

User Manual



TUBE ULTRAGAIN MIC200

Audiophile Vacuum Tube Preamplifier with
Preamp Modeling Technology

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Thank you

Thank you for the confidence you have placed in us by purchasing the MIC200.

Your MIC200 is a professional mic preamp that can be used in a variety of applications. Due to its incredible functionality and the broad range of connection options, the MIC200 can even be used as a preamp for electric and bass guitars, keyboards and percussion instruments. No matter where you use your MIC200, you always get optimal performance, be it live or on the stage, in a professional recording studio or at home!

EN Important Safety Instructions



This symbol, wherever it appears, alerts you to the presence of uninsulated dangerous voltage inside the enclosure - voltage that may be sufficient to constitute a risk of shock.



This symbol, wherever it appears, alerts you to important operating and maintenance instructions in the accompanying literature. Please read the manual.

Caution

- ◇ To reduce the risk of electric shock, do not remove the top cover (or the rear section). No user serviceable parts inside. Refer servicing to qualified personnel.

Caution

- ◇ To reduce the risk of fire or electric shock, do not expose this appliance to rain and moisture.

The apparatus shall not be exposed to dripping or splashing liquids and no objects filled with liquids, such as vases, shall be placed on the apparatus.

Caution

- ◇ These service instructions are for use by qualified service personnel only. To reduce the risk of electric shock do not perform any servicing other than that contained in the operation instructions. Repairs have to be performed by qualified service personnel.

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 dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.

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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 are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.

10. Place the power cord so that it is protected from being walked on and sharp edges. Be sure that the power cord is protected particularly at plugs, convenience receptacles and the point where it exits from the apparatus.

11. The apparatus shall be connected to a MAINS socket outlet with a protective earthing connection.

12. Where the MAINS plug or an appliance coupler is used as the disconnect device, the disconnect device shall remain readily operable.

13. Only use attachments/accessories specified by the manufacturer.



14. Use only with the 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.

15. Unplug this apparatus during lightning storms or when unused for long periods of time.

16. 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.



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British Virgin Islands

LIMITED WARRANTY

§ 1 Warranty

- 1 This limited warranty is valid only if you purchased the product from a MUSIC Group Authorized Reseller in the country of purchase. A list of authorized resellers can be found on BEHRINGER's website behringer.com under "Where to Buy", or you can contact the MUSIC Group office closest to you.
- 2 MUSIC Group* warrants the mechanical and electronic components of this product to be free of defects in material and workmanship if used under normal operating conditions for a period of one (1) year from the original date of purchase (see the Limited Warranty terms in § 4 below), unless a longer minimum warranty period is mandated by applicable local laws. If the product shows any defects within the specified warranty period and that defect is not excluded under § 4, MUSIC Group shall, at its discretion, either replace or repair the product using suitable new or reconditioned product or parts. In case MUSIC Group decides to replace the entire product, this limited warranty shall apply to the replacement product for the remaining initial warranty period, i.e.,

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one (1) year (or otherwise applicable minimum warranty period) from the date of purchase of the original product.

③ Upon validation of the warranty claim, the repaired or replacement product will be returned to the user freight prepaid by MUSIC Group.

④ Warranty claims other than those indicated above are expressly excluded.

PLEASE RETAIN YOUR SALES RECEIPT. IT IS YOUR PROOF OF PURCHASE COVERING YOUR LIMITED WARRANTY. THIS LIMITED WARRANTY IS VOID WITHOUT SUCH PROOF OF PURCHASE.

§ 2 Online registration

Please do remember to register your new BEHRINGER equipment right after your purchase at behringer.com under “Support” and kindly read the terms and conditions of our limited warranty carefully. Registering your purchase and equipment with us helps us process your repair claims quicker and more efficiently. Thank you for your cooperation!

