

TRIGON

ELEKTRONIK GMBH

OWNERS MANUAL

MONAURAL POWER AMPLIFIER

MONOLOG

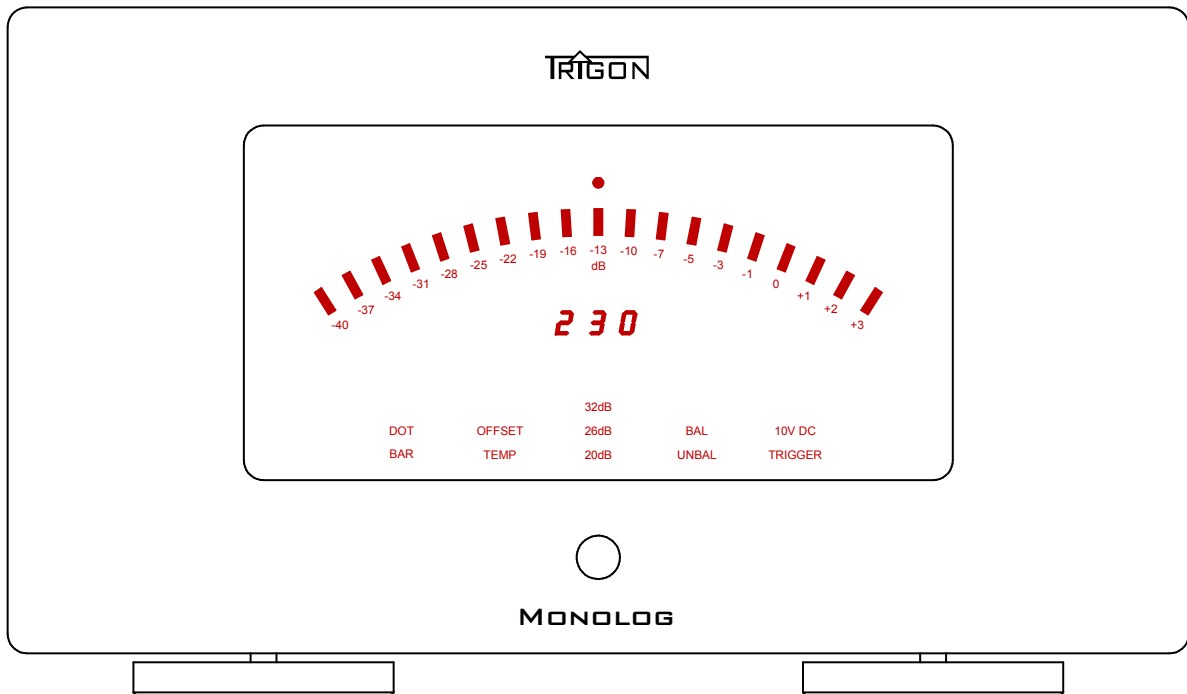


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1. Introduction

Dear **TRIGON** owner,

Thank you for purchasing a **MONOLOG** high-performance mono power amplifier from the **TRIGON PREMIUM LINE**. Our **PREMIUM LINE** defines the best seat in the house of authentic music reproduction, **MONOLOG** stands for the way music is played, with authority.

This audio component positions **TRIGON** at the state-of-the art of performance and craftsmanship. Timelessly elegant finish in aluminium and chrome, innovative circuitry and design, highest grade components and built quality are the hallmark of our **PREMIUM LINE**. These mono-blocs of the **PREMIUM LINE** offer enough power to meet every musical challenge with virtually any loudspeaker. Owing to their outstanding power bandwidth they will flawlessly reproduce the pace and full dynamics of music signals. The inherent optimal channel separation ensures a 3-dimensional soundstage and a holographic image of the musical event, without any electronic limitation. The **MONOLOG'S** uncompromising circuit design approach doesn't stop at effortlessly rendering large scale performances. With maximum control of loudspeakers and exceptional resolution of even the finest details these precision instruments are equally at ease at low level listening, faithfully rendering musical textures and dynamics.

While we understand that you may be in a hurry to experience your music through your new **TRIGON MONOLOG** power amplifiers, we recommend that even the most experienced HiFi lovers carefully read the manual to fully understand these fine audio components and thereby maximize the return on your investment.

