This product is designed to comply with the following standards:

  UL 60950 3rd edition (2000) standard

  TUV EN 60950: 1992+A1+A2+A3+A4+A11 (1997) standard

IMPORTANT SAFETY INSTRUCTIONS

PLEASE READ INSTRUCTIONS BEFORE OPERATING THE EQUIPMENT

1) For your own safety please read the user manual before operating or connecting the unit.
2) The user manual must be in possession of the owner of the mixing panel. This manual must be kept in a safe place for future reference.
3) The mixing panel must be connected to a mains power supply with appropriate grounding. This is necessary for the optimal working of the mixing panel and to assure the safety of the user.
4) Always handle the power cord by the plug, do not pull the cord. Do not use damaged power cord or plug. Damaged power cords or plugs can cause fire or create a shock hazard.
5) Do not open the unit. There are no serviceable parts inside. Only qualified service technicians can service the unit.
6) Do not expose to rain or water. Do not spill liquid or insert objects inside the unit. Rain, water or liquid such as cosmetics as well as metal may cause electric shocks, which can result in fire or shock hazard. If anything gets inside, immediately unplug the power cord.
7) If the mixing panel is not used for a longer period (more than one day), it is recommended to disconnect the unit from the power supply. Switching off the power switch does not completely isolate the mixing panel.
8) **WARNING!** The sound and intensity volume of this product can be very strong and, if not used properly or if used in close proximity, can cause temporary or permanent damage to one's hearing, perhaps even deafness. Use with caution and common sense.

INSTALLATION OF THE MIXING PANEL

1) The set can be used in every position.
2) Do not place the set into direct sunlight or in a warm, humid or dusty place. The operating environment temperature should be between +5°C and +35°C. The relative humidity of the air should not exceed 85%.
3) Always place the unit in a well ventilated area.
4) To avoid disturbances, do not place the set near disturbing equipment such as transmitters, cell phones, electrical motors.
5) Avoid dust e.g. cigarette ashes on the mixing panel. Also avoid smoke e.g. smoke machines or cigarettes from entering the unit. Smoke will accelerate wear on the electronic circuits, potentiometers and faders of the mixing panel.
6) Do not place heavy or sharp objects on the mixing panel as these can damage the knobs, switches, LEDs.
7) Manipulate the console with care. Avoid abrupt movements of the controls.
8) If the mixing panel has to be transported, please use the original packaging or use an fitting flight case. Avoid shocks.

CLEANING OF THE MIXING PANEL

1) Do not use chemical products or solvents to clean the set. To clean the mixing panel, it is best to use a soft brush or a dry lint-free cloth.
2) Do not apply contact spray or other products in the faders as these products can damage the faders.

Congratulations with the purchase of a **RODEC BX9 Original** mixing panel!
You are the owner of a top-line mixing panel capable of outstanding performance in combination with other high-grade systems.

RODEC mixing panels have a reputation for high quality, robust built and a good sound. RODEC mixers are used in the top league discotheques, by the most famous DJ's and by the largest professional rental companies all over the world.

The new top-line series have been designed and built with the same precision and devotion as known for years. The well known analogue sound has been kept and has been completed with extra features and I/O.

This User Manual will guide you through the setup of the mixing panel and will describe in detail all connectors, controls and operational features of the equipment, as well as different application setups.

Further information about this mixing panel can be found on our website:

http://www.rodec.com

For questions, more information or service needs of your mixing panel, contact the distributor or service center in your country. RODEC possess a widely branched network of distributors and service centers worldwide. The RODEC distributor list can be found on our website.

Please mention serial number, date and place of purchase for all matters concerning service.

MODEL BX9 Original
SERIAL NUMBER …… (on the back of the set)

Although this manual has been compiled with utmost attention, we do not assume responsibility for inaccuracies. Updates or modifications can be applied without prior notice.

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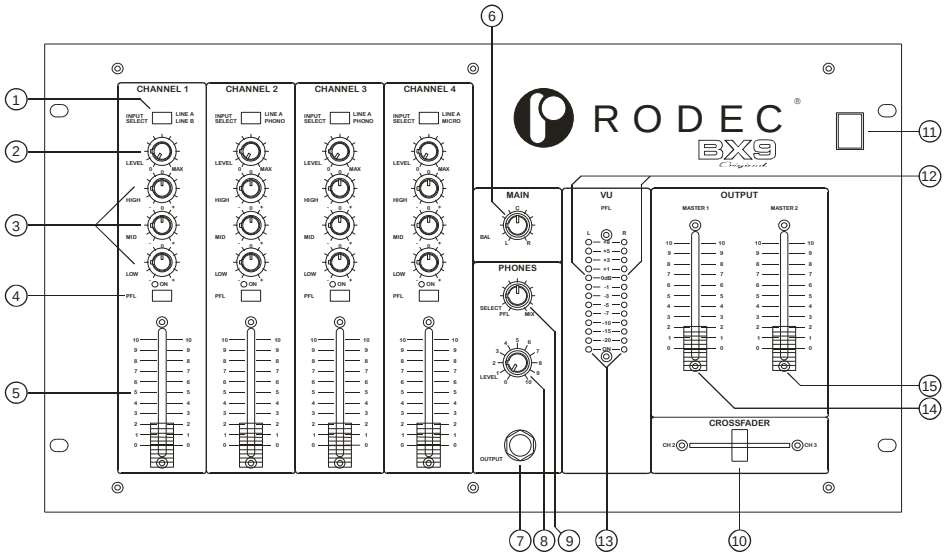
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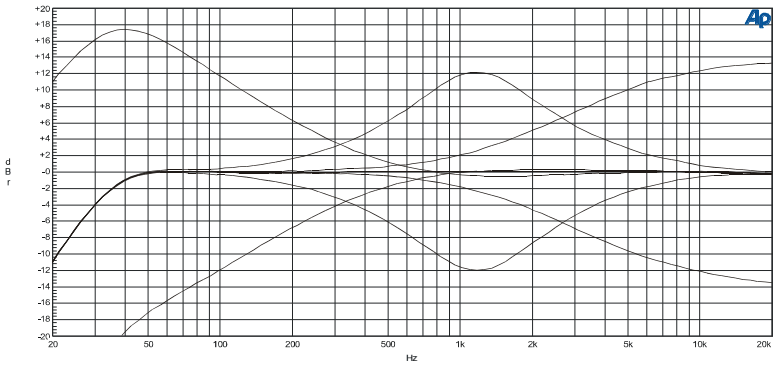
Front panel with controls



1) **Input select switch**
This selector is used to select the input signal: LINE A, LINE B, PHONO, MICRO.

