

Pre Amplifier AMP essential pre

Operating Instructions



AMP

Advanced **M**usical **P**roducts .
AMP by AVM GmbH, Daimlerstrasse 8, D-76316 Malsch, Germany

Dear Customer,

Thank you for the trust you have shown in us with the purchase of this mono power amplifier. You have acquired a versatile hi-fi component with absolutely excellent sound qualities.

It is understandable that you would immediately like to start listening to the music. Despite this we advise you to display some patience, you will see that this will stand you in good stead. Before you take this equipment into use for the first time you should thoroughly read this operating manual. This will ensure that the equipment can be optimally used to give you a great deal of untroubled pleasure.

We have made every effort to include in this manual all the necessary information to provide assistance with the operation of the equipment. Please contact us in writing or by telephone if you have further questions, the answers to which are not to be found in this manual. We will make every effort to provide assistance.



Günther Mania

Declaration of Conformity

We confirm that the equipment described in these operating instructions conforms to the applicable EU regulations permitting it to bear the sign CE. The necessary tests in accordance with 89/336/EWG (EMV Regulations) and 73/23/EWG (Low-Voltage-Regulation) provided positive results.

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Technical specialties of the essential pre - in short

- Multiple configuration possibilities, easy update availability and effortless servicing through modular technology as used in the studios.
- Dual-mono construction for optimal channel separation and plastic sound impression.
- Low output impedances that bridge even very long cable runs without losses.
- Three 25VA toroidal transformers, filtering with a total capacitance exceeding 100,000 μ F and rectification by extremely fast diodes which result in a disturbance-free, fast reacting and extremely stable power supply with abundant performance reserves.
- Brilliant display ensures operator comfort.
- Only top quality components and materials are used in the interest of long life and good tone which is independent of equipment aging.
- The casing of almost non-magnetic aluminum prevents formation of disturbing eddy currents.

Construction and principle methods of use

The casing of the pre amp is of solid 8mm aluminum. This material is non magnetic and protects superbly against electrical disturbance fields. Its large mass leads to excellent immunity to vibrations.

Inputs / Outputs

The essential pre is a modularly constructed pre amplifier. All of the in- and outputs, as well as the volume control unit, are pluggable. In this manner the pre amplifier can be individually built to your own requirement.

For high level signal sources balanced input (XLR-) and unbalanced input (RCA Cinch) connections have been provided. Inputs for phono MM, phono MC recorder in- and outputs and a digital input with upsampling to 24 Bit / 96 kHz (available later) round off the connection possibilities of the input side.

In all there are 8 input plug-in slots available. These can be equipped completely with inputs. A processor connection (for equalizer or loud speaker compensator) can be fitted to plug-in slot 8 and monitorable recorder in- and outputs can be installed on the slots 7 and 6.

In a similar manner output cards are also available. Outputs with RCA Cinch and XLR- connections are obtainable. In addition there is a headphone output with 6.3mm phone jack (available later). Three individual switchable cards can be installed on the output side.

Power supply and grounding concept

The essential pre possesses three independent supply units. The signal processing circuits for the right and left channels use two independent power supplies and operate with separate grounding. This ensures optimal channel separation to provide excellent stereo reproduction.

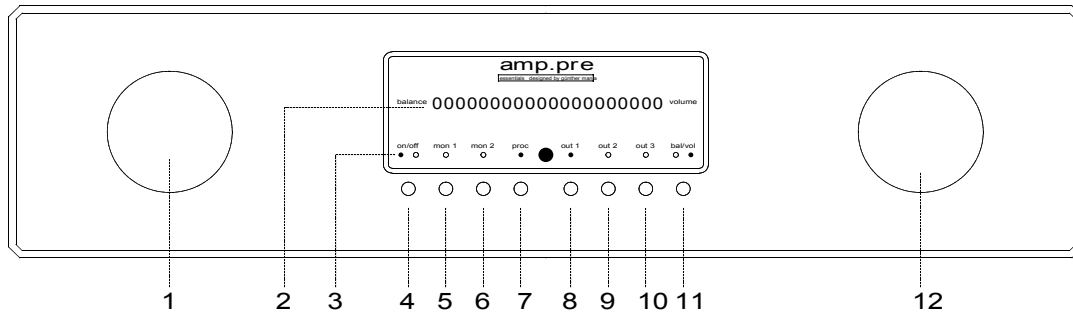
The digital circuitry is also supplied from a separate power supply unit and likewise has its own grounding. The digital signals are passed to the plug-in cards through an opto-electronic-coupler so that disturbing influences from the processor to the musical signal are prevented.