The **TRIGON** team wishes you much joy and great musical pleasure with your new **MONOLOG** power amplifiers.

2. General technical description

The **MONOLOG** is a high-performance audio component for domestic indoor use. This power amplifier is configured as a monobloc, therefore two components are needed for stereo applications. One of the significant advantages of this concept is the possibility to install each amplifier physically close to the corresponding loudspeaker and therefore minimize the length of the speaker cable. The use of short speaker cables along with longer line-level signal cables minimize loss of detail and maximizes control of the speakers by the amplifiers. This concept further enhances channel separation and therefore optimizes the rendering of the spatial qualities of sound reproduction. This principal also ensures that each amplifier has its own independent power supply which excludes any interference between channels through a shared power supply. Each monobloc amplifier has two 500 VA power transformers and over 80000 μ F storage capacity to ensure that sufficient energy is available to supply the output stages with ample current and stable voltages throughout the amplifiers entire design envelope.

The output stage is realized in bridged topology, which means that there are two completely independent amplifiers are contained within one monobloc amplifier housing. These amplifiers are configured in fully differential mode, with one amplifier driving one phase of the signal while the other is driving the opposite phase. The load is connected between the two amplifiers and acts as a “bridge“ to complete the circuit. The advantage of this configuration lies in the fact that each pole of the loudspeaker is actively controlled by the electronic circuitry. This allows a much tighter control of the individual drivers to achieve a more linear impulse response and better contouring of the sound.

The amplifiers rear panel has two inputs, balanced and single-ended, switch able via an input selector “**BAL/UNBAL**”. The amplifier can be remotely turned on or off via a trigger input (RJ-45 connector, ca. 4-10V DC). This function is enabled via the “**AUTO**” switch also located on the rear panel.

A digital voltmeter on the front panel indicates the current mains input voltage. This function can also be switched off by a rear panel disabled switch.

A large VU-meter on the front panel displays the current output power. This meter is LED-based and very quick. This display can also be changed and/or disabled by a dedicated switch on the rear panel.

2.1 Safety considerations

TRIGON ELEKTRONIK GMBH will not be liable for any damage caused by improper handling or by lack of observing the following safety instructions and warnings.

The **MONOLOG** amplifier must not be installed close to heat sources such as heaters, radiators, light fixtures, fireplaces, stoves or open fire.

- The **MONOLOG** amplifier must not be exposed to shocks or strong vibration.
- The **MONOLOG** amplifier must not be powered up after being moved from a cold location into a warm environment. Condensation may form and could damage the appliance. Please wait until the unit is at room temperature and all possible humidity has evaporated before connecting the component to AC mains.
- The **MONOLOG** amplifier should not be exposed to direct sunlight.
Do not spill any liquid on the **MONOLOG** amplifier. No liquid should ever be **present** inside the unit.
- **Never attempt to operate the component when any part of the chassis is removed.**
- **Before opening the chassis always disconnect the unit from AC mains and wait until all circuits are void of electrical charge.**
- **Never bypass any fuse. Replace any defective fuse only with the original type and value.**- Do not attempt to service the unit. All maintenance or repair work may only be performed by authorized and specially trained personnel. Any repair, modification or tampering by an unauthorized personnel will automatically void all warranty.
- Always power down the unit before connecting or disconnecting signal and/or speaker cables.
- Under all circumstances avoid electrically shorting the output connectors. A short circuit may lead to immediate destruction of the amplifier. Any damage caused by shorting the output is **not** covered by warranty.
- Loudspeakers with an impedance less than 2 Ohms are not recommended and should not be connected to this amplifier.
- Use only appropriate accessories recommended by the manufacturer.

The **MONOLOG** can be operated with AC mains voltages between **210** and **245 Volts**, normal value is **230 Volt**. For specific markets the amplifier can be adapted in the factory for 115V or 100V Ac mains respectively. In this case, please contact your dealer, distributor or **TRIGON ELEKTRONIK G.M.B.H.** directly.

2.2 Installation

After unpacking please check the unit for any transport damage. In this unlikely event please contact your dealer immediately.