2) **Input level potentiometer**
With this control the input level of each input channel can be set.

3) **Equalizer controls**
These controls regulate Treble, Middle and Bass levels.



4) **PFL switches**
With these switches you can select the different input sources for the headphones.

5) **Channel faders**
Volume control for every input channel.

6) **Balance control**
The balance between Left and Right channel is adjusted by using this knob. When it is set to the center position, the gain is the same for both channels. When turned to the left, the right channel will decrease. When turned to the right, the left signal will decrease

7) **Phones output**
Output for high level headphones monitoring. With the PFL switches (4) and the headphones-select potentiometer (9), the connected audio sources or the main-mix can be made audible without manipulating the output signal (Headphones 32-600Ω).

8) **Headphones volume control**
The volume of the headphones can be adjusted with this knob.

9) **Headphones-select potentiometer**
This potentiometer selects the signal for the headphones output. When turned completely to the left, the headphones will monitor the signal selected with the channel PFL-switches (4). When turned completely to the right, the headphones will monitor the actual mix-signal. In any intermediate position the headphones will monitor a mix of the PFL-signal and the actual mix-signal.

10) **Cross fader**
With this fader you can directly fade over between the channels 1-2 and 3-4. When the knob is moved completely to the left, the signal of the channels 1 and 2 will appear on the output. When the knob is moved to the right, the signal of the channels 3 and 4 will appear on the output. In between there will be a mix of both signals.

11) **Power switch**
Controls the supply of AC power to the set. A single push turns on the mixing panel, a second push turns it off.

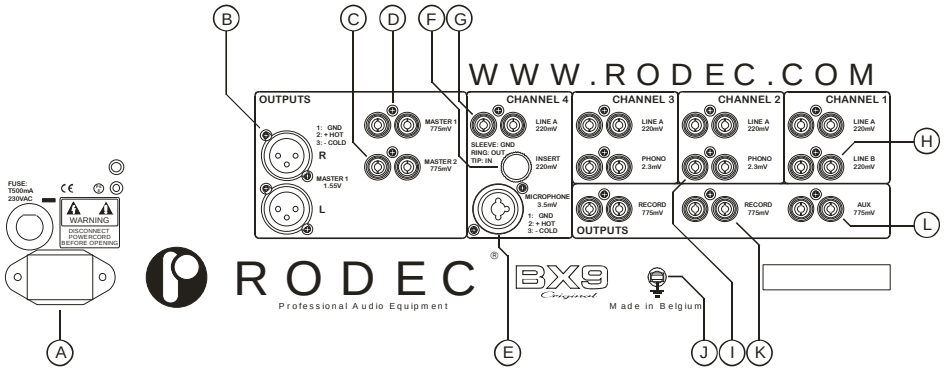
12) **VU meters**
The VU meters indicate the PFL signal.

13) **Power "ON" indicators**
These indicators light up when the power is on.

14) **Master 1 output fader**
Volume controls final output of mixer towards Slave or integrated amplifiers.

15) **Master 2 output fader**
Volume controls final output of mixer towards Slave or integrated amplifiers.

Back panel with connectors



A) **Power inlet**
Universal mains power inlet.

B) **Symmetrical master output 1**
Symmetrical output to connect a power amplifier or loudspeaker processor. The output level can be set with Master fader 1 (14) from 0 to maximum (1.55V).

C) **Asymmetrical master output 2**
Asymmetrical output to connect a power amplifier. The output level can be set with Master fader 2 (15) from 0 to maximum (0.775V).

D) **Asymmetrical master output 1**
Asymmetrical output to connect a power amplifier. The output level can be set with Master fader 1 (14) from 0 to maximum (0.775V).

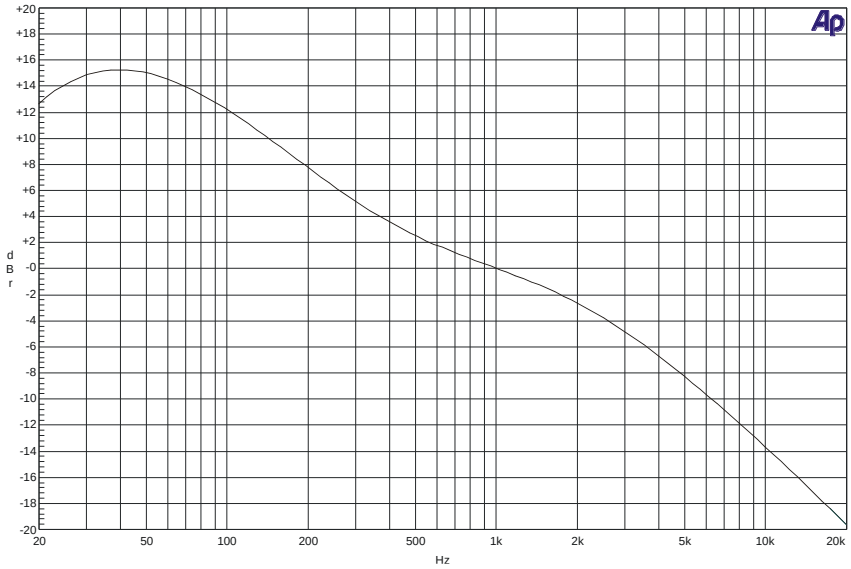
E) **Micro input**
Balanced microphone input. To obtain good signal quality a microphone with balanced output must be used. The use of a microphone without balanced output is also possible.

F) **Effects IN/OUT**
Input and output to connect Effect equipment to the microphone channel. If there is no plug in the JACK connector, the microphone channel works normally. If there is a plug inserted in the JACK, the internal link is interrupted. Sensitivity 220mV.

G) **Analogue line input A**
Analogue asymmetrical input with a sensitivity of 220mV to connect equipment such as a CD player, MD player, DVD player, MP3-player, HD-player, analogue or digital tuner, cassette player or video player.