§ 3 Return materials authorization

① To obtain warranty service, please contact the retailer from whom the equipment was purchased. Should your

MUSIC Group Authorized Reseller not be located in your vicinity, you may contact the MUSIC Group Authorized Fulfiller for your country listed under “Support” at behringer.com. If your country is not listed, please check if your problem can be dealt with by our “Online Support” which may also be found under “Support” at behringer.com. Alternatively, please submit an online warranty claim at behringer.com BEFORE returning the product. All inquiries must be accompanied by a description of the problem and the serial number of the product. After verifying the product’s warranty eligibility with the original sales receipt, MUSIC Group will then issue a Return Materials Authorization (“RMA”) number.

② Subsequently, the product must be returned in its original shipping carton, together with the return authorization number to the address indicated by MUSIC Group.

③ Shipments without freight prepaid will not be accepted.

§ 4 Warranty Exclusions

① This limited warranty does not cover consumable parts including, but not limited to, fuses and batteries. Where applicable, MUSIC Group warrants

the valves or meters contained in the product to be free from defects in material and workmanship for a period of ninety (90) days from date of purchase.

② This limited warranty does not cover the product if it has been electronically or mechanically modified in any way. If the product needs to be modified or adapted in order to comply with applicable technical or safety standards on a national or local level, in any country which is not the country for which the product was originally developed and manufactured, this modification/adaptation shall not be considered a defect in materials or workmanship. This limited warranty does not cover any such modification/adaptation, regardless of whether it was carried out properly or not. Under the terms of this limited warranty, MUSIC Group shall not be held responsible for any cost resulting from such a modification/adaptation.

③ This limited warranty covers only the product hardware. It does not cover technical assistance for hardware or software usage and it does not cover any software products whether or not contained in the product. Any such software is provided "AS IS" unless expressly provided for in any enclosed software limited warranty.

④ This limited warranty is invalid if the factory-applied serial number has been altered or removed from the product.

⑤ Free inspections and maintenance/repair work are expressly excluded from this limited warranty, in particular, if caused by improper handling of the product by the user. This also applies to defects caused by normal wear and tear, in particular, of faders, crossfaders, potentiometers, keys/buttons, guitar strings, illuminants and similar parts.

⑥ Damage/defects caused by the following conditions are not covered by this limited warranty:

- improper handling, neglect or failure to operate the unit in compliance with the instructions given in BEHRINGER user or service manuals;
- connection or operation of the unit in any way that does not comply with the technical or safety regulations applicable in the country where the product is used;
- damage/defects caused by acts of God/Nature (accident, fire, flood, etc) or any other condition that is beyond the control of MUSIC Group.

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- 7 Any repair or opening of the unit carried out by unauthorized personnel (user included) will void the limited warranty.
- 8 If an inspection of the product by MUSIC Group shows that the defect in question is not covered by the limited warranty, the inspection costs are payable by the customer.
- 9 Products which do not meet the terms of this limited warranty will be repaired exclusively at the buyer's expense. MUSIC Group or its authorized service center will inform the buyer of any such circumstance. If the buyer fails to submit a written repair order within 6 weeks after notification, MUSIC Group will return the unit C.O.D. with a separate invoice for freight and packing. Such costs will also be invoiced separately when the buyer has sent in a written repair order.
- 10 MUSIC Group Authorized Resellers do not sell new products directly in online auctions. Purchases made through an online auction are on a "buyer beware" basis. Online auction confirmations or sales receipts are not accepted for warranty verification and MUSIC Group will not repair or replace any product purchased through an online auction.

§ 5 Warranty transferability

This limited warranty is extended exclusively to the original buyer (customer of authorized reseller) and is not transferable to anyone who may subsequently purchase this product. No other person (reseller, etc.) shall be entitled to give any warranty promise on behalf of MUSIC Group.

§ 6 Claim for damage

Subject only to the operation of mandatory applicable local laws, MUSIC Group shall have no liability to the buyer under this warranty for any consequential or indirect loss or damage of any kind. In no event shall the liability of MUSIC Group under this limited warranty exceed the invoiced value of the product.

§ 7 Limitation of liability

This limited warranty is the complete and exclusive warranty between you and MUSIC Group. It supersedes all other written or oral communications related to this product. MUSIC Group provides no other warranties for this product.