Inspect the contents of the package. Included with your **MONOLOG** amplifier you should find these items:

- **TRIGON VOLT** AC mains cable
- **MONOLOG** owners manual (1x per pair)
- Warranty card

Install the unit level in a dry and well ventilated location. For sonic considerations we recommend the use of a proper audio equipment rack or amplifier base. Strong

magnetic fields as produced by halogen light transformers among others may induce audible hum. Allow ample distance between the amplifier and any source of electromagnetic fields. Signal cables should not be run in parallel to AC lines. Hum can likewise be induced by fluorescent lights. A minimum distance of 1 meter (3 ft.) should be allowed. Avoid installing your **MONOLOG** amplifier in locations exposed to direct sunlight and in proximity to sources of radiant heat.

2.3 Warranty and service

Choosing a **MONOLOG** power amplifier you have acquired a carefully designed and technologically thorough product. At Trigon we pride ourselves to monitor every production phase to ensure that a product bearing our name has met countless quality control stages and all our components undergo rigorous final testing before it leaves the factory. Trigon Elektronik GmbH offers a 3 year warranty in the unlikely event, that, against all odds, one of our products does not perform flawlessly. This warranty is limited to the repair of any defective component and the involved labour cost. Any repair under this warranty is usually performed by Trigon Elektronik GmbH. The warranty does not cover any damage caused by improper handling and/or installation, user error, abuse as well as repairs, modifications or tampering by non-authorized personnel or third party. Altered serial numbers automatically void any warranty. Also excluded is transport damage, accidents as well as any liability beyond the repair of manufacturing defects.

Please make sure that the included warranty card is fully completed. The warranty takes effect at the time of delivery by an authorized dealer. Keep all transaction records and proof of delivery with the warranty card.

3. Operation and safety tips

Upon first unpacking the unit we recommend to power it up without hooking up any other device.

After a brief power up sequence (flashing **Status LED (1)**) you will hear the soft clicking of a few relays. The **MONOLOG** amplifier is ready when the front panel display is lit. Now is a good time to familiarize yourself with the features and functions of its various controls and connectors. Select the appropriate input (**BAL** or **UNBAL**) that you will be using later to hook up the preamplifier.

Once you are familiar with all functionalities of the **MONOLOG** amplifier (see also ch. 3.1 and 3.2) you are ready to start the hook up.

CAUTION!!! Before beginning the hook up you should – as always – verify that the **MONOLOG** amplifier and all other components are powered off! Under all circumstances avoid to connect a cable to the **UNBAL INPUT** of the **MONOLOG** amplifier while the unit is powered up, since this type of connector makes contact first on the signal (hot) side before the ground, which can lead to a loud hum that could

damage the amplifier and/or your speakers! The **MONOLOG** being a high power device, it is strongly recommended to act with great care. Please make sure that there are no potential shorts circuits in the speaker cables.

An integrated protection circuit checks the output of the amplifier when it is powered up. Should the load impedance be lower than 2 Ohms, this circuit will prevent turning on the amplifiers main power supply, and the **Status LED (1)** will flash. In this case the power amplifier should be turned off and all speaker connections should be checked for short circuits. If everything seems in good order, please refer to the speaker manufacturer. In the event that the loudspeakers have an impedance rating below 2 Ohms, they cannot be used with the **MONOLOG** amplifier.

