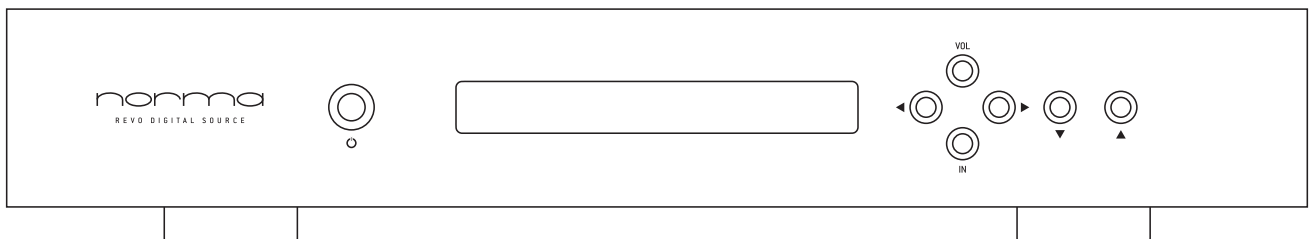




REVO-DAC1

Digital to Analog Converter

Manual



Safety manual

REVO-DAC1

Contact informations

Make sure you register your purchase.

Visit: <http://www.normaudio.com/normaudio/>

Documentation Conventions

This document contains general safety and operation instructions for your Norma product. It is important to read this document before attempting to use this device. Please pay particular attention to safety instructions.

The information that the manual contains is subject to change without notice. NORMA assumes no responsibility for errors that may appear within this document and is restricted for use by NORMA Audio.



Copyright and Acknowledgements

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Italy

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I • Introduction

Thank you for purchasing a NORMA Audio product.


Please read this manual thoroughly before making connections and plugging in the unit to the mains power supply.

Following the instructions in this manual will enable you to obtain optimum performance and listening enjoyment from your new NORMA unit.


Please retain this manual for future reference.




CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN



CAUTION:
TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

 The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the products enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

 The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

WARNING:
TO PREVENT FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

II • Unpacking

Follow these steps to safely unpack the NORMA unit:

- Open the shipping box and remove the top layer of foam. Be careful not to damage the inside of the package with the knife.

The packaging must contain the following items:

- 1 NORMA;**
- 1 Remote control unit;**
- 1 AC power cord (in some countries);**
- 1 User manual;**
- 1 Warranty police and registration card.**

- Grab the underside of the NORMA unit and lift it straight out of the packing box;

- Place the NORMA unit in a safe location and remove the protective plastic wrapping.

Note:

If any accessories are missing, or if the unit is damaged or fails to operate, notify your dealer immediately. If the unit was shipped to you directly, notify your shipper immediately. NORMA recommends that you retain the original carton and packing materials in case you need to move or ship the unit in the future. Neither NORMA or the shipper can be held responsible for damages incurred during transit if the original factory packing is not used. All factory returns require that a previous return authorization number be issued by NORMA prior to shipment.

Keep this manual handy for future reference.

Register your NORMA unit online at www.normaudio.com within 15 days of purchase. Retain the original, dated sales receipt as proof of warranty coverage.

▲ Caution:
Keep the carton box, the foam protection and the PET sheet out of the reach of children, choking hazard.

REVO-DAC1 / Safety manual

I / II • Introduction / Unpacking ◀ |

III • Before use

⚠ IMPORTANT SAFETY INSTRUCTIONS ⚠

Read this section carefully to ensure safe operation

▶ **III.I General**

III.I.I • Read these instructions

All the safety and operating instructions should be read before the product is operated.

III.I.II • Keep these instructions

The safety and operating instructions should be retained for future reference.

III.I.III • Heed all warnings

All warnings on the product and in the operating instructions should be adhered to.

III.I.IV • Follow all instructions

All operating and use instructions should be followed.

III.I.V • Preventing hearing loss

Caution, excessive sound pressure from earphones and headphones can cause hearing loss.

III.I.VI • The labels containing information about safety must be always visible and in good conditions

▶ **III.II Positioning**

III.II.I • Environment and space requirements

Operating environment temperature and humidity: +5 °C to +35 °C (+41 °F to +95 °F); less than 80% RH (cooling vents not blocked). Do not install this unit in a poorly ventilated area, or in locations exposed to excessive humidity or direct sunlight (or strong artificial light).



Due to stray magnetic fields, turntables, amplifiers and CD players should not be located nearby due to possible interference.



Do not use this product in an explosive atmosphere.



Keep electrical device out of the reach of children. Injuries and shock hazard.



Avoid locations subject to vibration and excessive dust. The dust could accumulate and cause overheating.



III.II.II • Stands

The important weight of our products require that they are placed only on an adequate mechanical structure. We are not responsible for injuries or damages due to a wrong positioning. Do not put NORMA devices on high places, to avoid injury from tip-over or falling. This product cannot be mounted to a wall or ceiling.



III.II.III • Object and Liquid Entry

Do not use this apparatus near water

This product shall not be exposed to dripping and splashing, for example near a bath tub, wash bowl, kitchen sink, laundry tub, in a wet basement, near a swimming pool and the like. Do not place an object containing liquid, such as a flower vase, on the appliance even if it is switched off.

Never spill liquid of any kind on the product.

Internal condense can be formed if the amplifier is carried from an extremely cold environment to an extremely hot one. Please wait at least for an hour before operating it again. Never push objects of any kind into the apparatus through openings as they may touch dangerous voltage points or short-out parts that could result in a fire or electric shock.

Never use this product with wet hands, shock and injury hazard.



III.II.IV • Flame

Do not place a flaming object, such as a candle or lantern, or near the product. Do not use free flames or flammable substances near this appliance.



III.II.V • Ventilation

Slots and openings in the cabinet are provided for ventilation and to ensure reliable operation of the product and to protect it from overheating. Do not block any ventilation openings. Install in accordance with the manufacturers instructions. Ventilation should not be impeded by covering the ventilation openings with items such as newspapers, table cloths, curtains and so on. The openings should never be blocked by placing the product on a bed, sofa, rug, or other similar surface. This product should not be placed in a built-in installation such as a bookcase or rack unless proper ventilation is provided or the manufacturers instructions have been adhered to. Ensure that there is adequate ventilation. Leave 20 cm (8") of free space at the top and sides and 10 cm (4") at the rear. The rear edge of the shelf or board above the apparatus shall be set 10 cm (4") away from the rear panel or wall, creating a flue-like gap for warm air to escape.



III.II.VI • Heat

Do not install near any heat sources such as radiators, heat registers stoves, or other apparatus (including amplifiers) that produce heat.



III.II.VII • Batteries

The remote control batteries cannot be exposed to excessive heat such as sunshine, any improper use may result in fire or personal injuries.

▶ III.III Power

III.III.I • AC fuse

The AC fuse inside the unit is not user-serviceable. If you cannot turn on the unit, contact your NORMA dealer.

III.III.II • Power sources

This product should be operated only from the type of power source indicated on the product. If you are not sure of the type of power supply to your home, consult your product dealer or local power company.

▲ AC outlet voltages vary from country to country. Make sure that the voltage in your area meets the voltage requirements printed on the unit's rear panel (e.g. AC 230 V, 50 Hz or AC 120 V, 60 Hz). The power cord plug is used to disconnect this unit from the AC power source. Make sure that the plug is readily operable (easily accessible) at all times.

The unit is of class 1 construction and must be connected to a mains socket outlet with a protective earthing connection.

III.III.III • Mains cord

The mains cord is intended to be safely disconnected to the device for this apparatus and shall remain readily operable at all times.

Be sure to insert each power cord securely. To prevent hum and noise, do not bundle the interconnect leads with the power cord or speaker leads.

To completely disconnect this product from the mains, disconnect the plug from the wall socket outlet. The mains plug is used to completely interrupt the power supply to the unit and must be within easy access by the user.