Toroidal transformers with a possible combined 75 VA continuous performance are installed. The total filter capacitance exceeds 100,000 μ F. At critical points additional fast foil capacitors have been installed to optimize high frequency stability.

Operation of the essential pre

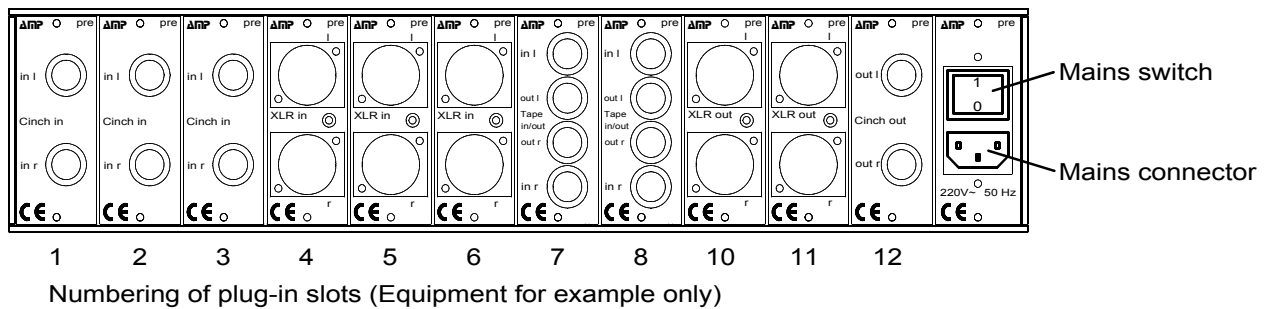
A first request: Please follow the instructions stated in this manual in their given sequence before you initially take this equipment into use. In this manner you will get to know all the capabilities of your amplifier and reduce faults through self-made operating mistakes. In the text you will find a number behind the names of the individual controls. These refer to the numbering of the following drawings:

Front panel



- 1: Source selector switch
- 2: 20 character display
- 3: Display LEDs
- 4: Button "On/Off"
- 5,6: Buttons "mon1", "mon2" (tape monitor on/off)
- 7: Button "proc" (processor on/off)
- 8,9,10: Buttons "out1", "out2", "out3" (outputs on/off)
- 11: Button "bal/vol" (switching between balance and volume adjustment)
- 12: Volume/balance adjuster

Rear panel



Connection of the symmetrical XLR- socket (pin numbers are printed on the socket)

- 1= Ground shield
- 2= Signal – plus
- 3= Signal – minus

Placement of the unit / Cooling

The essential pre can warm up slightly, dependent upon which components are fitted. It is therefore important that the passage of cool air from below and the emission of warmed air from the top of the equipment is in no way hindered. Always locate your pre amplifier so that at least a 10cm distance exists to other neighboring equipments or walls. If placed on carpets please ensure that the feet do not sink into the pile. If needed place spacers under the feet of the apparatus and ensure that the air vents are free. Beside this we recommend that you select a location where the unit is protected from direct sun light.

Note

The incorporated transformers emit magnetic stray fields. For this reason never place the essential pre directly adjacent to a record player in order to prevent disturbances.

Connection of the signal sources

Do not switch the pre amplifier on until all cable connections to the rest of the equipment have been made.

Connect the outputs of your hi-fi signal sources with the correct cable to the input sockets of the pre amplifier. The left channel is connected to the upper row of sockets and the right channel to the lower.

Note

Correct polarity of the XLR- connections is to be assured. The lay out of the XLR- sockets has been shown in an earlier section.

If your pre amplifier has been equipped with a phono input it is recommended that you connect the ground cable of the record player to the grounding clip of the phono input to prevent humming disturbances.

Connection of Recorders

Dependent on the configuration of your equipment up to eight recorders can be connected to the essential pre (cassette recorder, DAT, MD, CD-recorder, hi-fi video recorder or tape recorder). The outputs of the recorders are to be connected to the input sockets "in l" or "in r" of the pre amplifier, the inputs of the recorders are to be connected to "out l" or "out r".

Note

Only the plug-in slots 6 and 7 are monitorable. When installing a tape recorder card these points should be used first.