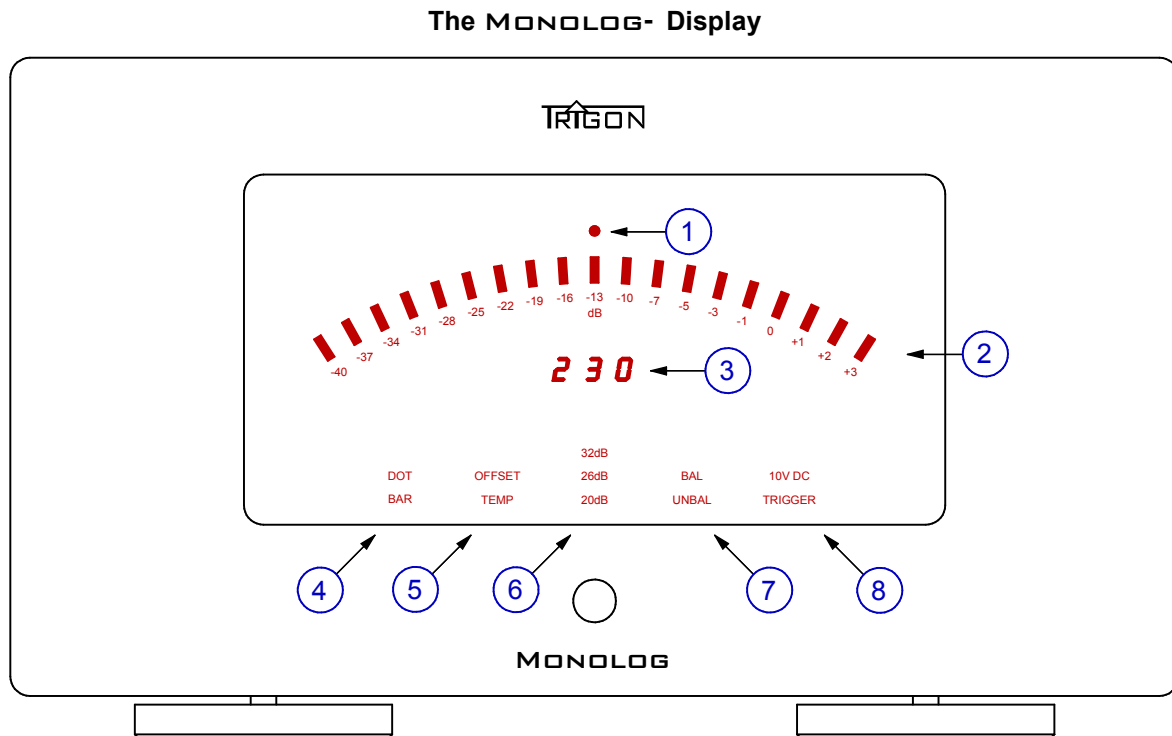
For technical reasons the impedance check cannot be performed during normal operation of the amplifier once the unit is powered up, meaning that there will not be another impedance check before the unit is turned off and powered up again. Shorts that occur during normal operation will not be recognized and could lead to damage or destruction of the amplifier. Once all connections are established, always turn on the preamplifier first and the power amplifier last. The power down sequence should be done in reverse order with the **MONOLOG** amplifiers being switched off first. This will prevent any audible pop from the preamplifier from being amplified, which could damage the speakers, given the high power output capability of the **MONOLOG** amplifier.

To ensure optimum longevity of the output relays, it is recommended to power the amplifier on or off without any programme material being played. This measure will prevent sparking in the relays and thus save the relay contacts from premature wear. Please bear in mind: the higher the output level, the greater the intensity of the spark. Such sparks will increase the contacts serial resistance with time and thus lower the amplifiers effective damping factor.

For cleaning purposes we recommend to use only a slightly damp lint-free cloth. If necessary, use a mild alcohol-free household cleaner. Avoid strong cleaning agents or detergents as they may degrade the finish. For safety reasons always disconnect the unit from AC mains and check all connections before restoring power to your **MONOLOG** amplifier.

CAUTION! Always make sure that no liquids are penetrating inside the chassis!

3.1 Front panel controls



A single control is found on the **MONOLOG** front panel: the STANDBY/POWER switch. This push button controls the microprocessor driven logic circuitry which in turn starts the soft power-up circuit limiting the rush-in current, the main power relays and the output stages. If you desire to use the **AUTO-POWER** function (see **3.2** “**AUTO**“ switch), you need to depress the corresponding push button. When turned off, the **MONOLOG** amplifier is electrically disconnected from AC mains, thus it will not use any power.

[1] Status LED

This LED will light to indicate that the unit is turned on and functioning normally. A flashing **Status LED (1)** indicates a malfunction. Should the operating temperature of the unit reach its maximum permissible value the output relays will be automatically de-activated (no sound) and the **TEMP LED (5)** will be lit while the **Status LED (1)** blinks. Once the temperature returns to normal design parameters, the output relays will re activated, the **Status LED (1)** will be constant and the **TEMP LED (5)** dims. If the DC-protection circuit detects DC present at the output terminals, the **Status LED (1)** flashes, the **OFFSET LED (5)** brightens and the output relays will be de-activated to protect the loudspeakers. In this case the amplifier must be switched off to reset the protection circuit. The **MONOLOG** can be powered up again after approx. 10 seconds. If the **OFFSET-LED (5)** is still rightly lit and the **Status-LED (1)** is flashing, there may be a defect in the output stage and the unit must be sent in for service.