III.III.IV • Power plug / Wall outlet

• If the AC plug of this unit does not match the AC outlet you want to use, the plug must be removed and appropriate one fitted.

• Replacement and mounting of an AC plug on the power supply cord of this unit should be performed only by qualified service personnel.



Contact your NORMA dealer for more information.

• If connected to an AC outlet, the cut-off plug can cause severe electrical shock. Make sure it is properly disposed of after removal.

▲ To avoid fire hazard or other problems, the equipment should be disconnected by removing the mains plug from the wall socket when left unused for a long period of time (for example, when on vacation).

• This product must be terminated with a three-conductor AC mains power cord that includes an earth ground connection. To prevent shock hazard, all three connections must ALWAYS be used.

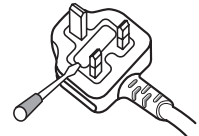
III.III.IV.I • UK plug-fitting instructions (UK only)

This appliance is supplied with a moulded three pin mains plug for your safety and convenience. A 13 amp fuse is fitted in this plug. Should the fuse need to be replaced, please ensure that the replacement fuse has a rating of 13 amps and that it is approved by ASTA or BSI to BS1362. Check for the ASTA mark  or the BSI mark  on the body of the fuse.

If the plug contains a removable fuse cover, you must ensure that it is refitted when the fuse is replaced. If you lose the fuse cover the plug must not be used until a replacement cover is obtained. A replacement fuse cover can be obtained from your local dealer. If the fitted moulded plug is unsuitable for your socket outlet, in any case cut the cord for replace the plug. There is a danger of severe electrical shock if the cut off plug is inserted into any socket. Please contact your local dealer for the appropriate power cord with appropriate plug.

Q How to replace the fuse

Open the fuse compartment with a screwdriver and replace the fuse.



III.III.V • Mains switch

When the switch is in the OFF position, the equipment is not completely switched off from mains.

▲ The STANDBY mode on this unit will not completely shut off all power from the AC outlet. Since the power cord serves as the main disconnect device for the unit, you will need to unplug it from the AC outlet to shut down all power. Therefore, make sure the unit has been installed so that the power cord can be easily unplugged from the AC outlet in case of an accident.

III.III.VI • Power supply

If an external power supply is required, the equipment shall be installed near the power supply so that the power supply is easily accessible.

III.III.VII • Power cord protection

Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus. Do not handle the mains cord with wet hands.

III.III.VIII • Overload protection and prevention

Do not overload wall outlets, extension cords, or integra convenience receptacles as this can result in a risk of fire or electric shock.

Be sure that the used wall outlet and the circuitry above it can provide the correct amount of current without significant voltage drop. It can result in a risk of fire or electric shock.

III.III.IX • Lightning protection

Always unplug this apparatus during lightning storms.
For additional security, remove all connections from the unit when unused for long periods of time.

▶ III.IV Servicing

III.IV.I • Do not try to repair this product

Do not attempt to service this product yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.

For technical assistance, please contact a qualified technician or a NORMA dealer.

III.IV.II • Damage requiring service

- 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.

III.IV.III • Service warning

Unplug the apparatus from the wall outlet and refer servicing to qualified service personnel under the following conditions:

- When the power-supply cord or plug is damaged;
- If liquid has been spilled, or objects have fallen into the apparatus;
- If the apparatus has been exposed to rain or water;
- If the apparatus does not operate normally by following the operating instructions. Adjust only those controls that are covered by the operating instructions as an improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the apparatus to its normal operation;
- If the apparatus has been dropped or damaged in any way;
- When the apparatus exhibits a distinct change in performance this indicates a need for service.

III.IV.IV • Replacement parts and accessories

When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer or have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock, or other hazards.

Use only accessories and optional boards specified by the manufacturer. Clone or non-original accessories may result in fire, electric shock or other hazards.

III.IV.V • Safety check

Upon completion of any service or repairs to this product, ask the service technician to perform safety checks to determine that the product is in proper operating condition.

III.IV.VI • Never disassemble or modify the unit

Do not use this product with any covers removed, shock hazard. Do not bypass any fuse, it may cause damages and fire.

▶ III.V Care & maintenance

III.V.I • Cleaning

▲ Unplug this product from the wall outlet before cleaning.

- Do not use liquid cleaners or aerosol cleaners;
- Use a damp cloth for cleaning;
- Do not let insecticides, benzene, and thinner come in contact with the unit, absolutely do not use these substances to clean the unit.

IV • Operating

▶ IV.I Connections

▲ Warning:

When making connections to this or any other component, make sure all components are off. Turn off all systems power before connecting the NORMA unit to any other component. For additional security, remove the power cord before making the connections.

Make sure all cable terminations are of the highest quality, free from frayed ends, short circuits, or cold solder joints.

- Before making any connections, make sure all power is turned off and only use suitable interconnects. For additional security, remove the power cord before making the connections;
- Before attempting any system interconnection, please familiarize yourself with the front and rear panel controls of the NORMA unit;
- Do not connect the NORMA unit speakers output terminals to any device other than a loudspeaker. Do not short-circuit the amplifier's output terminals. Never connect the output terminals of one amplifier to the output terminals of another amplifier.

▶ IV.II Warming up

This unit's top, bottom and lateral heatsinks may get hot after prolonged use. This is normal but avoid touching them.

▶ IV.III Running in time

Electronic audio components have a running in time of around a 200 - 300 hours. This will allow the new components to settle down and the sonic properties will improve over this time.

▶ IV.IV Long time do not use

If you do not use this unit for a long time, it may not work properly the next time you turn it on, so be sure to use it occasionally.

If you intend not to use the remote controller for a long time, remove the batteries to prevent damage from leakage or corrosion. Remove expired batteries as soon as possible to prevent damage from leakage or corrosion. Do not leave rubber or plastic items on this unit for a long time, because they may leave marks on the case.

▶ IV.V Application fields

This product is for general household purposes. Any failure due to use for other than household purposes (such as long-term use for business purposes in a restaurant or use in a car or ship) and which requires repair will be charged for even during the warranty period.

V • Recycling & waste

🔍 V.I Notes about recycling



This products packaging materials are recyclable and can be reused. Please dispose of any materials in accordance with the local recycling regulations. When discarding the unit, comply with local rules or regulations.

Batteries should never be thrown away or incinerated but disposed of in accordance with the local regulations concerning battery disposal. This product and the supplied accessories, excluding the batteries, constitute the applicable product according to the WEEE directive. Products and batteries with the symbol (crossed-out wheeled bin) cannot be disposed as household waste. Old electrical and electronic equipment and batteries should be recycled at a facility capable of handling these items and their waste byproducts. Contact your local authority for details in locating a recycle facility nearest to you.

▶ V.II Information on disposal for users (private households)

V.II.I • In the European Union

▲ Attention:

If you want to dispose of this equipment, please do not use the ordinary dust bin. Used electrical and electronic equipment must be treated separately and in accordance with legislation that requires proper treatment, recovery and recycling of used electrical and electronic equipment.

Following the implementation by member states, private households within the EU states may return their used electrical and electronic equipment to designated collection facilities free of charge. In some countries your local retailer may also take back your old product free of charge if you purchase a similar new one.

If your used electrical or electronic equipment has batteries or accumulator, please dispose of these separately before and according to local requirements.

By disposing of this product correctly you will help ensure that the waste undergoes the necessary treatment, recovery and recycling and thus prevent potential negative effects on the environment and human health which could otherwise arise due to inappropriate waste handling.

V.II.II • In other countries outside th EU

If you wish to discard this product, please contact your local authorities and ask for the correct method of disposal.

For Switzerland:

Used electrical or electronic equipment can be returned free of charge to the dealer, even if you don't purchase a new product. Further collection facilities are listed on the home page of www.swisco.ch or www.sens.ch.