§ 8 Other warranty rights and national law

- ① This limited warranty does not exclude or limit the buyer's statutory rights as a consumer in any way.
- ② The limited warranty regulations mentioned herein are applicable unless they constitute an infringement of applicable mandatory local laws.
- ③ This warranty does not detract from the seller's obligations in regard to any lack of conformity of the product and any hidden defect.

§ 9 Amendment

Warranty service conditions are subject to change without notice. For the latest warranty terms and conditions and additional information regarding MUSIC Group's limited warranty, please see complete details online at behringer.com.

* MUSIC Group Macao Commercial Offshore Limited of Rue de Pequim No. 202-A, Macau Finance Centre 9/J, Macau, including all MUSIC Group companies

1. Introduction

With the MIC200, you have purchased an extremely musical mic preamp that is equipped with a 12AX7 vacuum tube. Thanks to BEHRINGER's preamp modeling, its main advantages are the number of preamp settings you can select. Additionally, features like an integrated limiter, phase reverse function, phantom power supply, highly accurate LED meter, switchable pad function and low cut filter make the MIC200 a very powerful piece of equipment.

1.1 The design concept

The heart of the TUBE ULTRAGAIN is an extremely low-noise microphone preamp circuitry that uses discrete components and produces a highly transparent sound. In combination with our BEHRINGER tube technology, the operational amplifiers 4580 and a sophisticated circuit topology, the TUBE ULTRAGAIN yields excellent noise and distortion properties. The innovative UTC circuitry that has been developed by our engineering team offers an abundance of sound-shaping possibilities. Absolute musicality was our major goal when we designed the TUBE ULTRAGAIN. The result is a device that, thanks to our tube circuitry, lends an incredible punch to percussion instruments. On the other hand, instruments that are rich in upper harmonics will receive more transparency. The sound will be warm, detailed and brilliant.

Surely you know the recording problem that single instruments or vocals sometimes don't cut through. Thanks to the TUBE ULTRAGAIN, vocals gain in presence and volume without masking other instruments. As a result, your voice will be perfectly integrated in the mix.

1.2 Online registration

Please register your new BEHRINGER equipment right after your purchase by visiting <http://behringer.com> and read the terms and conditions of our warranty carefully.

Should your BEHRINGER product malfunction, it is our intention to have it repaired as quickly as possible. To arrange for warranty service, please contact the BEHRINGER retailer from whom the equipment was purchased. Should your BEHRINGER dealer not be located in your vicinity, you may directly contact one of our subsidiaries. Corresponding contact information is included in the original equipment packaging (Global Contact Information/European Contact Information). Should your country not be listed, please contact the distributor nearest you. A list of distributors can be found in the support area of our website (<http://behringer.com>).

Registering your purchase and equipment with us helps us process your repair claims more quickly and efficiently.

Thank you for your cooperation!