If the **Status-LED (1)** keeps flashing after the amplifier is powered up, the initial impedance check has measured a load less than 2 Ohms at the output terminals (speaker system and cable combined) – There may even be a short circuit!

Since any value below 2 Ohms is outside the design parameters, the unit's power supply will not turn on.

Please turn off the **MONOLOG** amplifier and verify all connections.

CAUTION! The impedance check is always performed when the unit is turned on. This test takes only one second and cannot be performed during normal operation. Should a short occur during operation it could cause the failure of output transistors. Never change or work on any cables connected to the **MONOLOG** cables when the amplifier is turned on!

If all measures within specs, the unit will power up within seconds and the **Status-LED (1)** will be lit solid.

[2] VU METER

The **MONOLOG** amplifier has an integrated VU-Meter which indicates the output level over a range from -40dB to +3dB. This **LED VU Meter (2)** inherently differs from a mechanical device since it is mass less. Thus even very short peaks can be displayed.

This feature allows to set the maximum acceptable level on the associated preamplifier (if available). The maximum allowable level at the amplifier's input is reached when the last LED is lit. Any further level increase will overdrive the amplifier and potentially cause clipping of the output signal.

For the protection of your loudspeakers it is recommended not to exceed the maximum safe output level, since especially tweeters are sensitive to high-order distortion. The **VU selector (9)** toggles between display modes on the **LED VU Meter** on the **VU Mode Indicator (4)**. **BAR Mode** displays the current signal level as bar-graph. Depressing the **VU SWITCH (9)** puts the **LED VU Meter (2)** in **DOT Mode**. In this mode a single dot indicating signal peaks is added to the bar-graph. The dot "lingers" somewhat longer at maximum excursion than the bar-graph, facilitating the readout of peak levels. Depressing the **VU selector (9)** once more turns the **LED VU Meter** off altogether.

[3] Mains Voltage Display

This gives a digital readout of the current AC mains voltage with a precision of approx. 3%. Every second the mains voltage is measured 3 times. Subsequently the displayed value may vary somewhat. The **Mains Voltage Display (3)** can be disabled with the Display **Switch (10)**.

[4] VU Mode Indicator

The **BAR Mode** displays the current signal level as bar-graph. Depressing the **VU selector (9)** puts the **LED VU-Meter** in **DOT Mode**. In this combined mode a single dot indicating signal peaks is added to the bar-graph. The dot "lingers" somewhat

longer at maximum excursion than the bar-graph, facilitating the readout of peak levels. The **VU selector (9)** on the rear panel of the **MONOLOG** amplifier toggles between display modes. When the **LED VU Meter** is disabled, both **VU Mode Indicators (9)** will be dimmed.

[5] LED display TEMP and OFFSET

Should the operating temperature of the unit reach its maximum permissible value the output relays will be automatically de-activated (no sound) and the **TEMP LED (5)** will be brightly lit. Once the temperature returns to normal design parameters, the output relays will reactivate and the **TEMP LED (5)** will dim.

The **OFFSET LED (5)** brightens and the output relays will be deactivated to protect the loudspeakers when the DC-protection circuit detects DC present at the output terminals. In this case the amplifier must be switched off to reset the protection circuit. The **MONOLOG** amplifier can be powered up again after approx. 10 seconds.

If the **OFFSET LED (5)** is still brightly lit after the reset, there may be a defect in the output stage and the unit must be sent in for service. Please contact your authorized dealer, distributor or **Trigon Elektronik GmbH** directly. Since there may be a more serious problem, at hand, the unit must be verified by a qualified service technician.

[6] Gain LED 20dB, 26dB and 32dB:

The push button labelled **GAIN (11)** located at the rear of the amplifier allows to set the appropriate gain for your system. Three levels of gain are available.