H) **Analogue line input B**
Analogue asymmetrical input with a sensitivity of 220mV to connect equipment such as a CD player, MD player, DVD player, MP3-player, HD-player, analogue or digital tuner, cassette player or video player.

I) **PHONO input**
Phono input with a sensitivity of 5.2mV and built-in RIAA correction.



J) **Ground-terminal**
Terminal to connect the ground wire of the vinyl turntable.

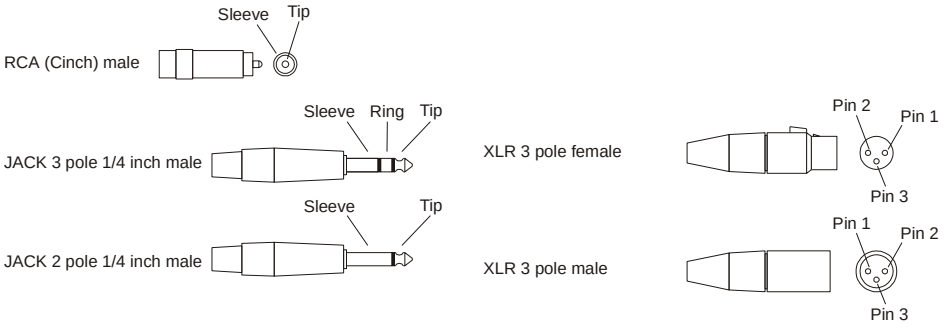
K) **Analogue recording output**
Output to connect an analogue recording device or (HIFI) video recorders to make recordings.

L) **Auxiliary output**
Output to connect another mixing panel, pre-amplifier, light controlling device, etc.

Note: Please use signal cables with a length not exceeding 1 meter for the inputs and the outputs.

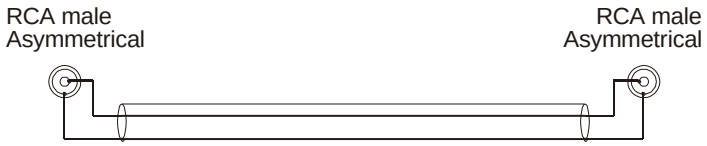
Cable configurations

a) Different audio connectors



b) Different audio cables

1) Asymmetrical RCA cable:



Used for connections between: CD-player, MD-player/recorder, Vinyl turntable, DVD-player/recorder, amplifier, etc and mixing panel.
For connections of analogue signals, you need 2 of these cables for stereo

2) Symmetrical XLR cable:

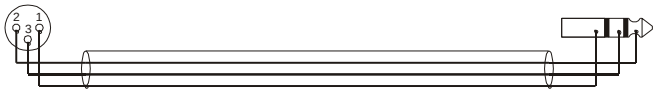


Used for connections between: microphone, amplifier, equalizer, loudspeaker-processor, limiter, etc and mixing panel.
For connections of analogue signals, you need 2 of these cables for stereo

3) Symmetrical XLR female to JACK 3pole male cable:

XLR 3 pole female
Symmetrical

JACK 3 pole 1/4 inch male
Symmetrical

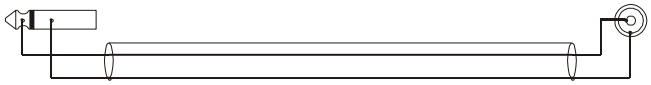


Used for connections between: microphone, amplifier, loudspeaker-processor, etc and mixing panel.
For stereo connections, you need 2 of these cables

4) Asymmetrical JACK 2 pole male to RCA male cable:

JACK 2 pole 1/4 inch male
Asymmetrical

RCA male
Asymmetrical

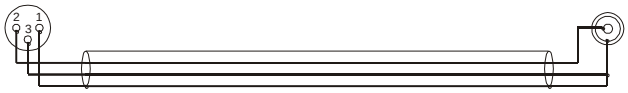


Used for connections between: electronic musical instrument, synthesizer, sampler, effects-machine, amplifier, recorder, etc and mixing panel.
For stereo connections, you need 2 of these cables

5) Symmetrical XLR female to asymmetrical RCA male cable:

XLR 3 pole female
Symmetrical

RCA male
Asymmetrical

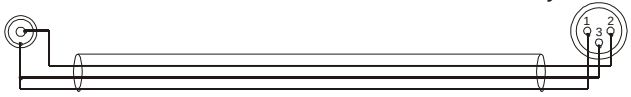


Used for connections between: professional CD-player, professional MD-player, sampler, effects-machine, etc and mixing panel.
For stereo connections, you need 2 of these cables

6) Asymmetrical RCA male to symmetrical XLR male cable:

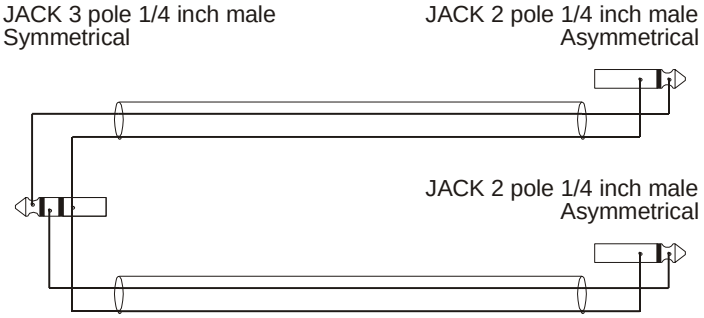
RCA male
Asymmetrical

XLR 3 pole male
Symmetrical



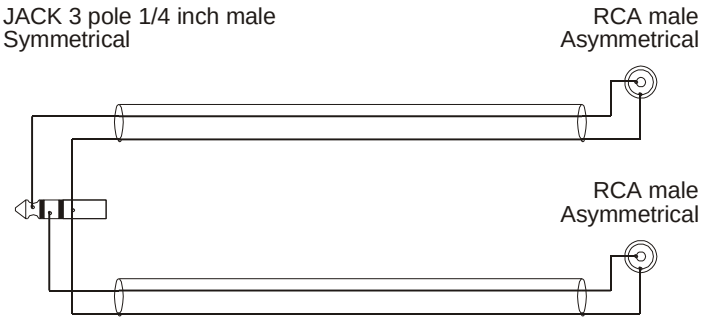
Used for connections between: professional recorder, sampler, effects-machine, amplifier, etc and mixing panel.
For stereo connections, you need 2 of these cables.