Connection of tonal processors/equalizers

To achieve this your pre amp must be equipped with a processor card which is installed in plug-in slot 8. The outputs of the processor are to be connected with the input sockets "in l" and "in r" of the pre amplifier. The inputs of the processor are connected to the sockets "out l" and "out r".

Connection of the power amplifier

The provision of both balanced or unbalanced outputs allows you freedom of choice in the appropriate cable connection to your power amp. The outputs (maximum 3) are separately switchable. We recommend that you use the balanced (XLR-) connection to the power amp. RCA Cinch cables, however also provide excellent tonal connections if you have used good quality cable. Your dealer will be pleased to provide advice.

Power Supply / Initial use

The power switch and power supply socket are to be found on the rear of the equipment housing. Set the power switch to "0", or (toggled downwards), connect the preamp with a power cable to the power supply and subsequently switch the power switch to "I" (toggled upwards).

After being switched on all sub-assemblies are tested by the micro processor for correct installation and functioning. Only then is the analogue supply voltage switched on and the pre amp ready for operation. You can follow the diagnostic procedure in the display. This procedure runs in a similar manner to the boot procedure of a PC. It is necessary because of the modular construction of the pre amp. The structure permits the possibility of incorrect installation of one or more modules. This would have the effect of causing defects to your apparatus or equipment if power was to be immediately provided to the modular parts.

When you wish to switch the pre amp off at a later time press the button "on/off" (4). The supplies to the analogue parts and the display are switched off and the equipment goes into the economic standby mode. The red LED above the "on/off" button is illuminated. To switch on again re-press the button. The equipment switches itself on after a short warming-up phase and the blue LED above the "on/off" button is illuminated.

Note

Switching the equipment on and off too quickly, short power failure or power surges can disturb the processor. In such instances switch off the pre amp with the power supply switch for 10 seconds and then switch on again.

Source selection

When the pre amp is switched on you can activate the desired input by rotation of the source selection switch (1). This is shown in the middle of the display. Should you select a plug-in slot which has not been equipped with a card the message "unused" will be displayed.

Volume and Balance adjustment

The right knob (12) allows adjustment of the volume and balance. The desired function is activated by pressing the button "vol/bal" (11) below the display to the right. A red LED illuminates when "balance" is selected and a blue LED when "volume" is selected.

When "volume" is activated you can adjust the music reproduction by rotating the knob (12) clockwise (louder) or anti-clockwise (softer). If the knob is rotated slowly the adjustment is more sensitive and takes place in 0.5 dB steps, fast rotation leads to adjustment in 2.5 dB steps. The adjustment is shown in the right part of the display (2). It is possible to make adjustments from 0.5 to 100. Below 0.5 the word "mute" is displayed.

When "balance" is activated the asymmetry of the room is compensated by adjustment of the balance between the right and left channels. This is undertaken in 0.5 dB steps. The adjustment is shown in the left part of the display (2). Settings between < 9.5 (left sided) and 9.5 > (right sided) are possible. If set to the mid-position "mid" is shown in the display.

Output selection

The essential pre can be equipped with three separately switched outputs. This allows you to provide individual sound to three different rooms or, in connection with 2 power amps, to realize bi-amping operation. With the buttons "out1", "out2" and "out3" (8,9,10), below the display to the right, the outputs which have been installed can be selectively switched on and off. An activated output is displayed by an illuminated blue LED above the button. If an output is selected for which a card has not been plugged into the equipment, the message "not installed" appears for a short while in the display.

Further functions

With the three buttons beneath the display to the left (5,6,7) the tape recorder in- and outputs (if installed) can be switched to monitor operation. Furthermore a tonal processor (if connected) can be switched on and off. Activation of the relevant function is shown by an illuminated blue LED above the buttons. If the required card has not been installed a suitable message appears for a short time in the display when the relevant button is pressed.

Special functions

Your pre amp has been equipped with some useful extras that will allow you easier operation of your equipment. In the interest of providing a clear operation of the basic functions we have dispensed with the need for superfluous buttons. The special functions are however only available when the pre amp has previously been switched to "stand by mode" via the button "on/off" (4).

Switching the tape recorder outputs on and off

This feature is useful when your pre amp is connected to one or more recording equipments. The grounds of the right and left channels of these would galvanically connect, even when not in use. Because the pre amp has been constructed dual- mono, for tonal reasons, the tape recorder output should be switched off when not in use to provide optimal musical enjoyment.