▶ V.III Information on disposal for business user

V.III.I • In the European Union

If this product is used for business purposes and you want to discard it:

Please contact your NORMA dealer who will inform you about the take-back and recycling. Small products (and small amounts) might be taken back by your local collection facilities.

For Spain:

Please contact the established collection system or your local authority for take-back of your used products.

V.III.II • In other Countries outside the EU

If you wish to discard of this product, please contact your local authorities and ask for the current method of disposal.



▲ Attention:

Your product is marked with this symbol. It means that used electrical and electronic products should not be mixed with general household waste. There is a collection system for these products.

User manual

REVO-DAC1



CONGRATULATIONS

First of all, we would like to thank you for the trust you have placed in NORMA. The product you purchased is the result of a long research and development process in which we have put our technical experience, and our passion for music. This products will offer you the best that technology has expressed for high quality sound reproduction. In front of the choice of what to offer as the possibility of customizing the product functions, there are two ways: the first is a simply and immediate user menu, but inevitably with limited possibilities. The second one is wider and able to adapt its functioning (and the sound performance) to the user's desire. Our decision was to offer you the possibility of customization as much as possible the functions that influence the final result. We are sure that you can appreciate this way. In virtue of this, the menus are wide. You will find interesting to read and to study how to use it in detail, in order to better adapt it to your desire. We hope that this manual is clear and that it will answer to each your questions; however we will be pleased to answer to any questions or doubt that you will have. We are confident that you will find great satisfaction from the use of our products, which, if treated with care, will give you lasting reliability. Before use, it is essential to read and learn the entire contents of this document.

1 • Controls and connections

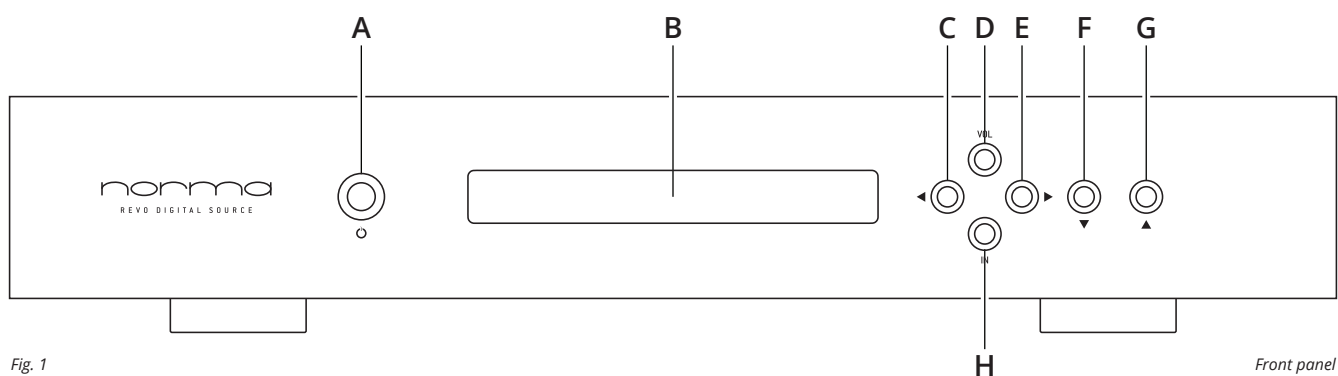


Fig. 1

► 1.1 List of commands and front indications

A • POWER ON command

Stand-by / ON command.

B • Unit multifunctional display

C • SEL - Command

D • VOL Command

Enables and disables the digital volume control.

E • SEL + Command

Pauses the track playback.

F • VOL - Command

Decreases the listening volume.

G • VOL+ Command

Increases the listening volume.

H • IN Command

Chooses an input.

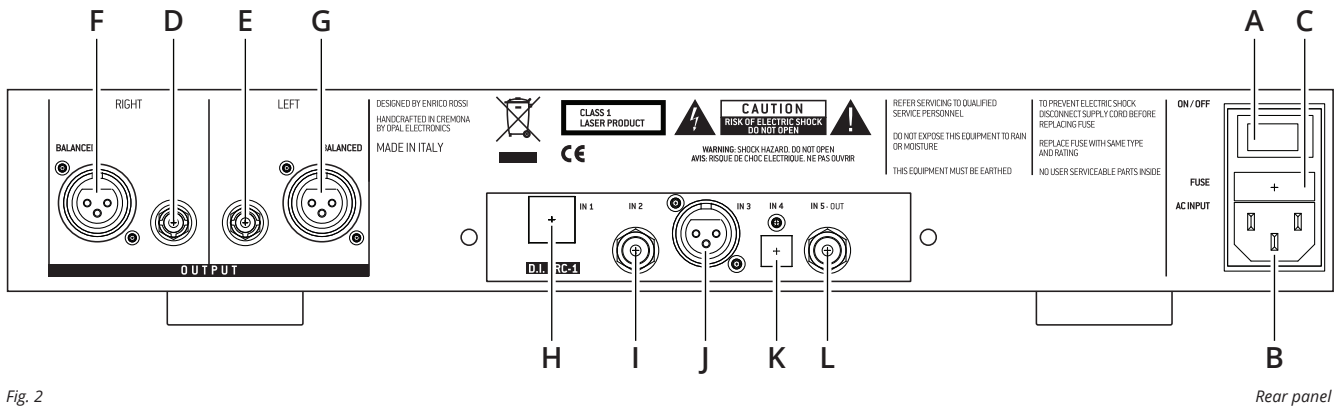


Fig. 2

Rear panel

► 1.2 Controls and rear connections

A • Mains Switch, Power ON / OFF

B • Power connector

AC power inlet. Housing for mains cable connection according to IEC / CEE 22 (VDE C13 connector). Check that the mains voltage corresponds to that indicated on the label on the rear panel.

C • Fuse

AC mains fuse. Verify that the voltage, the type and value coincides with that indicated on the rear panel.

▲ Attention:

For any reason the user must replace the fuse, it is a operation reserved for qualified personnel in the service centers.

D/E • OUT Unbal.

RCA connection sockets.
Output sockets for UNBALANCED signal right / left.

F/G • OUT Bal.

Balanced XLR sockets connection.
Output socket for BALANCED signal right / left.

H • USB B type Input

Usb 2.0 input.

I • SPDIF RCA input

RCA socket for SPDIF connection (75 ohms).

J • AES-EBU XLR input

XLR socket for SPDIF (AES/EBU) connection (110 ohms).

K • SPDIF Toslink Optical input

Toslink optical receiver for SPDIF connection.

L • SPDIF RCA input (optional CD output)

RCA socket for SPDIF connection (75 ohms).

🔍 1.3 Technical notes about inputs

The device must be able to make the most of their features. Nothing in the listening chain should be overlooked, starting with the interconnect cables, which must be of excellent quality, very transparent and neutral. NORMA products are of extremely high quality and will benefit greatly with the use of appropriate cables.

Nothing in the listening chain should be underestimated, from the quality of the cables to the position of the speakers. For example, if used cables are of a low quality, the resulting sound will be much less than the potential of the device.

▶ 1.4 Warm up and run in

The warm up is a fundamental factor. For the best sound performance, we recommend an initial run of about 200 to 300 hours of operation with active speakers connected and music played at a normal listening level. After a long period of inactivity, it is recommended to restore the run in. Similarly, to obtain the best sound we recommend to warm up the product for at least 3 - 4 hours.

▶ 1.5 The problem of hum

Frequently the connection of multiple devices can cause a certain amount of hum, even when the individual devices are entirely silent. Connecting equipment together can create ground loops which can introduce in the audio signal path a certain amount of network harmonics. This problem, which also affects professional installations, is long-standing and not easy to solve. Its influence is particularly evident in the case of high gain amplifiers and in the presence of signals of very low amplitude. The situation may sometimes be particularly noticeable with phono stages, turntables and pick-ups.