7) JACK 3 pole 1/4 inch male to 2 times JACK 2 pole 1/4 inch male (Y-split) cable:



Used for connections between: effects-machine, audio-filter, delay-loop, etc and mixing panel.
For stereo connections, you need 2 of these cables.
The upper 2 pole JACK is the signal send cable, this has to be connected to the input of the effects-machine.
The lower 2 pole JACK is the signal return cable, this has to be connected to the output of the effects-machine.

8) JACK 3 pole 1/4 inch male to 2 times RCA male (Y-split) cable:

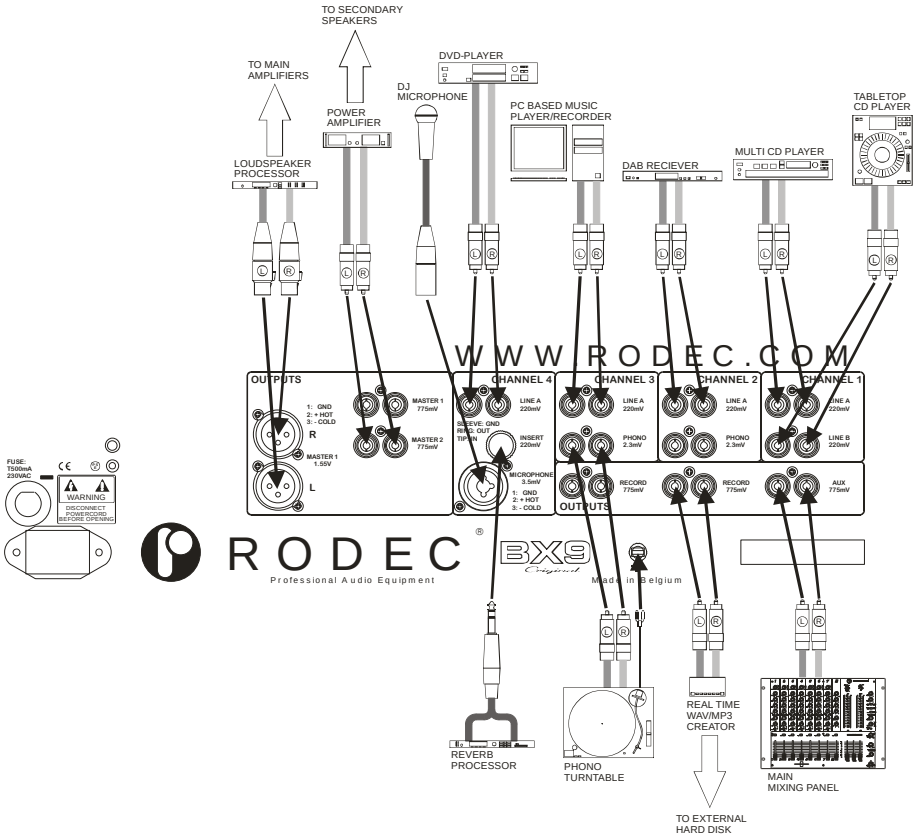


Used for connections between: effects-machine, audio-filter, delay-loop, etc and mixing panel.
For stereo connections, you need 2 of these cables
The upper RCA is the signal send cable, this has to be connected to the input of the effects-machine.
The lower RCA is the signal return cable, this has to be connected to the output of the effects-machine.

Operating instructions

For correct operation of the mixing panel please follow the instructions below.

1) Ensure all equipment is turned off **before** connecting anything to the mixing panel. Then connect the different audio sources, amplifiers, effects-units, headphones, etc. Next step is to turn on the audio sources and effects-units.
When all these units are in ready state, you can switch on the power switch (11) of the mixing panel. The power indicators (13) will light up.
After 5 seconds, you can turn on the loudspeaker processors and amplifiers.



2) Connect the headphones to the headphones JACK connector (7). Use headphones with impedance between 32 and 600Ω.

   ATTENTION! Always turn headphones volume to “0” (fully counter clockwise) **BEFORE** putting the headphones on your or somebody else her/his ears! Then slowly raise the volume by turning the volume knob in clockwise direction.

3) Choose with the input select switch (1) the right audio-source.

4) Switch the PFL button (4) in position ON to listen at the desired source. Turn the phones select button (9) completely to the left and turn the phones volume potentiometer (8) to the desired position to get the stereo signal on the headphones and the VU-meters. The PFL circuit works as a sum-system, there is a possibility to listen to more sources at the same time. All these operations have no influence on the output signal! Adjust with the level control (2) the input signal until the red indicators of the level meters (12) will light up occasionally. Adjust if necessary the quality of the sound with the equalizer (3).

   LOOK OUT: The equalizer at each input is used to manipulate the sound of each of the input sources. To correct the acoustics of the room it is recommended to use an external equalizer.

5) Open up the fader (5) of the chosen input channel

6) Slide up one or both master faders (14 and or 15) till the desired volume is reached.

7) Correct if necessary the balance with button (6).

8) If you prefer to use the Crossfader (10) to mix between two channels with one fader, you have to slide up the channel faders (5) of both channels (channel 1 or 2 and channel 3 or 4). Afterwards you can fade between both chosen channels by sliding the crossfader-knob from left to right.

9) To change the source, repeat point 3) to 5).

10) By turning the headphones select potentiometer (9) more clockwise, you will increase the amount of the main mix signal in the headphones.

~~12)~~11) The mixed signal can be recorded simply by connecting a recorder to the record-connectors (K).