To switch on the tape recorder output: switch the pre amp off with the button "on/off" (4). Hold the button "mon 1" (5) depressed while switching the equipment on by toggling the button "on/off" (4). Before it is switched on the display shows "REC OUT = ON". The fact that the tape recorder outputs are switched on during operation is shown by the character "_" (underline) on the sixth position of the display (2).

To switch off the tape recorder output: before switching on hold the button "mon 2" depressed. The display shows "REC OUT = OFF". The underline on the sixth position of the display (2) disappears.

Individual naming of the inputs

You can give each of the eight inputs a suitable name of up to 8 characters length. To achieve this hold the button "proc" (7) depressed while switching on the equipment. In the left side of the display (2) the number of the selected input is shown and to the right its actual name. Each letter can be altered by rotation of the volume control (12). Simultaneously you should select one of the 8 buttons (4 to 11) relating to one of the eight characters that you wish to change. All letters of the alphabet (upper and lower case), the numbers 0 to 9 and a number of special symbols are available.

When you have entered the name you can amend the titling of the next input by selecting the input with the source selection switch (1) and repeating the procedure above. With a setting lower than one, or above 8, the display shows "EXIT? PRESS ON/OFF". When this is displayed you can switch the equipment to normal mode by pressing the button "on/off" (4).

Adjustment of input sensitivity

Generally the available signal sources in hi-fi equipment are of different loudness because a norm for the output level of home equipments does not exist. When switching from one source to another an irritating jump in loudness can be experienced. To prevent this you can individually adjust the sensitivity of each of the inputs.

To make the settings you should first operate the pre amp in normal mode, select the loudest signal source and adjust the volume to a suitable level.

Switch then the equipment off with the button "on/off" (4). Depress the button "out 1" (8) and switch on the equipment again. The message "SENS" appears in the display (2) to the left followed by the name of the selected input. To the right is displayed the sensitivity (on delivery "0. 0"). Select another source with the source selection switch (1) or the remote control and equalize the level shown to that of the previous source by rotating the volume knob (12) or pressing the volume buttons on your remote control. Frequent switching backward and forward makes the procedure more easy. In this manner adjust the level of all source equipments to the same volume. When you are finished switch the pre amp off by pressing the "on/off" button (4) and repressing. The set sensitivity values are now stored.

Adjustment of brightness of the display

The brightness of the display is available in 4 intensities. To alter the brightness depress the button "out 2" (9) while switching on the equipment. The message "BRIGHTNESS EXIT: OFF" is displayed. The required brightness can now be set with the source selection switch (1). The set value is stored when the "on/off" (4) button is pressed.

The set brightness value is shown shortly in the display each time the pre amp is switched on.

Return to factory settings

To revert all previous setting adjustments to the factory settings switch off the equipment **at the power switch** (on the rear of the housing). Press the button "bal/vol" while switching on the equipment. The message "RESET: PRESS ON/OFF" is displayed. If you now **additionally** press the button "on/off" (4) all adjusted settings to your pre amp will be reverted to the settings installed when the equipment was delivered. Operation of this feature has been made intentionally difficult to prevent accidental deletion of the settings.

Installation and removal of plug-in cards

Warning: Before the unit is opened ensure that the power plug is disconnected. Printed circuit boards are never to be installed or removed with the unit switched on. If you are inexperienced in working with electrical appliances it is recommended that you request your dealer to install the plug-in card.

The pre amp can subsequently be equipped with additional plug-in cards. You can also change the location of the plug-in cards provided or remove them entirely.

The mechanical attributes (breadth of the cover plate, position of the plug) of all plug-in cards for the essential pre are the same. Despite this, several rules must be followed to ensure the correct functioning of your pre amp: the unit is equipped with a total of 12 plug-in slots, the slots 1 to 8 and 10 to 12 are accessible from the rear of the unit. Additionally a further slot (9) has been provided internally for the volume control unit. The numbering of the slots: compares with the scetch of the rear casing given previously in this manual.

The slots 1 to 8 are assigned for inputs and tape recorder in- and outputs or a processor card. For correct insertion a number of rules must be adhered to:

- A processor connection must only be installed in slot number 8.
- If only one input card is to be inserted it must be placed in slot 8 (if an additional processor connection has already been installed, then in slot 7)
- If two input cards are to be installed these must be inserted into slots 7 and 8 (if an additional processor connection has already been installed, then in slots 6 and 7).
- If three input cards are to be inserted these must be installed in slots 6, 7 and 8 (if an additional processor connection has already been installed, the other card can be inserted into one of the remaining slots 1 to 5).
- Tape recorder connection cards can be inserted in the same way as input cards. Only the cards in slots 6 and 7 however can be used as a tape monitor.
- Any of the slots 10, 11 and 12 can be used for insertion of outputs.