We point out some possible remedies:

- Reduce the connection cables length;
- Change signal cables and power cables position;
- Increase the distance between units, or arrange them in a different way;
- Avoid using devices that can induce electromagnetic fields or interference, such as electric motors, fluorescent lights or halogen lamp low voltage transformers;
- It may be useful to increase the signal connection shielding from one side of the termination. If a device proves to be involved in hum problems and / or ground loops contact the manufacturer to try to solve the problem;
- The electrical safety is due to its connection to safety ground. Before connecting and using the device, make

sure that the grounding system is efficient.

NORMA is not responsible for any damage caused resulting from wrong system grounding, or failure to follow safety procedures and regulations or a disconnection made in any way to the ground security equipment;

- Check that the mains power cable has a ground connection and do not remove it, for any reason;
- LED TV's or PLASMA TV's emit large amounts of infrared rays that can interfere with the IR remote control signal.

2 • Start to use

▶ 2.1 Turn ON / OFF

The REVO series DAC are equipped with a sophisticated power on system, integrated with the system remote control and electronic protections. This system consists of three phases: POWER OFF, STAND-BY, POWER ON [OPERATE].

2.1.1 • Power OFF

In this phase, the rear control switch is in the OFF position and the player is off.

2.1.2 • Power OFF to standby

Placing the rear control switch in the ON position, the CD player is active in STAND-BY POWER indicator on the front panel will be on with a low intensity. This condition can be maintained indefinitely, the player is ready to receive the command switch.

2.1.3 • Power ON [OPERATE]

The power is on to all intents and purposes, this can be determined by the prolonged action on the front POWER button (or IR remote POWER button). Subsequently, the light indicator turns off and the display shows $\square n$. When the message $\square n$ disappears the unit is ready to operate.

2.1.4 • Power ON to standby

To put this unit in STANDBY mode, press the POWER button [or the POWER button on the remote control], the indicator will switch to low-intensity lighting.

2.1.5 • Standby to power OFF

To POWER OFF this unit, press the POWER button, on either the remote control or the front panel of the player, the display will show you the message $b y E$. When that message disappears you can turn off completely the player pressing the rear mains switch.

Never work directly on the rear control without first placing the CD player into STANDBY.

Other commands are indirect acting and requires to be selected previous to CD button:
POWER, 1, 2, 3, 4, 5, 6, 7, 8, 9, 0, DSY, F2.

Some of the controls on the IR remote may be inactive because they are reserved for future use.

➔ See Remote controls manual at page 15.

▶ 2.2 System setting change

2.2.1 • Brightness change

To change the brightness of the system, use the command DSY (CD + DSY buttons) on the remote control.

2.2.2 • Automatic display power off

To enable (or disable) the auto-off feature of the display, use the F2 (CD + F2 keys) on the remote control. If this function is activated, the display turns off automatically a second after receiving the last valid command. The display resumes automatically when the player receives a valid command.

▶ 2.3 NORMA IR remote control

The IR remote control contains the commands to access all functions.

Some commands are direct acting dedicated to the CD: STOP, PLAY, PAUSE OPEN / CLOSE, REW, FFW, PREVIOUS, NEXT, REP, TIME.

3 • Maintenance

▶ 3.1 Cleaning

Before cleaning the unit turn it off, unplug it from the mains and wait at least 10 minutes. Your device has been designed with the best technical solutions combined with an aesthetic finish of the highest quality, but for it to remain unchanged over time, it is essential to observe the following precautions:

- Don't dry-clean surfaces and in particular the front panel;
- Lightly dampen the cloth with a small amount of warm water (40-50 degrees);
- Make circular movements and do not press hard on the panel;
- Dry off gently, always with cotton or a soft cloth, making a very delicate circular motion;
- Be very careful to avoid that water penetrates into, the cloth should be moist but not wet;
- Do not reconnect the unit until it is completely dry;
- Under no circumstances use alcohol, solvents, gasoline or any type of chemical product;
- Please note that the finish and aesthetic components are in no way covered by the warranty.

▶ 3.2 Repairs

For any inconvenience refer to the safety manual. The products are the result of precision engineering with sophisticated circuitry and extreme components. Therefore require, in case of failure, of a highly qualified assistance that has absolutely original spare parts. The manufacturer is available to clients for any problem. NORMA is not responsible for any errors, omissions or incompleteness of this manual, as it is not responsible for accidents or damages of any kind that may result from non-compliance, even partial, of the information provided in this manual. Despite the effort to identify all possible danger situations, NORMA is not responsible for any damage that may be caused to people or from improper use.

DAC function

REVO-DAC1

4 • Introduction

This manual describes the functions of the digital input provided by default on this unit.

▶ 4.1 Inputs

This board adds 5 digital inputs (named from 1 to 5).

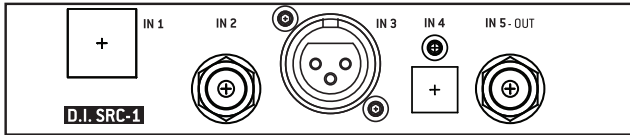


Fig. DAC 1

DAC board

- Input 1** • USB Input;
- Input 2** • SPDIF RCA Input;
- Input 3** • AES-EBU balanced XLR input;
- Input 4** • SPDIF TOSLINK optical input;
- Input 5** • SPDIF RCA input.

▶ 4.2 USB & driver

This USB input must be connected to a personal computer which sees the USB interface as an audio output device. You can not connect it directly to USB memory devices, such as Hard Disks or memory sticks.

The USB input is based on AMANAERO technology. For further information about installation, in order to obtain the appropriate driver for your computer, or for computer configuration, you could visit the AMANERO official website: <http://www.amanero.com> .

▲ Warning:
Never connect or disconnect cables when the unit is turned ON.
This may cause dangerous interference to the speakers or other audio components.
Never disconnect the USB cable without having properly disabled the USB device.

5 • Operations

This unit can be controlled both by the front panel and via IR remote control. Some commands, on the IR remote, are dedicated specifically for this purpose, so it is convenient to use the IR remote control whenever possible. However, even using the buttons on the front panel you can control all functions.

▶ 5.1 Entering DAC mode

5.1.1 • Front panel commands

How to enter end exit DAC mode by front panel commands:

Press STOP button for more than one second until the display shows the following message (the shown number indicates the last used input, if resume function is not enabled it shows the first input by default):



5.1.2 • Remote control commands

How to enter end exit DAC mode by remote control:

Press DAC button on the remote control for more than one second. The display will show this message:



▶ 5.2 DAC input selection

5.2.1 • Front panel commands

How to select DAC input by front panel commands:

In DAC mode, press the STOP button for a short time, after that select the INPUT number by NEXT / PREVIOUS buttons, then, confirm pressing PLAY to select the desired input number. The shown number corresponds to the selected input (for example if you want to select IN 3). The display will show this message:



5.2.2 • Remote control commands

How to select DAC input by remote control commands:

In DAC mode Press DAC button on the remote control, then press the IN button, select the desired input using the SEL + / SEL - keys or dialing it using the numeric keypad. The display will show this message (for example if you want to select IN 3):



And press OK to confirm.

This will bring you back to the main menu. The desired input is now selected and the device is ready to receive the signal input.

6 • Configurations

► 5.3 DAC input configuration

Each input can be configured separately and, if the resume function is active, this configuration will be maintained.

5.3.1 • Front panel commands

How to change DAC configuration by front panel commands:

In DAC mode press the PLAY button for a short time, then select the input of which you want to change the configuration pressing PREVIOUS / NEXT.

After that press PLAY to confirm.

Now you can cycle through the following configurations using PREVIOUS / NEXT buttons.

5.3.2 • Remote control commands

How to change DAC configuration by remote control commands:

In DAC mode Press DAC button on the remote control, then press the SET button, select the input of which you want to change the configuration using the SEL + / SEL - keys or dialing it using the numeric keypad.