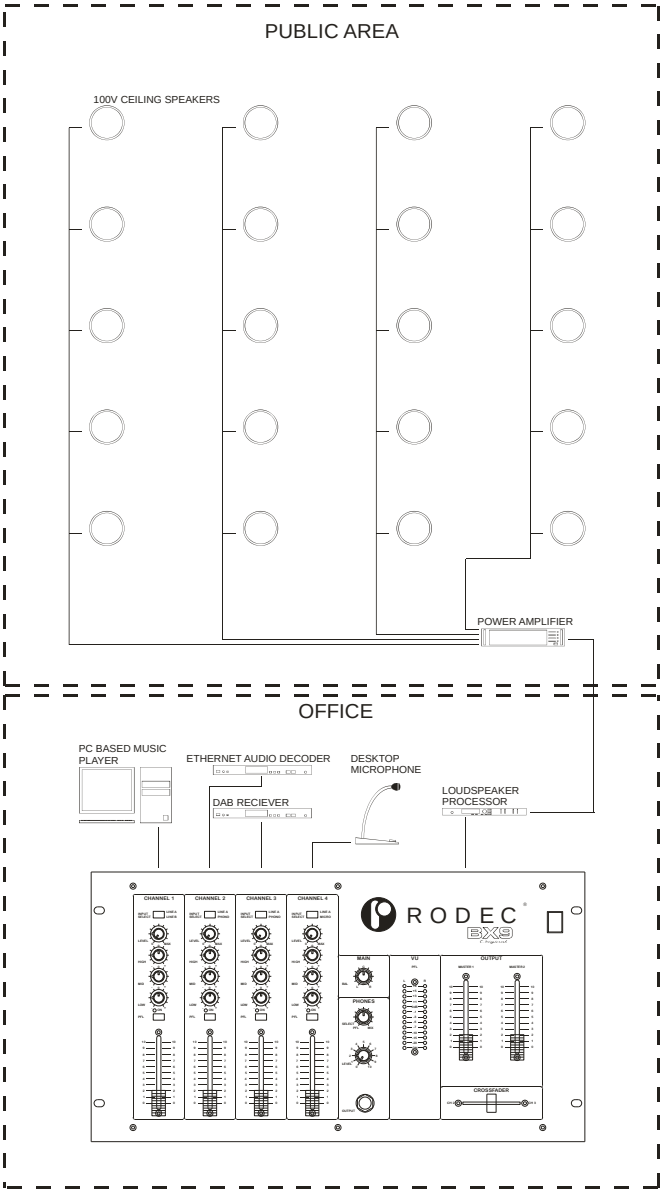
Met opmaak: opsommingstekens en nummering

SUBSONIC FILTER

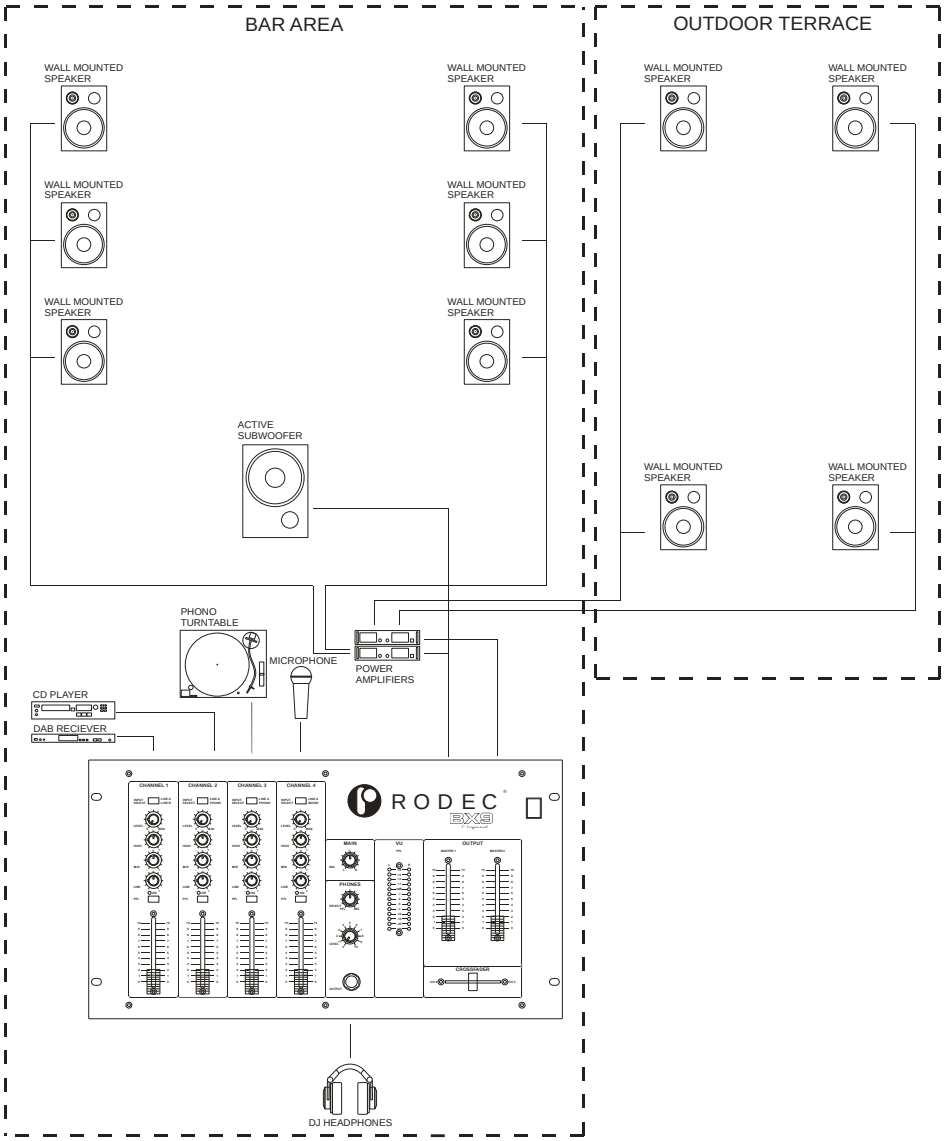
The two master outputs and the monitor output have a subsonic filter to protect the bass loudspeakers from DC and subsonic signals. This filter cannot be switched off. The filter generates a reduction of 25dB at 10Hz.