The **20dB** setting should be tried first. This amount of gain (amplification factor) is the lowest and usually offers the best noise figures. Since most current preamplifiers output levels are high enough to be compatible with this setting, it is not necessary to run the amplifier with increased gain, since higher voltage gain will not only increase output levels, but can also lead to increased background noise.

We recommends to always starting with his lowest gain setting (**20dB**). The amplifier gain should only be increased if it is not possible to drive the amplifier to maximum output with the preamplifier. This can be easily verified with the **LED VU Meter (2)**. The selected gain setting is shown by the **Gain LED (6)**

[7] LED Display BAL and UNBAL

This display shows the input selected with the **BAL/UNBAL Selector (12)**.

To prevent switching noise in the loudspeakers, the output relays will be temporarily disabled while inputs are being switched.

[8] LED Display TRIGGER and 10V DC

This indicates whether one of the available automatic power options has been enabled. The desired mode can be selected from the pushbutton labelled “**AUTO**” (13) located on the rear panel.

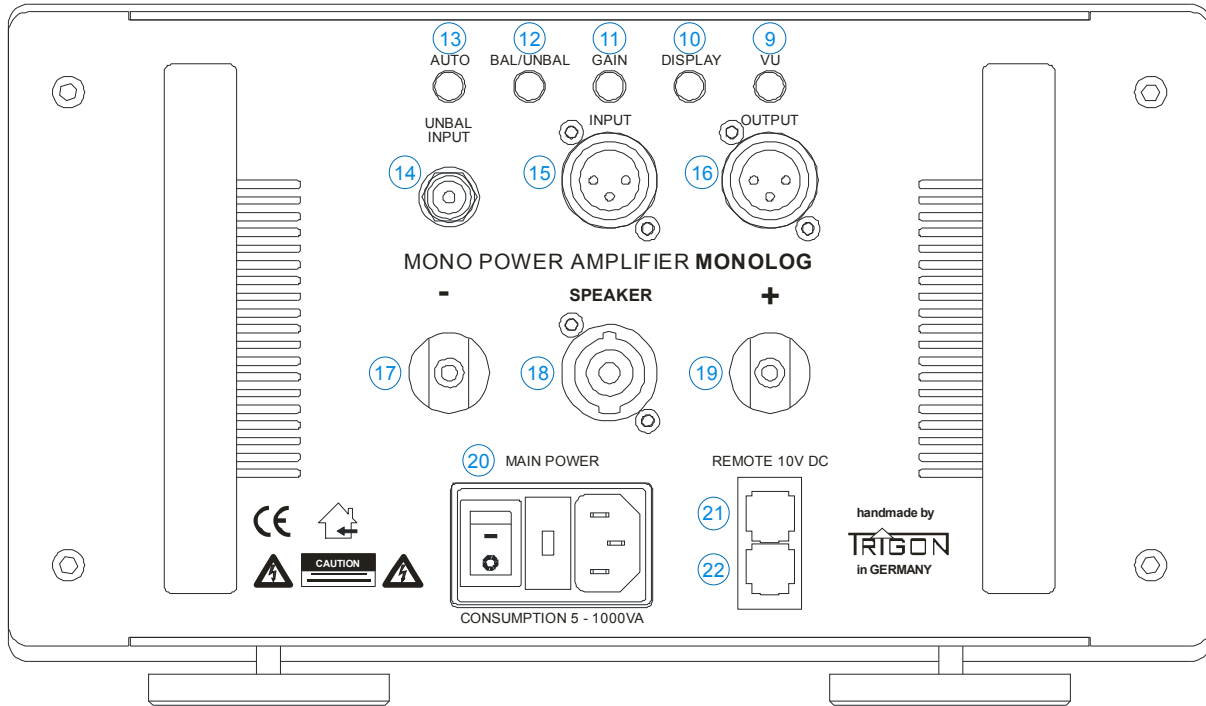
With **TRIGGER** mode selected, the **MONOLOG** amplifier will turn on as soon as an audio signal is present at the input terminals. At very low sound levels it may happen that the signal cannot be recognized. In this case it will be necessary to increase the volume setting at the preamplifier.