Press OK to confirm.

Now you can cycle through the following configurations using SEL + / SEL - buttons.

► 5.4 DAC digital volume mode (legacy function, only for old devices)

5.4.1 • Front panel commands

How to set digital volume by front panel commands:

Only in DAC mode, press the button PAUSE, after select the volume by NEXT / PREVIOUS

To exit the menu and selection by OPEN / CLOSE or by PAUSE.

5.4.2 • Remote control commands

How to set digital volume by remote control commands:

In DAC or CD mode, press the button D.V. (VOL DIGITAL), after select the volume by SEL + / SEL -

To exit the menu and selection by CLR or by D.V.

🔍 *Note:*

On IR31 CD and IR43 remote controls this function isn't present.

► 6.1 DAC input configuration: Parameters summary table

Message	Function	Possible choice
F5rC	UpSampler	OFF / 44.1 / 88.2 / 176.4 / 48.0 / 96.0 / 192.0 KHZ. / AUTO
CL5r	Clock source	IN / LOCAL
drdn	Direct down	OFF / ON
Fdi 9	Digital filter	SLOW / SHARP
FAnA	Analog filter	0 / 1
dEE n	De-Emphasis control	OFF / ON / AUTO
POLA	DAC polarity	0 / 180
dEFA	Default parameters	NO / ON

Tab. DAC 1

DAC input configuration

► 6.2 Upsampling Frequency Setting

If you want to select the UpSampling frequency value follow the instruction below:

- In SPDIF input, with Clock Source in IN (Input) mode, will be possible to use only the x1, x2, x4 value of input frequency. If you select different values, the system automatically sets the closest frequency value. If you want to select other value, you can use Clock Source in LOCAL mode.

- In AUTO mode, the system automatically sets the frequency value to 176.4 KHz for 44.1/88.2/176.4 KHz input values or 192.0 KHz for 48.0/96.0/192.0 KHz input values.

► 6.3 Clock source setting

When UpSampler mode is active, you can select the D / A conversion clock source .

In IN (Input) mode, the DAC uses the clock from the input signal.

In LOCAL mode, the DAC uses the clock generated by the local oscillator.

We recommend to do some listening tests to determine what is the best solution.

The clock unit is generated by high quality oscillators. But the input signal clock quality may be better than the local one, and may improve the audio performance.

► 6.4 Direct down SRC setting

When Upsampler mode is active, you can select the direct down mode.

Refer to page 69 of SRC4392 data sheet:

*"... Decimation Filter / Direct Down-Sampling Function
This bit selects the mode of the decimation function, either true decimation filter or direct down-sampling without filtering. Direct down-sampling should only be used when the output sampling rate is higher than the input sampling rate. When the output sampling rate is equal to or lower than the input sampling rate, the Decimation Filter must be used in order to avoid aliasing..."*

🔍 **Note:**

Remember, if you select the Direct Down mode and the output sampling rate is equal to or lower than the input sampling rate, the system automatically switches in Direct Down = OFF.

► 6.5 Digital filter setting

You can select the digital filter in the two modes, SLOW or SHARP:

- In SLOW mode, the response of the filter provides the best performance and linearity for time response;
- In SHARP mode, the response of the filter provides the best performance and linearity for frequency response.

➔ For more information, please refer to the DF1706 data sheet, p.4.

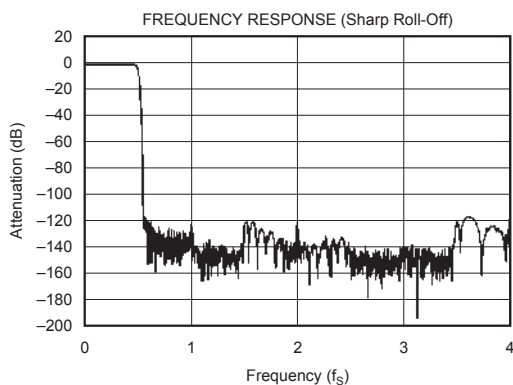


Fig. DAC 2 Frequency response sharp roll-off

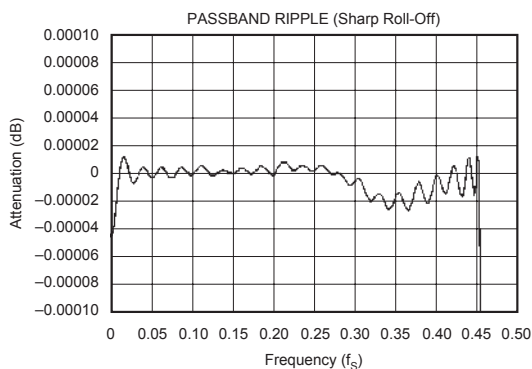


Fig. DAC 3 Passband ripple sharp roll-off

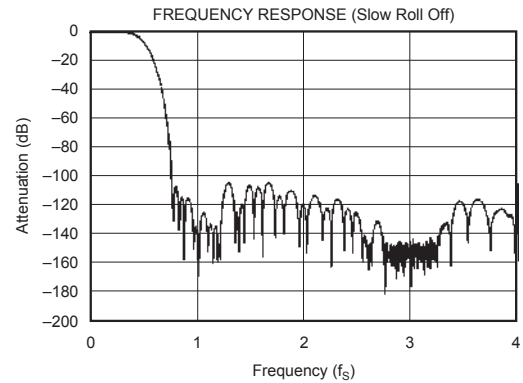


Fig. DAC 4 Frequency response slow roll off

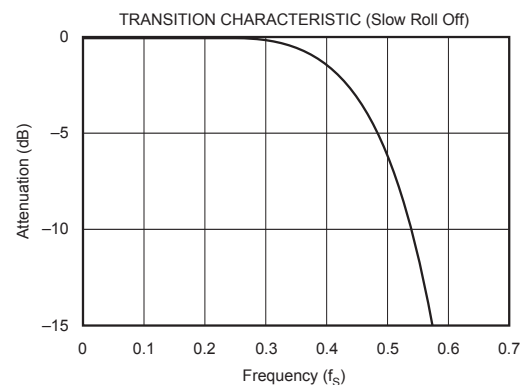


Fig. DAC 5 Transition characteristic slow roll off

► 6.6 Analog filter setting

This parameter is not applicable in this unit.

► 6.7 DeEmphasis Control Setting

This parameter is used to set the operation of de-emphasis.

In OFF mode the de-emphasis is always OFF.

In ON mode to de-emphasis is always ON if the input frequency is 44.1 KHz or 48.0 KHz.

In AUTO mode, the de-emphasis is enabled automatically by the system when it detects the presence on the SPDIF signal.

The de-emphasis is indicated by a "E" FLAG in the display. When it flashes, the de-emphasis is detected in the input signal but NOT activated. When lit, the de-emphasis is active.

🔍 **Note:**

The procedure for emphasis / de-emphasis is not very common and has been used mainly in CD's made in the 80's. However, we must consider that many burns software, and many PC recording drives does not manage de-emphasis information.

If a digital audio track sounds a bit too rich in high frequencies, maybe because the emphasis flag was lost during the copy of the track, you can manually enable de-emphasis.

7 • Tree menu

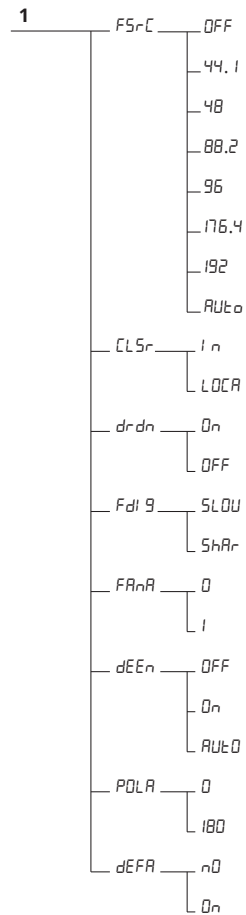
▶ 6.8 DAC Polarity setting

This parameter is used to set the values of the output polarity.