Application examples

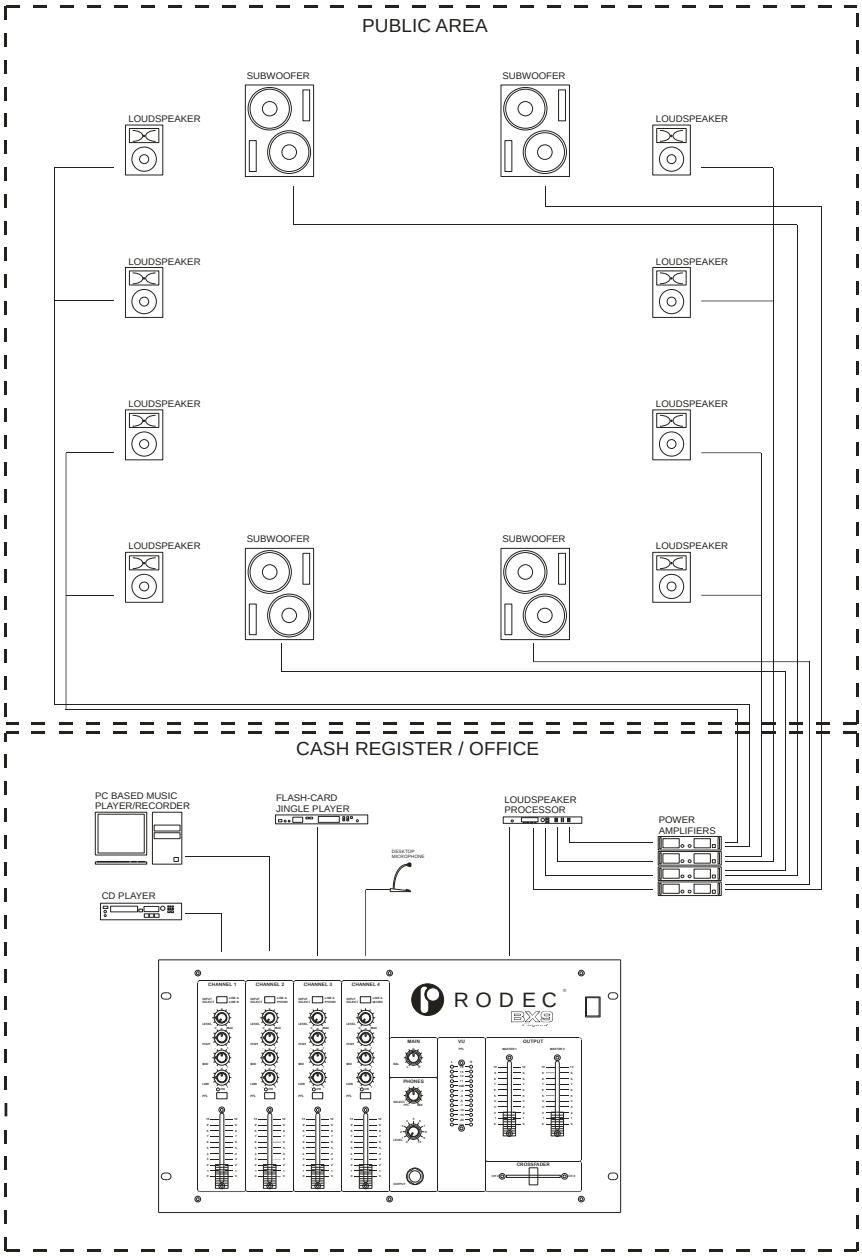
Shop



Café


BAR AREA
OUTDOOR TERRACE
WALL MOUNTED SPEAKER
WALL MOUNTED SPEAKER
WALL MOUNTED SPEAKER
WALL MOUNTED SPEAKER
WALL MOUNTED SPEAKER
WALL MOUNTED SPEAKER
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WALL MOUNTED SPEAKER
WALL MOUNTED SPEAKER
ACTIVE SUBWOOFER
PHONO TURNTABLE
MICROPHONE
POWER AMPLIFIERS
CD PLAYER
DAB RECIEVER
RODEC
DJ HEADPHONES

Mobile fair


PUBLIC AREA
SUBWOOFER
SUBWOOFER
LOUDSPEAKER
LOUDSPEAKER
LOUDSPEAKER
LOUDSPEAKER
LOUDSPEAKER
LOUDSPEAKER
LOUDSPEAKER
LOUDSPEAKER
SUBWOOFER
SUBWOOFER
CASH REGISTER / OFFICE
PC BASED MUSIC PLAYER/RECORDER
FLASH-CARD JINGLE PLAYER
LOUDSPEAKER PROCESSOR
POWER AMPLIFIERS
CD PLAYER
RODEC
BX9

Options

1) **Standard knobs set BX series**
   The knobs of a BX series mixing panel can be ordered in a set, which can be ordered at every authorized RODEC-dealer.
   Order code: 94 001 0038

2) **Fader knobs BX/CX/MX MKIII/MX00 series**
   The fader knobs of a BX series mixing panel can be ordered in a set. The fader knobs BX/CX/MX MKIII/MX00 series can be ordered at every authorized RODEC-dealer.
   Order code: 94 001 0041

Specifications

0dBm = 0.775V RMS

Nominal analogue input levels:

- Line A asymmetrical (RCA): 220mV / 50kΩ
- Line B asymmetrical (RCA): 220mV / 50kΩ
- Phono asymmetrical (RCA gold plated): 2.3mV / 50kΩ
- Microphone symmetrical (XLR or ¼" TRS JACK): 3.5mV / 3.3kΩ
- Effects return (1/4" TRS JACK): 220mV / 50kΩ

Nominal analogue output levels:

- Master 1 asymmetrical (RCA): 775mV / 10kΩ
- Master 1 symmetrical (XLR): 1.55V / 600Ω
- Master 2 asymmetrical (RCA): 775mV / 10kΩ
- Record asymmetrical (RCA): 500mV / 10kΩ
- Auxiliary asymmetrical (RCA): 775mV / 10kΩ
- Effects send asymmetrical (1/4" TRS JACK): 220mV / 10kΩ
- Headphones (1/4" TRS JACK):
    - 8Ω: (1kHz – 1%THD) 25mW (444mV)
    - 32Ω: (1kHz – 1%THD) 125mW (2.0V)
    - 600Ω: (1kHz – 1%THD) 101mW (7.77V)

Signal headroom: 19.0dB @ 1kHz / THD < 0.015%

Crosstalk:

- Left to right of an input channel: >46dB @ 1kHz
- Channel to channel: >94dB @ 1kHz

Frequency response: +/- 0.40dB from 20Hz to 20kHz
Subsonic filter: -25dB at 10Hz

Dynamic range: 109dB
Signal to noise ratio: 90dB
Total harmonic distortion: < 0.006%

Channel equalizer:
- Low: +12dB / -12dB at 100Hz
- Mid: +12dB / -12dB at 1kHz
- High: +12dB / -12dB at 10kHz

Power supply voltage: 230VAC (100V or 117V on request)
Power supply frequency: 47Hz – 63Hz
Power consumption: 18W (On), 22W (Full load), 3W (Stand by)
Operating temperature: 0°C (32°F) – 40°C (104°F)
Operating humidity: 5% - 90% (no condensation)

Mechanical specifications:

Frontpanel dimensions (W x D): 482.0mm (19.0”) x 266.0mm (10.5“) (6HE)
Bottombox dim. (W x D x H): 440.0mm (17.3“) x 253.0mm (10.0“) x 131.0mm (5.2“)
Panel cut out dimensions (W x D): 444.0mm (17.5“) x 257.0mm (10.1“)
Packed box dimensions (W x D x H): 560mm (22.0“) x 384mm (15.1“) x 254mm (10.0“)
Weight: 5.78kg (12.74lbs)
Packed weight: 7.18kg (15.83lbs)

Explanatory words list

Amplitude: The amplitude is the size or the strength of a vibration. This can be a mechanical vibration, for example a guitar string or the resulting sound wave or from any other cyclical varying appearance in time. Because any waveform always varies in size, the value of the wave will also vary. The amplitude is the value from zero to the maximum hit out or strength of the wave.

Analogue signal: (synonym: analog signal) An analogue signal is any time-continuous signal. The amplitude of the signal varies continuously in function of time. Human ears can only hear analogue signals (sounds). Digital sounds must always be converted to analogue signals to make them audible.

Asymmetrical (synonym: unbalanced): An unbalanced line is a transmission line, usually coaxial cable, whose conductors have unequal impedances with respect to ground.

Balance: Balance means the amount of signal from each channel reproduced in a stereo audio recording. Typically, a balance control will have 0dB of gain in the center position for both channels, and attenuate one channel as the control is turned, leaving the other channel at 0 dB.

CD: Abbreviation for Compact Disc. It is an optical disc used to store digital data, originally developed for storing digital audio. The CD, available on the market since late 1982, remains the standard playback medium for commercial audio recordings to the present day. An audio CD consists of one or more stereo tracks stored using 16-bit PCM coding at a sampling rate of 44.1 kHz. Standard CDs have a diameter of 120 mm and can hold approximately 80 minutes of audio.

Crossfader (synonyms: CF, X-fader or XF): A crossfader essentially functions like two faders connected side-by-side, but in opposite directions. It allows a DJ to fade one source out while fading another source in at the same time with one knob.

DAB: Digital Audio Broadcasting (DAB) is a technology for broadcasting of audio using digital radio transmission.

DAT: Digital Audio Tape is a signal recording and playback medium. The audio data is stored on a magnetic tape. It uses 48, 44.1 or 32 kHz sampling rate and 16 bits quantization.

dB: Abbreviation for decibel (1/10 of a Bel). dB is a logarithmic unit of measurement that expresses the size of a physical quantity relative to a reference level. Its logarithmic nature allows very large or very small ratios to be represented by a convenient number. The decibel is commonly used in acoustics to quantify sound levels relative to some 0dB reference. The reference level is typically set at the threshold of human perception. A reason for using the decibel is that the ear is capable of detecting a very large range of sound pressures.

DJ: Abbreviation for Disc Jockey. A DJ is a person who plays pre-recorded (not live) music, either or not in front of an audience.

Dry signal: Opposite of “Wet signal”. This is the signal as it is, without added deformation, effects, tone-manipulation, etc.

DVD: Also known as "Digital Versatile Disc" and "Digital Video Disc", is a popular optical disc storage media format used for data storage, mainly movies. Most DVDs are of the same dimensions as compact discs, but store more than 6 times the data.

Equalizer: Equalization (or equalisation, EQ) is the process of changing the frequency envelope of a sound. The audio band is subdivided in 2, 3 or more sub-bands, the volume of each of these bands can be amplified or attenuated with an equalizer.

Fader: Is a linear potentiometer. Faders are mostly used to increase or decrease in the level of an audio signal. By moving the knob, the volume increases or decreases. A fader can be either analogue whereby a movement of the knob will result in a change of the resistance, or digital where the movement of the knob generates a binary code used to change the volume.

Flash card: A memory card or flash memory card is a solid-state (no moving parts) electronic flash memory data storage device, which can be electrically erased and reprogrammed.

FX: Abbreviation for effects-unit. An effects unit is used to manipulate the sound of music or voice. Some effect units transform the sound completely, others just color the sound picture in a minor way.

Frequency: Frequency is the measurement of the number of occurrences of a repeated event per unit of time. The result is measured in hertz (Hz). A baby can hear tones with frequencies from 20Hz to 20000 Hz (20kHz), but these frequencies become more difficult to hear as people age. When a tone with a frequency of 20Hz is played by a loudspeaker, the loudspeaker will reciprocate 20 times per second.

HD: Abbreviation of hard disc. It is a non-volatile storage device, which stores digitally encoded data on rapidly rotating platters with magnetic surfaces.

Headphones: Are a pair of miniature loudspeakers that are hold close to humans ears. DJ's use types with pads that go around the ears, usually very large and comfortable.

Hz: Abbreviation of Hertz, named after the German physicist Heinrich Rudolf Hertz. The hertz is the unit of frequency. Its base unit is cycles per second. Each musical note corresponds to a particular frequency which can be measured in hertz.

I/O: Abbreviation for input / output

Insert: An insert is an access point built into the mixing console, allowing the user to add external line level devices into the signal flow.

JACK: It is cylindrical in shape, typically with three contacts (TRS), although sometimes with two (a TS connector) or four (a TRRS connector). TRS stands for Tip, Ring and Sleeve. In audio-systems, it is used to connect headphones, microphones, effects-units, electrical musical instruments, etc.

kHz: Abbreviation of kilo Hertz, is 1000 Hertz (see Hz)

LED: Abbreviation of Light Emitting Diode. Is an electronic component that emits light when an electrical current flows through it.