EN 2. Control Elements

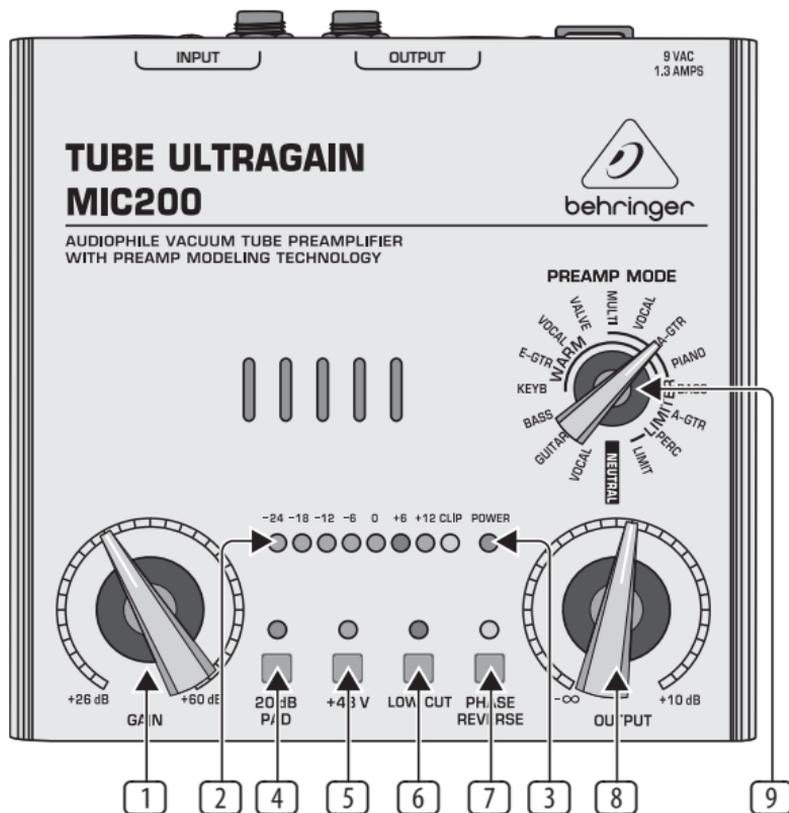


Fig. 2.1: User interface of the MIC200

2.1 User interface

- 1 The **GAIN** control allows you to control the gain from +26 to +60 dB to the input signal. This control should be set all the way to the left when (dis)connecting a sound source from the MIC200. When all connections are made, slowly start raising the gain control.
- 2 We recommend using the **LED** meter to adjust gain. The LED chain displays the output signal level in dB. Please make sure that the clip LED never lights up permanently. It should light up only at peak signals, but it should never be on all the time.
- 3 If your MIC200 is connected to the mains via the enclosed power supply unit, the **POWER** LED lights up to indicate that your MIC200 is running.
- 4 The **20 dB PAD** switch reduces the input sensitivity by 20 dB (switch pressed). The appropriate setting depends on the equipment connected. Generally speaking, lowering the signal level in mic applications is not recommended. No matter what your application is, the clip LED warns you to reduce the gain setting to avoid distortion.
- 5 This **+48 V** switch activates the phantom power supply for the XLR input. Phantom power supply is required for operating condenser microphones. Dynamic microphones require no phantom power.
- 6 Press the **LOW CUT** switch to eliminate undesired subsonic noise, such as floor rumble.
- 7 With the **PHASE REVERSE** switch, the input signal is reversed by 180°. This function is available for both mic and line signals. Use this function in a multi-microphone setup if you detect phase cancellations in specific frequency bands.

- 8 The **OUTPUT** control governs the output level within a range from $-\infty$ to +10 dB. If the control is turned all the way to the left, there is no output signal at all. The more the control is turned to the right, the higher the output level.
- 9 The **PREAMP MODE** rotary switch gives you a wide selection of preamp presets. The options available are: WARM, WARM/LIMITER, LIMITER and NEUTRAL:

WARM (moving clockwise, starting at 9 o'clock):

These settings make sense if you wish to add that typical warmth associated with analog signals.

- KEYB: For electronic keyboard instruments of all types
- E-GTR: Electric guitar
- VOCAL: Speech and vocals
- VALVE: Warm, analog tube sound

WARM + LIMITER (moving clockwise, starting at 12 o'clock):

Use these settings when working with high volumes or with sounds with frequent signal peaks, and if directly recording an instrument with a mic (e. g. drums) to insert additional warmth.

- MULTI: Various applications
- VOCAL: Speech and vocals
- A-GTR: Acoustic guitar
- PIANO: Piano/grand piano

LIMITER (moving clockwise, starting at 3 o'clock):

Select these settings if you wish to use the limiter function without adding tube warmth.

- BASS: Bass guitar
- A-GTR: Acoustic guitar
- PERC: Percussion and drums
- LIMIT: Neutral limiter setting

NEUTRAL (moving clockwise, starting at 6 o'clock):

These settings are ideal for neutral and natural sound reproduction without limiter and without tube sound.