▶ 6.9 Default load setting

It is possible to automatically restore the default parameters.

- $F5rC = OFF$
- $CL5r = In$
- $drdn = OFF$
- $Fdi9 = SLOW$
- $dEEn = OFF$




On	On, function enabled
OFF	Off, function disabled
$Auto$	Automatic setting
$F5rC$	SRC sampling frequency
$CL5r$	Clock Source
In	Clock from the input source
$LDCR$	Clock from the local generator
$drdn$	Direct Down
$Fdi9$	Digital Filter
$FRnR$	Analog Filter
$dEEn$	De-emphasys
$POLA$	Polarity
$dEFA$	Default
$SLOW$	Slow digital filter
$SHAR$	Sharp digital filter

8 • Specifications

REVO-DAC1

Description	DAC with digital input;
Input Connections	5 Digital input;
Output Connections	1 RCA, 1 XLR;
Output Signal Impedance	200 Ω ;
Max Output Voltage RCA	3.0 V RMS (0 dB);
Max Output Voltage XLR	6.0 V RMS (0 dB);
Frequency Response	0 - 22 kHz;
Analogue Stage Frequency Response	0 - 2 MHz (- 3 dB non filtered);
Output Stage	Proprietary topology with discrete components, high linearity and low noise;
I/V Conversion	Discrete components;
Possible Optionals for this unit	DAC Board;
USB Receiver Interface	USB 2.0 HI-Speed;
USB Firmware	Amanero;
Audio format	PCM: Max 192 kHz;
DAC Board Connections	2 S-PDIF RCA 75 Ω , 1 AES-EBU XLR 110 Ω , 1 S-PDIF TOSLINK, 1 B-Type USB;
S-PDIF Output	IN 5 configurable as Out;
Digital Filter	BB DF1706;
Oversampling Filter	1x, 2x, 4x;
Oversampling	BB SRC4392
Supported Sampling Frequencies	PCM: 44,1 / 88,2 / 176,4 kHz, PCM: 48 / 96 / 192 kHz;
UpSampler Frequencies	44,1 / 88,2 / 176,4 kHz, 48 / 96 / 192 kHz, AUTO;
Clock performances	± 2 ppm typ at 25°C, ± 10 ppm typ at 60°C;
De-emphasis	44,1 / 48 kHz;
DAC Device (IC)	2x BB PCM1704;
Analog Output Filter	0 - 180 kHz ± 3 dB;
Power Supply Voltage	230 V (115 V in some countries);
Power Supply Frequency	50 Hz (60 Hz in some countries);
Power Supply Fuse Rating	1.6 AT;
Electric transformer/s	1 toroidal transformer for audio applications, 150 VA;
Dimensions (HxWxD) [mm]	90x440x360;
Carton Box Size (HxWxD) [mm]	220x550x450;
Weight [Kg]	10.5Kg.

 In order to improve its products, NORMA reserves the right to change technical specifications and appearance without notice.

Remote controls

REVO-DAC1

9 • Aluminium remote RC-43 / 31

🔍 Note:

For further information regarding the use and the maintenance of this remote, please visit our website at www.normaudio.com

▶ 9.1 Inserting the batteries

- Our IR remotes are provided with included batteries but not fitted in to prevent the discharging due to an eventual stocking time or if a button were pushed during the transport. This remote works only with a set of three CD2032 batteries, as provided in the packaging. Do not use any other type of battery, as this could result in damage for the unit;

- First of all, to access the battery compartment, you will have to remove the back panel. In order to do so, pick the screwdriver provided in the packaging, unscrew the screws, and then remove the back panel;

- Be careful not to scratch the panel with the screwdriver;

- The positive battery pole must be in the upper side and the negative one is on the lower side;

▲ Caution:

- Please respect the polarity;

- The fork spring on the side is designed to hold down the battery, so don't push that down, the remote control won't work;

- Pay attention because that spring is very delicate and it's easy to push that under the battery;

- To insert the battery put the positive pole under the fork and then push the battery in the holder.

DO NOT force the batteries when inserting.

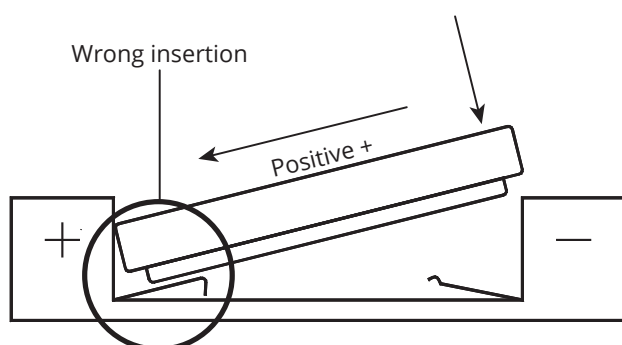
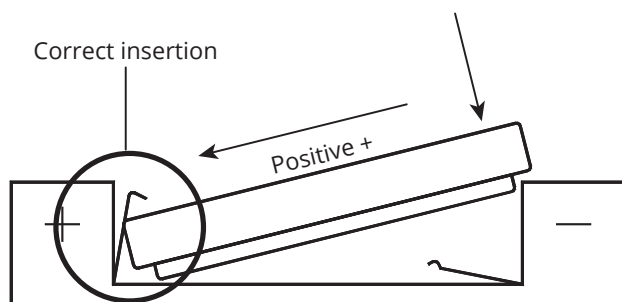


Fig. IR 1

Inserting the batteries

▶ 9.2 Removing the batteries

- If the unit is left unused for long periods of time, it is better to remove the batteries, to avoid their discharge and possible damages to the unit;

- To remove the batteries, access the battery compartment as explained in the previous paragraph. Then, pick the appropriate tool from the packaging, as shown in FIG. IR 2, and gently insert it on one side of the battery holder. Then, apply a slight pressure, in order to allow the battery to come out. Repeat this operation for all batteries, then screw the back panel on again;

- Do not try to extract the battery with hands, this could cause serious damage to the battery holder and to the unit. Use the provided thumbtack as shown on the FIG. IR 2.

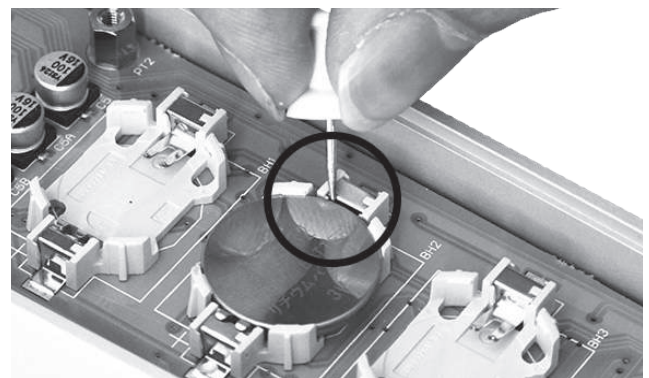


Fig. IR 2

Removing batteries detail

▶ 9.3 Troubleshooting

If the remote control doesn't work, often it's an apparent fault and it could be due to:

- Wrong battery insertion. (positive and negative poles swapped) check it carefully;

- Positive terminal pushed down: if the battery has been inserted badly the positive fork spring could have been pushed down so the battery doesn't make the contact and the remote control doesn't work;

- Mode not selected (ex. DIG-AMP-CD). Press the corresponding button to select the desired mode and then try to send a command to the device.

🔍 Note:

An abnormal functioning of your NORMA device could be due to an IR interference, coming from Plasma TVs, PC monitors or different remote controls.