Loudspeaker: A loudspeaker, speaker, or speaker system is an electromechanical transducer that converts an electrical signal into sound. The term loudspeaker can refer to individual devices (or drivers), and complete systems consisting of an enclosure incorporating one or more drivers and additional electronics.

Line: Line level is a term used to denote the strength of an audio signal used to transmit analogue sound information between audio components such as CD-players, DVD-players, input signals of audio amplifiers, mixing consoles, etc. Sometimes also called AUX (auxiliary) signals.

MD: Abbreviation of Mini Disc. It is a rewriteable magneto-optical disc-based data storage device for storage of up to 80 minutes of digitalized audio.

Micro: Abbreviation of microphone. (synonym: mike or mic) Is an acoustic-to-electric transducer that converts sound into an electrical signal.

Mono: Abbreviation of monaural. Typically there is only one microphone, one loudspeaker, or, in the case of headphones or multiple loudspeakers, they are fed from a common signal path, and in the case of multiple microphones, mixed into a single signal path at some stage.

MP3: Abbreviation of MPEG-1 Audio Layer 3. This is an audio encoding format. It uses a lossy compression algorithm that is designed to greatly reduce the amount of data required to represent the audio recording, yet still sounds like a faithful reproduction of the original uncompressed audio to most listeners.

Mute: If an audio signal is muted, it is turned off or it's volume is turned to a lower level.

Pan: Abbreviation of panoramic or panning. Panning is the spread of a monaural signal in a stereo or multi-channel sound field. A typical pan control is constant power. At one extreme, the sound appears in only one channel. In the middle, the sound is decreased in that channel by 3 dB, and the other channel is brought up to the same level, so that the overall sound power level is always constant.

PFL: Abbreviation of Pre Fader Listening. (synonym: cue) This is a function in an audio mixing panel to allow the user of the mixing panel to listen to the music (mostly via headphones) before the audience hears the music.

Phono: Abbreviation of phonograph. Also called turntable, record player or pick-up. Is a device to play music from vinyl records.

Potentiometer: Is an electrical device, which has a user-adjustable resistance. Usually, this is a three-terminal resistor with a sliding contact in the center (the wiper). By moving the wiper, the resistance changes. These changes are used to to change the characteristics of the audio signal.

RCA (cinch, tulip): Is a type of electrical connector that is commonly used in the audio/video market. The name "RCA" derives from the Radio Corporation of America, which introduced the design by the early 1940s to allow phonograph players to be connected to amplifiers. Now these connectors are used for connections between amplifiers, CD-players, phono-turntables, etc. For analogue audio you need 2 of these connectors for a stereo signal. For digital audio (S/P DIF) only one connector is needed for a stereo signal. The connectors are colour coded: Left or mono -> White, Right -> Red, S/P DIF -> Orange.

Rec (recording): Sound recording is the electrical inscription of sound waves, usually used for the voice or for music. The two main classes of sound recording technology are analogue recording and digital recording**.**

RIAA: RIAA equalization is a specification for the correct playback of vinyl records, established by the Recording Industry Association of America (RIAA). The purpose of the equalization is to permit greater playback times, improve sound quality, and to limit the physical extremes that would otherwise arise from recording analogue records without such equalization. A record is cut with the low frequencies reduced and the high frequencies boosted, and on playback the opposite occurs. The result is a flat frequency response.

Sound: Sound can be perceived by the sense of hearing. By sound, we commonly mean the vibrations that travel through air and are audible to people. Humans and many animals use their ears to hear sound, but loud sounds and low-frequency sounds can be perceived as vibrations by other parts of the body via the sense of touch. Sound propagates as waves of alternating pressure, causing local regions of compression and rarefaction.

Stereo: Stereophonic sound is the reproduction of sound, using two independent audio channels. Stereophonic sound attempts to create an illusion of location for various instruments within the original recording.

Subsonic signal: This is an audio signal with frequency below 20Hz. This signal is not audible, it only creates air movement that can be felt.

SUM signal: This signal is the proportional summation (mix) of all input signals. Also called main mix signal.

Symmetrical (synonym: Balanced): A balanced line or balanced signal pair is a transmission line consisting of two conductors of the same type, and equal impedance to ground and other circuits. Balanced lines are operated with differential signals, one of which is the inverse of the other. Balanced lines reduce the amount of noise per distance, allowing a longer cable run to be practical. This is because electromagnetic interference will affect both signals the same way. Similarities between the two signals are automatically removed at the end of the transmission path when one signal is subtracted from the other.

Talk-over (synonym: voice-over, ducker): It is an effect where the level of one signal is reduced by the presence of another signal, through the use of side chain compression. A typical application is to automatically lower the level of the musical background when a talk-over starts, and to automatically bring the level up again when the talk-over stops.

THD: Abbreviation of Total Harmonic Distortion. When a signal passes through a non-linear device, additional content is added at the harmonics of the original frequencies. THD is a measurement of the extent of that distortion.

USB: Abbreviation for Universal Serial Bus. It is a serial bus standard to transport data between (mostly computer related) devices.

Volume: The amount of audio level. If the volume increases, the audio level will increase, which results in a louder sound.

VU: Abbreviation of volume units. A VU meter is often included in audio equipment to display a signal level. It is intentionally a "slow" measurement, averaging out peaks and troughs of short duration to reflect the perceived loudness of the material.

Wave: A wave is a mode of energy transfer from one place to another, often with little or no permanent displacement of the particles of the medium. Mechanical waves require a medium to transverse the distance, electromagnetic waves can travel through a vacuum.

Wet signal: Opposite of “Dry signal”. This is the signal inclusive added deformation, effects, tone-manipulation, etc.

XLR: This is a connector invented by Cannon. Originally the "Cannon X" series, subsequent versions added a Latch ("Cannon XL") and then a Rubber compound surrounding the contacts, which led to the abbreviation XLR. The most common is the 3-pin XLR3, used almost universally as a symmetrical audio connector for high quality microphones and connections between equipment.

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