In **10V DC** mode the **MONOLOG** amplifier will turn on when DC (approx. +4V to +10V) is present at the **REMOTE 10V DC** (21) terminal on the rear panel. Such DC trigger outputs are featured on some preamplifiers. This option offers the advantage that power amplifiers will be turned on or off whenever the preamplifier is switched on or off.

Note: If one of the **AUTO** power options is selected, the main power switch on the **MONOLOG** amplifier has to remain in the ON position.

3.2 Rear panel controls and connections

MONOLOG rear panel controls and connections



[9] VU selector

Allows to toggle between LED VU meter display modes. The selected mode is displayed by the **VU Mode Indicator** (4).

[10] DISPLAY switch

This pushbutton enables/disables the front panel display. In disabled mode, only the **Status LED** (1) is active.

[11] GAIN selector

Selects the voltage gain of the amplifier. Three gain settings are available (20dB/26dB/32dB). The selected value is displayed by the **Gain LED** (6).

Hint: We recommend to always starting with his lowest gain setting (20dB), since most current preamplifiers offer output levels high enough to work well with this setting. The amplifier gain should only be increased if it is not possible to drive the amplifier to maximum output with the preamplifier. This can be easily verified with the **LED VU Meter** (2).

It is not advisable to run the amplifier with higher gain than necessary, since higher voltage gain will increase background noise from upstream components.

[12] BAL/UNBAL input selector

Selects the appropriate input BAL on XLR/UNBAL on Cinch (RCA). The selected input is displayed by the **BAL/UNBAL LED Display (7)**.

[13] “AUTO“ Switch

Activates the automatic power mode. With **TRIGGER** mode selected, the **MONOLOG** amplifier will turn on as soon as a sufficiently strong (loud) audio signal is detected at the input terminals.

In **10V DC** mode the **MONOLOG** amplifier will turn on when DC (approx. +4V to +10V) is present at the **REMOTE 10V DC (21)** terminal on the rear panel. Such DC trigger outputs are featured on some preamplifiers. This option offers the advantage that power amplifiers will be turned on or off whenever the preamplifier is switched on or off. The selected automatic power mode is indicated by the **TRIGGER / 10V DC LED Display (8)**

Note: If one of the **AUTO** power options is selected, the main power switch on the **MONOLOG** amplifier has to remain in the ON position.

Hint: We recommends to preferably using the **10V DC Mode** (if available). This makes sure that not even the quietest opening passages are being missed.

[14] UNBAL Input

To connect unbalanced (single-ended) audio sources (e.g. preamplifiers). This input can be activated with the **BAL/UNBAL input selector (12)**. The **UNBAL LED** on the front panel display (7) will be lit.

[15] BAL Input

To connect balanced (differential) audio sources (e.g. preamplifiers). This input can be activated with the **BAL/UNBAL input selector (12)**. The **BAL LED** on the front panel display (7) will be lit.

PIN1 = Ground
PIN2 = Signal +
PIN3 = Signal -

[16] OUTPUT Connector

Can be used to connect to the input of another power amplifier. This allows to hook up several power amplifiers in parallel (so-called “Daisy-chain” array) to a single source (e.g. for Bi- or Tri-amping).

Note: In multi-amplification the individual drivers of a loudspeaker system need to have separate inputs.

E.g. Bi-amping in stereo requires four monoblocs, i.e. one for the bass and one for the mid/high frequency modules for each channel.

PIN1 = Ground

PIN2 = Signal +

PIN3 = Signal -

[17] Speaker terminal –

Connector for the negative (–) side of the load (loudspeaker). Please remember that the **MONOLOG** is a bridged topology amplifier, which means that the negative (–) terminal is not neutral but connected to a “hot” pole of an amplifier stage inside the **MONOLOG**. This terminal must never be connected to the amplifier chassis or electrical ground.

CAUTION! The load impedance must not be inferior to 2 Ohms!

[18] SPEAKON OUTPUT

This socket may be used to connect the speaker with a SPEAKON plug. This alternative hook up with an appropriately terminated cable has the advantage of offering a secure and relatively quick means of connecting a loudspeaker to the amplifier. Accidental shorts are fairly unlikely to occur with this type of locking connection. The SPEAKON connector has 4 poles (contacts). PIN1+ and PIN2+ are connected to the red (+) speaker terminal, PIN1- and PIN2- are connected with the black (-) speaker terminal.