- NEUTRAL: Neutral sound setting
 - VOCAL: Optimized setting for speech and vocals
 - GUITAR: Optimized setting for guitars and guitar amps
 - BASS: Optimized setting for electric bass guitar
- ◇ **Since presets cannot cover all possible applications, experiment with different settings until you find those that work best for you. Think of presets as the starting points for your sound configuration.**

EN 2.2 Rear panel

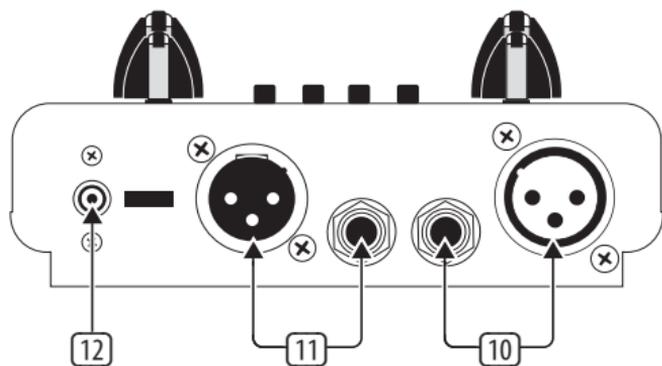


Fig. 2.2: The rear panel of your MIC200

- ⑩ The balanced 1/4" **TRS INPUT** of your MIC200 can be used to connect your electric guitar, for example. This input is wired parallelly to the XLR input.

Ideally, the balanced **XLR INPUT** should be used to connect a microphone.

- ◆ **In contrast to its outputs, the MIC200's inputs should never be used simultaneously!**

- ⑪ This is the balanced **XLR OUTPUT** of your MIC200. Use this connector to feed the XLR input of your mixing console, multitrack recorder or power amp.

The balanced 1/4" **TRS OUTPUT** of your MIC200 can also be connected to a mixer, recording system or power amp.

- ⑫ Use the **POWER SUPPLY CONNECTOR** to hook up the enclosed power supply unit. Next to this connector you'll find the strain relief clamp, which prevents accidental release of the power supply.

The device's **SERIAL NUMBER** is found on the bottom side of the unit.

3. Wiring Examples

You'll be surprised how flexibly you can set up your MIC200. The following chapter describes some typical wiring examples.

3.1 Enhancing vocals and instruments in live applications

Here, the MIC200 is wired before the mixer's channel input. Thus, the sound gains in warmth and transparency. Thanks to the limiter setting for vocals (VOCAL), distortion is eliminated effectively.

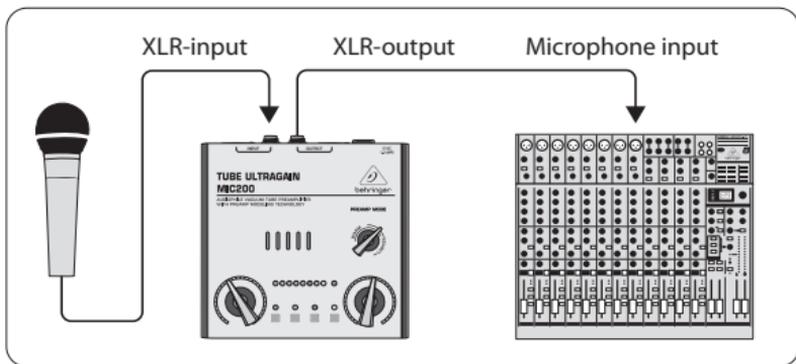


Fig. 3.1: Standard live application

EN 3.2 “Direct to Disk” application in studio or homerecording environments

If you are looking for a device that considerably enhances the sound of your digital workstation, this is where the MIC200 comes in. Many hard disk recorders lack a certain “liveliness”. In addition, they are often equipped with “lousy” microphone preamps. Such problems can be solved perfectly with the MIC200.