▶ 9.4 Battery recycling



If you have to replace a discharged battery absolutely do not waste it into the rubbish bin. It's a special waste and it must be given to a recycling center. Batteries and electric components are dangerous for the environment so don't throw them away or with the normal waste.

10 • Remote controls description

▶ 10.1 IR-31 AMP remote control: commands list, general description

<i>Symbol</i>	<i>Command</i>	<i>Description</i>
AMP	MODE	Sets remote control on AMP MODE (for REVO IPA-70B / REVO IPA-140 / REVO SC-2 / HS-IPA1)
DIG	MODE	Sets remote control on DIG MODE (for DACs / HS-DA1 & REVO-DAC1)
	POWER ON-OFF	Turns the unit ON and OFF
MENU	MENU	Enters the menu setup configuration
OK	OK	Confirms the selection in MENU
CLEAR	CLEAR	Moves back to upper level in MENU
▶	NEXT	Moves forwards in MENU (direct Input selection on REVO IPA-70B / REVO IPA-140)
◀	BACK	Moves backwards in MENU (direct Input selection on REVO IPA-70B / REVO IPA-140)
	VOL. UP FAST	FAST volume UP (direct volume UP control on REVO IPA-70B / REVO IPA-140 / REVO SC-2 / HS-IPA1)
	VOL. DOWN FAST	FAST volume DOWN (direct volume DOWN control on REVO IPA-70B / REVO IPA-140 / REVO SC-2 / HS-IPA1)
VOL +	VOL. UP FINE	FINE volume UP
VOL -	VOL. DOWN FINE	FINE volume DOWN
	MUTE	MUTE / UNMUTE the output audio signal
IN	IN	Enters the INPUT SELECTION menu (on REVO SC-2 / HS-IPA1 / HS-DA1)
DAC	DAC	Enters the DAC menu (on REVO SC2+DAC / HS-IPA1+DAC)
1 – 8	NUMBERS (1-8)	Selects a NUMBER (quick inputs selections on REVO IPA-70B / REVO IPA-140)
F1	F1	Generic function, customized for the various devices (phase on DACs)
F2	F2	Generic function, customized for the various devices
A/P	A/P	Toggles active or passive mode (preamplifier REVO SC-2 only)
DY	DY	Changes the display light (customized for various devices) (light 30-100 % ON / OFF)
▶	PLAY	Starts the CD playback (this command is always sent to the REVO CDP+DS-1 in any MODE)
■	STOP	STOP CD playback (this command is always sent to the REVO CDP+DS-1 in any MODE)
▶▶	NEXT	Skips to NEXT track (this command is always sent to the REVO CDP+DS-1 in any MODE)
◀◀	PREVIOUS	Skips to PREVIOUS track (this command is always sent to the REVO CDP+DS-1 in any MODE)

Tab. IR 1





IR-31 AMP general description

🔍 Note:

For a complete description of the meaning and use of the various commands, refer to the user manual of the single model.

This model can be used with two types of products, amplifiers and DACs. To use it with amplifiers, press the **AMP** button before using the remote control to send commands. The remote control remembers this selection until the batteries are full; therefore it is not necessary to press each time. If the **DIG** key is inadvertently pressed, the commands are routed to the DACs. In this case, simply press the **AMP** command again. Similarly, to control the DACs (eg HS-DA1 or REVO-DAC1), press the **DIG** key first.

▶ 10.2 IR-31 AMP remote control: commands list for REVO-DAC1

Symbol	Command	Description
AMP	MODE	Sets remote control on AMP MODE (for REVO IPA-70B / REVO IPA-140 / REVO SC-2 / HS-IPA1)
DIG	MODE	Sets remote control on DIG MODE (for HS-DA1)
	POWER ON-OFF	Turns the unit ON and OFF
MENU	MENU	Enters the menu setup configuration
OK	OK	Confirms the selection in MENU
CLEAR	CLEAR	Moves back to upper level in MENU
▶	NEXT	Moves forwards in MENU
◀	BACK	Moves backwards in MENU
	VOL. UP FAST	FAST volume UP
	VOL. DOWN FAST	FAST volume DOWN
VOL +	VOL. UP FINE	FINE volume UP
VOL -	VOL. DOWN FINE	FINE volume DOWN
	MUTE	MUTE / UNMUTE the output audio signal
IN	IN	Enters the INPUT SELECTION menu
DAC	DAC	Enters the DAC menu configuration
1 – 8	NUMBERS (1-8)	Selects a NUMBER
F1	F1	This command change the phase on the digital audio signal, 0 –180°
F2	F2	Generic function, customized for the various devices
A/P	A/P	Not used in this model
DY	DY	Changes the display light (customized for the various devices) (light 30-100 % ON / OFF) For select display ON / OFF, long press (2s) DY
▶	PLAY	Starts the CD playback (this command is always sent to the REVO CDP+DS-1 in any MODE)
■	STOP	STOP CD playback (this command is always sent to the REVO CDP+DS-1 in any MODE)
▶▶	NEXT	Skips to NEXT track (this command is always sent to the REVO CDP+DS-1 in any MODE)
◀◀	PREVIOUS	Skips to PREVIOUS track (this command is always sent to the REVO CDP+DS-1 in any MODE)

Tab. IR 2

IR-31 AMP for REVO-DAC1

🔍 Note:

For a complete description of the meaning and use of the various commands, refer to the user manual of the single model. Remember to press **DIG** before use.

Shortcut for Input selection mode:

The input selection is possible in two ways, one sequential **(1)** and one direct **(2)**. Remember to press **OK**.

1 • Press **IN**, ▶ or ◀, **OK**;

2 • Press **IN**, **1 – 4** (6 with analog PRE option).

► 10.3 IR-43 system remote control: commands list, general description

If you have 2 or more NORMA products and you want to control them with a single remote control, you can request IR-43 remote control from NORMA.

<i>Symbol</i>	<i>Command</i>	<i>Description</i>
AMP	MODE	Sets remote control on AMP MODE (for REVO IPA-70B / REVO IPA-140 / REVO SC-2 / HS-IPA1)
CD	MODE	Sets remote control on CD MODE (for REVO CDP+DS-1)
DIG	MODE	Sets remote control on DIG MODE (for REVO-DAC1 / HS-DA1)
AUX	MODE	Sets remote control on AUX MODE (spare)
	POWER ON-OFF	Turns the unit ON and OFF
MENU	MENU	Enters the menu setup configuration
OK	OK	Confirms the selection in MENU
CLEAR	CLEAR	Moves back to upper level in MENU
▶	NEXT	Moves forwards in MENU (direct input selection on REVO IPA-70B / REVO IPA-140)
◀	BACK	Moves backwards in MENU (direct input selection on REVO IPA-70B / REVO IPA-140)
	VOL. UP FAST	FAST volume UP (direct volume UP control on REVO IPA-70B / REVO IPA-140 / REVO SC-2 / HS-IPA1)
	VOL. DOWN FAST	FAST volume DOWN (direct volume DOWN control on REVO IPA-70B / REVO IPA-140 / REVO SC-2 / HS-IPA1)
VOL +	VOL. UP FINE	FINE volume UP
VOL -	VOL. DOWN FINE	FINE volume DOWN
	MUTE	MUTE / UNMUTE the output audio signal
IN	IN	Enters the INPUT SELECTION menu (on REVO SC-2 / HS-IPA1 / HS-DA1)
DAC	DAC	Enters the DAC menu (on REVO CDP+DS-1 / REVO SC-2+DAC / HS-DA1 / HS-IPA1+DAC)
0 – 9	NUMBERS (0-9)	Selects a NUMBER (quick inputs selections on REVO IPA-70B / REVO IPA-140) or (track on REVO CDP+DS-1)
F1	F1	Generic function, customized for the various devices (digital phase on REVO CDP+DS-1 & DACs)
F2	F2	Generic function, customized for the various devices
F3	F3	Generic function, customized for the various devices
A/P	A/P	Toggles active or passive mode (preamplifier REVO SC-2 only)
DY	DY	Changes the display light (customized for the various devices) (light 30-100 % ON / OFF)
DV	DV	DIGITAL VOLUME setting, only in REVO CDP+DS-1 in DAC mode with SRC enabled
▶	PLAY	Starts the CD playback (this command is always sent to the REVO CDP+DS-1 in any MODE)
	PAUSE	PAUSE CD playback (this command is always sent to the REVO CDP+DS-1 in any MODE)
■	STOP	STOP CD playback (this command is always sent to the REVO CDP+DS-1 in any MODE)
⏭	NEXT	Skips to NEXT track (this command is always sent to the REVO CDP+DS-1 in any MODE)
⏮	PREVIOUS	Skips to PREVIOUS track (this command is always sent to the REVO CDP+DS-1 in any MODE)
⏩	FAST FORWARD	Fast forwards track (this command is always sent to the REVO CDP+DS-1 in any MODE)
⏪	REWIND	Rewinds track (this command is always sent to the REVO CDP+DS-1 in any MODE)
▲	OPEN / CLOSE	Opens / closes the CD tray (this command is always sent to the REVO CDP+DS-1 in any MODE)
REPEAT	REPEAT	Activates automatic repeat (this command is always sent to the REVO CDP+DS-1 in any MODE)
TIME	TIME	Changes the time indication shown on CD display (elapsed – remaining)