CAUTION! The load impedance must not be inferior to 2 Ohms!

[19] Speaker terminal +

Connector for the positive (+) side of the load (loudspeaker).

CAUTION! The load impedance must not be inferior to 2 Ohms!

[20] AC input socket with mains switch and fuses

Connect the included AC mains cable. The red dot indicates the hot pole. Please make sure that this pole is connected to the hot AC-mains phase. (This can readily be verified with a circuit tester).

The rocker switch establishes the connection of the AC mains input to the front panel power switch.

In the event that the main fuse needs changing, the AC mains connector must be removed to access the fuse compartment.

CAUTION! Replace fuses only with the same type to avoid possible damage!

[21] REMOTE 10V DC input connector

The **MONOLOG** power amplifier will turn on if a **trigger voltage** between +4V and +10V DC is applied to this connector with **AUTO power mode 10V DC** enabled. As soon as the **trigger voltage** is turned off, the **MONOLOG** power amplifier will shut down.

[22] REMOTE 10V DC output connector

This connector outputs a **10V DC trigger voltage** when a trigger signal is applied to the **REMOTE 10V DC input connector (21)**.

This feature allows to simultaneously turning on or off any number of **MONOLOG** power amplifiers from one trigger.

4. What if...

In this chapter you will find some useful tips on troubleshooting basic problems.

4.1 ... nothing happens?

- Is the unit plugged in correctly? - *Make sure that the AC mains cable is properly seated and plugged in.*

- Is the power outlet active or may a circuit breaker be tripped? - *Verify the circuit breaker(s).*

- Is the main AC rocker switch on the rear panel in the ON position? - *Turn on the main AC rocker switch.*

- Is the internal fuse burned out? - *Replace the fuse with a new one of the same type. If all else fails, send the unit for servicing.*

4.2 ... there's power but no sound?

- Is the proper input selected? - *Select active input.*

- Is there a signal present from the source? – *If there is a signal coming from the source and the proper input is selected, the VU meter will display that signal. If this is the case, please check the connections to the loudspeakers otherwise check the signal cables. Often, if the problem occurs only with one channel, chances are that a signal cable is defective and needs to be replaced.*

- Has there been an electrostatic discharge to the unit? – *It can happen, especially during winter when the ambient air is very dry, that fabrics (clothing, carpets) build up a static electrical charge which may be discharged to the amplifier chassis by simply touching the unit. This kind of static discharge can cause the microprocessor controlling the Monolog amplifier to “crash”, similar to a computer “crashing”. This may cause the Monolog's logic circuits to deactivate the output relays or to simply stop responding. Switch off the power to the Monolog from the power switch located on the unit's front panel for 30 to 60 seconds. Generally the amplifier will resume functioning normally once power is restored.*

4.3 ... it hums?

Are the signal cables securely connected? - *Check the input cables.*

In some cases the electrical grounding of multiple components can cause so-called ground-loops that induce humming. Troubleshooting these may require some experience. Please contact your dealer for assistance.

Hum is present only when a tuner (radio or TV), a VCR, DVD recorder or a video display is connected to the preamplifier. - *These types of components are usually hooked up to an antenna or cable feed, which may in turn be grounded separately. This can also cause a ground loop. In this case a so-called ground breaker may solve the problem. They are usually inexpensive and can be readily purchased from well stocked HiFi, radio or television specialty stores.*

5. Specifications

Power Rating	: 650 Watts at 4 Ohms, 400 Watts at 8 Ohms
Inputs	: 1x Cinch, 1x XLR
Impedance	: 47 kOhm (unbal), 22 kOhm (bal)
Outputs	: 1 x Speaker, 1 x XLR Line
Distortion (THD + N)	: < 0.03%
Frequency response	: 0.5 Hz – 250 kHz (-3dB)
Noise	unbal : 120µV (A-weighted) bal : 150µV (A-weighted)
Weight	: 23.5Kg
Dimensions	: 300 x 160 x 450 mm (BxHxT)
Warranty	: 3 years

Specifications subject to change

Designed and crafted by:

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