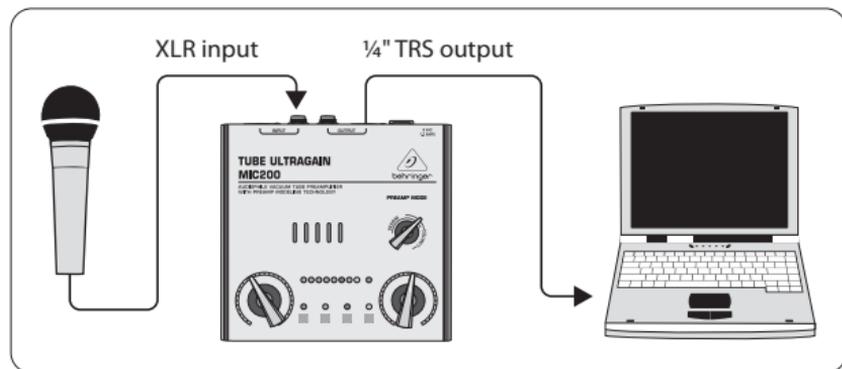


Fig. 3.2: Connection of the MIC200 and the soundcard of your PC

3.3 The MIC200 as DI-box

Your MIC200 is excellently suited for this application. For example, you can connect an unbalanced acoustic guitar signal to the MIC200 to prevent hum or interference noise. What you get is a balanced, noise-free signal.

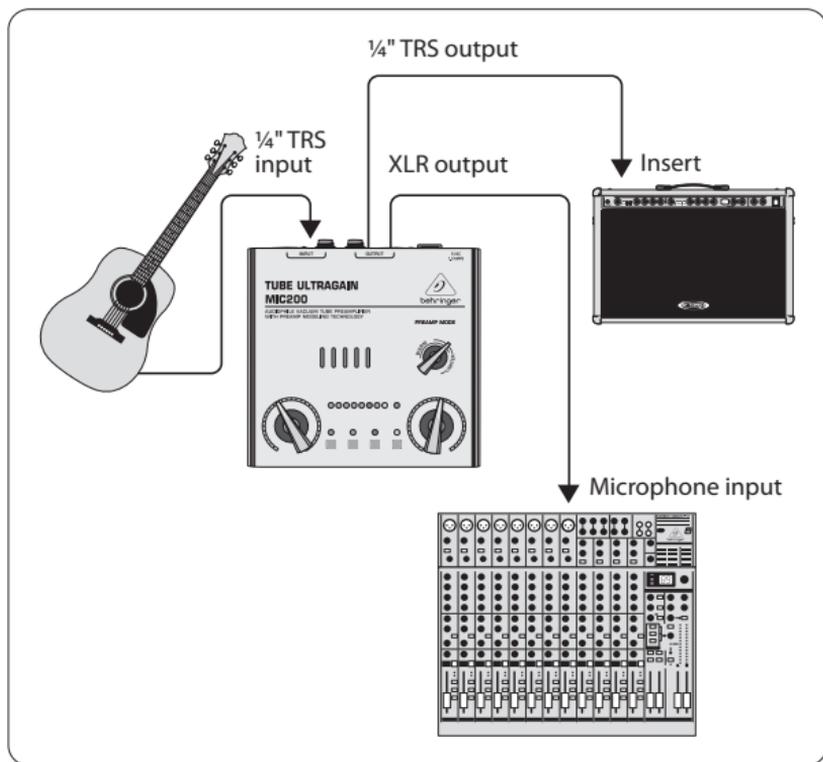


Fig. 3.3: The MIC200 as DI-box

EN 4. Audio Connectors

Balanced use with XLR connectors



input

- 1 = ground/shield
- 2 = hot (+ve)
- 3 = cold (-ve)