Tab. IR 3

IR-43 general description

🔍 Note:

For a complete description of the meaning and use of the various commands, refer to the user manual of the single model, refer also at IR-31 model. Remember to press correct **MODE** before use.

Warranty

REVO-DAC1

11 • Warranty conditions

We hereby acknowledge to the NORMA product specified below the warranty lasts 2 (two) calendar years from the sale date of this product. The terms which regulates the warranty are written below and they are integral part of this certificate.

► 11.1 Object of warranty

The warranty only covers the product shown on the registration module (also downloadable from NORMA website) which forms an integral part of this document, as well as the accessories related to it, provided that they are purchased at the same time.

► 11.2 Warranty content

- NORMA will, at its option, repair or replace the product covered by this warranty if it becomes defective, malfunctions or otherwise fails to conform with this warranty under normal use and service during the term of this warranty. Without charge for labor or materials. Repairs may be performed using new or refurbished parts that meet or exceed NORMA specifications for new parts;

- Damages and injuries (direct or indirect) of any nature and title, deriving from faults and malfunctioning won't be covered from this warranty. The warranty will cover only the NORMA product repair.

► 11.3 Limited warranty range

- The warranty period starts from the time of purchase. In the event of a deferred payment, the application of the warranty will be guaranteed unless the payment is successfully completed.

In the event that the agreed payment is not respected (amounts and / or expirations), NORMA reserves itself the right to modify, suspend or delete the warranty. In case of deferred payment the warranty expiration could precede the payment expiration;

- The warranty will be valid only after the product registration within the maximum term of 30 calendar days from the purchase date, using the registration module that is an integral part of this document (also downloadable from NORMA website). That module must be compiled in each part and followed by the sales document. The sales document must have fiscal validity (fiscal ticket, invoice or receipt) proving date, place of sale, amount and retailer name. The retailer must stamp at the bottom the registration module. In any case the warranty won't be applied to appliances whose owners have not fulfilled the above formalities;

- NORMA products are very sophisticated, these products must be used and installed only by subjects with adequate knowledge and experience related to the installing and using procedures;

- Warranty void if the user doesn't observe all the indications reported in the relative safety and user manual;

- Warranty will be provided only in NORMA venue. The shipping costs are charged to the customer both outward and return, so as the shipping risks. The eventual insured shipping doesn't constrain NORMA to any type of responsibility related to the shipping risks;

- NORMA products are designed only for personal entertainment, then the warranty covers only the defects due to a private household use and it doesn't cover:

- *Any unit which has been altered or on which the serial number has been defaced, modified or removed;*

- *Normal wear, battery or battery replacement and any periodic maintenance;*

- *Deterioration due to corrosive atmosphere or other external causes such as extremes in temperature or humidity;*

- *Damages attributable to power line surge or related electrical abnormalities, lightning damage or abnormal atmospheric acts as well as phenomena of transmutation of the atom or radiation caused by the artificial acceleration of atomic particles;*

- *RFI / EMI (Interference / noise) caused by improper grounding or the improper use of either certified or uncertified equipment, if applicable;*

- *Interference arising from the use of wireless communication devices (e.g. 2.4 GHz cordless telephones), or other radio frequency emitting products such as microwave ovens, whether such interference impairs the operation of the product or vice-versa. Consult the owner's manual for guidance on set-up procedures for minimizing the risks of interference. Any evidence of alteration, erasing or forgery of proof of purchase documents will cause this warranty to be void. This warranty covers only the original owner and is not transferable.*

Any fault, malfunctioning, direct or indirect damage or partial functioning are not covered by warranty. This product is not designed for particular use. Its application field is limited to play music exclusively at home. The continuous functioning, free from faults and malfunctioning is not guaranteed.

- If during the warranty period NORMA receives the notice of a defect, covered by the NORMA warranty, NORMA will fix or replace the product at its discretion. Any replacement product can be a new or semi-new product, provided that it has at least equivalent functionality to the product that will be replaced. The warranty period will be equal to the warranty period remaining on the original product;

- During the warranty period NORMA will at its sole option and expense, repair or replace any product found

to be defective. In the event that the product is no longer available and cannot be repaired effectively, NORMA at its sole option may replace it with a reasonable equivalent, or refund the original purchase price paid. NORMA won't cover the return shipping cost;

- This limited warranty is applicable only in the country where the product was purchased;
- The warranty is valid also only and exclusively for the first subsequent owner, provided that exists a clear and incontrovertible act which proves the change of ownership and that him registers his own product within 30 days from the purchase date. The warranty cannot be extended to the new owner if the previous one did not fulfill the formalities indicated in point 2 of C section;
- The lasting of the warranty period cannot be interrupted for any reason. The non-use of this product does not interrupt or extend the warranty period.

▶ 11.4 Warranty exclusion

- The warranty does not cover the damages due to whichever wrong transport or wrong handling;
- Wires, connectors, selectors, mechanical commands, potentiometers, fuses and other any part subject to wear are not covered by the warranty;
- External connectors, printed circuits and internal components are not guaranteed against, colour alteration and corrosion;
- In any case the external and internal finish are not covered by warranty;
- For the following countries: U.S.A. (United States of America), Canada and Mexico is absolutely prohibite to commercialize, to direct or indirect import and to use for any reason, even temporarily and occasional. OPAL ELECTRONICS and NORMA cannot be held responsible for any unauthorised use of own products.
The only entity authorized to import and sell the products is the official distributor. The official NORMA local dealer becomes subject to liability for the warranty and all legal aspects that it entails, as well as for the sale and use of the product;
- Do not return your product for repair without prior authorization from NORMA. The repair during the limited warranty period by a person not explicitly authorized by NORMA will void the warranty and will be carried out at your risk.

▶ 11.5 Warranty limits

- Any eventual implied warranties, including warranties of merchantability and fitness for a particular purpose shall be limited in duration to the applicable period of time set forth above. NORMA's liability for any defective product is limited to repair or replacement of the product;
- Until the law-concessed point the remedies provided in this warranty are only remedies for the customer;
- It is excluded each refund as well as any contractual or extra contractual liability for direct or indirect damages to persons or things.

▶ 11.6 Responsibility limits

- NORMA does not guarantee that the use of any its product is continuous or free from any error or free from any type of fault;
- Under no circumstances and in no case will NORMA be liable for any accidents, consequential damages, liability, arising from the owner or user due to the failure or inappropriate use of the product;
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