The plug-in cards and cover plates are each secured to the housing with a screw above and below the socket. Before removing a card or cover plate, remove both screws entirely. The cover plate can now be removed or the plug-in card can be pulled to the rear.

Rotate the card that is to be installed in such a way that the connecting socket for the left channel is in the upper-most position. Insert the new card into the free slot. Ensure that the plug of the circuit board mates with the relevant socket inside the unit. Push the card firmly home but do not use force. At the end of the procedure the rear face of the card must be level with the other rear surfaces.

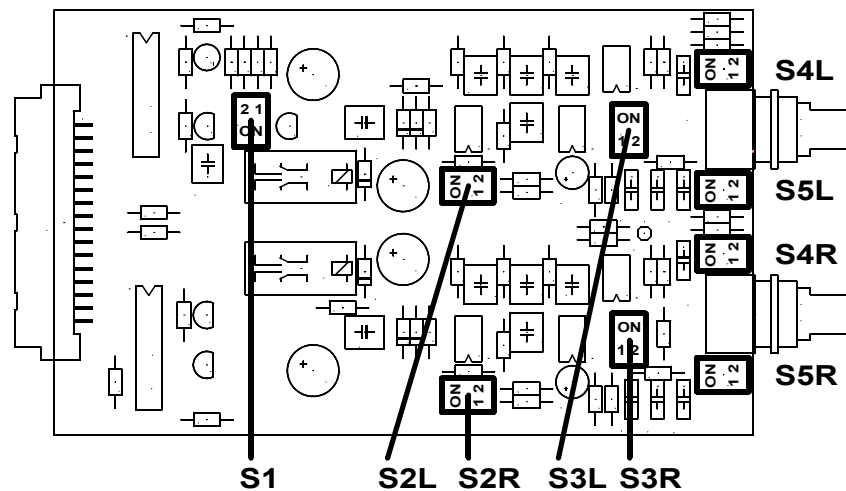
After the two securing screws have been firmly replaced you pre amp is ready for operation.

Note: An error occurring during the installation of the card does not necessarily lead to a defective unit. In fact the in-built micro controller recognizes the error during self-test (when power is switched on) and reports this via the display (2).

Phono module for preamp essential pre

1. Setting of gain and impedance

To obtain optimal sound quality You have to adjust the phono module according to the specifications of Your phono cartridge. You can choose between MC and MM pickup, and set input impedance and gain of the module. To make the correct settings please refer to manual of Your cartridge where output voltage and correct input impedance are mentioned.



Settings of the switches (use same settings for right and left channel):

		S1/1 +2	S2/1	S2/2	S3/1	S3/2	S4/1	S4/2	S5/1	S5/2
MM-cartridge		OFF			OFF	OFF	OFF	OFF		
Output voltage	< 1 mV		ON	ON						
	1 mV – 2,5 mV		OFF	ON						
	2,5 mV - 5 mV		ON	OFF						
	> 5 mV		OFF	OFF						
Input impedance	bis 200 pF								OFF	OFF
(100 pF for cable	200 - 350 pF								OFF	ON
are included)	350 - 450 pF								ON	OFF
	450 - 600 pF								ON	ON
		S1/1 +2	S2/1	S2/2	S3/1	S3/2	S4/1	S4/2	S5/1	S5/2
MC-cartridge		ON			ON	ON			OFF	OFF
Output voltage	< 100 µV		ON	ON						
	100 µV - 250 µV		OFF	ON						
	250 µV - 500 µV		ON	OFF						
	> 500 µV		OFF	OFF						
Input impedance	25 - 75 Ohm						ON	ON		
	75 - 150 Ohm						OFF	ON		
	150 - 500 Ohm						ON	OFF		
	> 500 Ohm						OFF	OFF		

Care of the casing

The surface and printed text on the casing are largely scratch resistant. The casing may be cleaned with a mild soap solution or spirit based glass cleaner (use economically) and a soft lint free cloth.

Note

Care should be taken during cleaning to ensure that no liquids can ingress into the casing. It is advised for safety reasons to remove the power cable from the electrical supply before cleaning the casing with a damp cloth. Do not use solvents or abrasives for cleaning. This could damage the surface or text.