output

- For unbalanced use,
pin 1 and pin 3
have to be bridged

Fig. 4.1: XLR connectors

Unbalanced ¼" TS connector

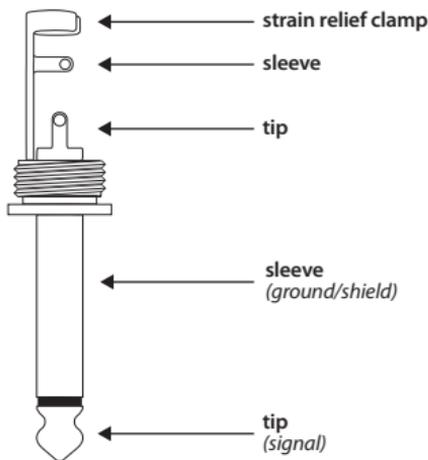
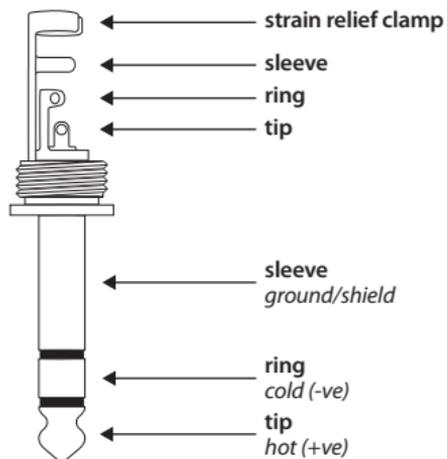


Fig. 4.2: ¼" TS connector

Balanced ¼" TRS connector

For connection of balanced and unbalanced plugs, ring and sleeve have to be bridged at the stereo plug.

Fig. 4.3: ¼" TRS connector

EN 5. Specifications**Audio Inputs****XLR Input**

Connector	balanced / unbalanced
Type	transformerless, DC-decoupled input
Impedance	approx. 2 k Ω
Max. input level	+7 dBu / -20 dB with pad

¼" TRS Input

Connector	balanced / unbalanced
Type	transformerless, DC-decoupled input
Impedance	approx. 1 M Ω
Max. input level	+16 dBu / -20 dB with pad

E.I.N.¹ (20 Hz - 20 kHz)

@ 0 Ω source resistance	-125.5 dBu / -128.5 dBu A-weighted
@ 150 Ω source resistance	-124 dBu / -126.8 dBu A-weighted
@ 600 Ω source resistance	-120 dBu / -122.7 dBu A-weighted

Audio Outputs

Connectors	XLR connector + ¼" TRS jack balanced / unbalanced
Type	transformerless, DC-decoupled output
Impedance	approx. 700 Ω balanced, approx. 350 Ω unbalanced
Max. output level	approx. +26 dBu @ 100 k Ω

System Data

Signal-to-noise ratio	90 dB A-weighted @ -28 dBu input level
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Frequency Response

Mic input	<10 Hz to 47 kHz (± 3 dB)
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Line input	<10 Hz to 55 kHz (± 3 dB)
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Function Controls

GAIN	variable (+26 dB to +60 dB)
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OUTPUT	variable ($-\infty$ to +10 dB)
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Preamp mode control	selection of various preamp settings for microphone and instruments
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Function Switches

20 dB PAD	level attenuation (20 dB)
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+48 V	activates the phantom power
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LOW CUT	High pass filter (cut-off frequency 90 Hz)
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PHASE REVERSE	Phase reverse (180°)
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Indicators

Input Level	8-segment LED meter: -24, -18, -12, -6, 0, +6, +12, Clip
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Power LED	indicates operation
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Power Supply

Mains Voltage

USA/Canada	120 V~, 60 Hz
Europe/U.K./Australia	230 V~, 50 Hz
China	220 V~, 50 Hz
Korea	220 V~, 60 Hz
Japan	100 V~, 50 / 60 Hz
Mains connector	external power supply 9 V~ / 1300 mA

Physical / Weight

Dimensions (H x W x D)	approx. 2.5 x 5.3 x 5.3" / 64 x 135 x 135 mm
Weight (without power supply)	approx. 1.0 kg

¹Equivalent Input Noise

BEHRINGER is constantly striving to maintain the highest professional standards. As a result of these efforts, modifications may be made from time to time to existing products without prior notice. Specifications and appearance may differ from those listed or illustrated.



We Hear You