If at first you don't succeed. . .

Some suspected defects of the equipment are in fact very often found to have arisen from faulty operation. Sometimes a malfunctioning item of ancillary equipment connected to the pre amp unit is to blame. Before you consult your dealer or contact us, we would like you to check the items on the following list to see whether you can correct the malfunction yourself.

No musical reproduction

- Insertion or removal of the input cable while the amplifier is switched on may have activated the standby mode or have disturbed the microprocessor. Switch off the amplifier at the power switch (on the rear) for 30 seconds and switch on again.
- Inadvertent switching to standby. Press the button "on/off" (4).
- You activated the monitor function. The LEDs "mon 1" or "mon 2" are illuminated. Switch off the monitor function (buttons 5 or 6).
- You have switched off the outputs. Switch on the output that is connected to your power amplifier again (buttons 8 to 10).
- If after switching on the unit the LEDs on the front face and the display do not illuminate, the power supply fuse could be defective. Because the reason for this is mainly a defect of the power transformer or the amplifier electronics (possibly through lightning strike) rectification should be through your dealer.

No playback from records:

- Check whether your amplifier has been equipped with a suitable phono card (MM or MC).

Humming during musical playback:

- The chassis of the record player is not grounded. Connect the ground cable of the record player with the grounding clip on the rear side of the phono card.
- Your record player is situated near an electrical appliance, whose magnetic field is causing interference with the sound pick up or cable
- Ground loop-in through the aerial amplifier or postal cabling. Check if the humming stops after removal of the aerial cable from the tuner (and, if connected, the television and video recorder cables). If this is successful a sheath current filter needs to be fitted to the aerial cables of these receivers. (Your dealer will supply).

Remote control does not work:

- The remote control battery is empty.
- There is no line of sight between the remote control and the pre amp unit (infra-red light provides the communication signal).

Error messages on switching on the power supply

Before the main power supply is activated the in built microprocessor checks the assembly of the pre amp. If an error is detected it is shown in the display (2) and the unit will not switch on to prevent further damage. Mostly this is caused by the previous incorrect insertion of a plug-in card. To rectify follow the instructions in the display.

Conditions of warranty (Europe only)

If despite expectations a defect occurs that cannot be repaired by yourself or your dealer, we undertake the repair of your unit free of charge for up to five years from date of purchase. The warranty covers the costs of material and working time, transport costs are to be borne by the owner.

Provisions for this warranty are:

- The unit must have been purchased from an **AMP**-authorized dealer. Equipment from other sources will not be repaired, not even at charge.
- The warranty registration card, together with a copy of the bill of sale, must be received by us within four weeks of the date of purchase.
- The defect must not have been caused by improper handling or misuse.
- Return the unit to us only in its original packing. If this is not possible we are entitled to refuse acceptance. We will not assume responsibility for transport damage under any circumstances.
- If you no longer possess the original pack contact your dealer. We will also provide packaging upon request. For this service however we will levy a charge of DM 50.
- A short description of the defect is to be included with the returned unit.
- In cases of doubt we reserve the right to request a copy of the bill of sale.
- We also reserve the right to levy a handling charge for items returned without good or valid reason, or if the unit proves to be not defective.

NOTE

If you are returning the unit from a country other than Germany you should ensure that correct export documents are obtained. We cannot accept any charges for costs arising from improper or incomplete export documentation.

If you have purchased your unit from a dealer outside Germany please refer to him or the relevant importing firm to process the warranty.

Technical details AMP essential pre

Input sensitivity

Line input	100 mV
MM	2 mV
MC	0.2 mV

Input impedance

Line input Cinch	5 kOhms
Line input XLR	10 kOhms
MM	47kOhms
MC	1 kOhms

Signal to noise ratio

High level	>100dB(A)
MM	>85dB(A)
MC	>75dB(A)

Frequency response

High level	1 Hz-> 500 kHz (-3dB)
Phono	30 Hz->20 kHz (+/- 0.2dB)

Output impedance

Cinch	10 Ohms
XLR	20 Ohms
Head phones	100 Ohms

Output Voltage >7V

Power consumption

In operation:	20-50W
Standby:	2W

Power supply 230V or 115 V / 50-60 Hz

Dimensions (LxWxH) 435 x 320 x 110mm

Weight 15 – 20 kg dependent on fittings

Valid at 05/2002. Subject to technical modification without notice