

EN USER MANUAL
ES MANUAL DE INSTRUCCIONES
FR NOTICE D'UTILISATION
DE BEDIENUNGSANLEITUNG

CA40

wecler

1. IMPORTANT NOTE	04
1.1. Compliance with international standards	04
2. INTRODUCTION	04
3. INSTALLATION	05
3.1. Location and assembly	05
3.2. Mains connection	05
3.3. Audio input connections	05
3.4. Audio output connections	06
3.5. Remote control options	06
4. OPERATION AND USAGE	07
4.1. Operation and default mode	07
4.2. Special active source selection mode and setting adjustments	08
4.3. AUTO STANDBY Function	09
4.4. LED indicators	09
4.5. Micro switches on the rear panel	10
4.6. Lock mode	11
4.7. Restore default settings and update firmware	11
5. CLEANING	11
6. LIST OF FUNCTIONS	12
7. DIAGRAM OF FUNCTIONS	13
8. TECHNICAL CHARACTERISTICS	50
9. BLOCK DIAGRAM	51
10. CONFIGURATION DIAGRAM	52

All numbers subject to variation due to production tolerances. ECLER S.A reserves the right to make changes or improvements in manufacturing or design which may affect specifications.



1. IMPORTANT NOTE

Congratulations! You have acquired the result of painstaking design and manufacturing. Thank you for having chosen our CA40 micro amplifier.

In order to get the optimum operation and efficiency from your product, it is VERY IMPORTANT - before you plug anything - to read this manual very carefully and take seriously into account all considerations specified within it.

We strongly recommend that its maintenance be carried out by our Authorised Technical Services.

1.1. Compliance with international standards

The CA40 micro amplifier complies with the following international standards:

- EN55103-1 *Electromagnetic Compatibility.*
Product family standard for audio, video, audio-visual and entertainment lighting control apparatus for professional use
Part 1: Emission
- EN55103-2 *Electromagnetic Compatibility.*
Product family standard for audio, video, audio-visual and entertainment lighting control apparatus for professional use
Part 2: Immunity
- EN60065 *Audio, video and similar electronic apparatus. Safety requirements*
Complying with the requirements of directives 73/23/EC and 2004/108/EC

2. INTRODUCTION

The CA40 is a very small stereo amplifier with numerous remotely controlled functions (RS-232 serial port, infrared receiver, 0-10 VDC remote control port), and is ideal for integrating audiovisual applications with other devices: educational classes, meeting rooms and multimedia presentations, business premises, etc.

Main characteristics:

- 2 x 20 W RMS @ 4 amplifier Ω
- Universal external power source
- AUTO STANDBY function: in the absence of an audio signal the unit automatically goes into *STANDBY* mode, minimising power consumption
- Lightweight, silent, high-performance amplifier (fan-free convection cooling)
- Suitable for stereo, parallel, and bridged mono operation
- 1 balanced microphone input, with high quality preamplifier, *Phantom* power supply, noise gate and "talkover" function or priority over the rest of the input
- 2 stereo lines (not balanced)
- 2-band independent tone control (Bass, Treble) for the microphone in-jack and 1&2 line-in connection.
- Auxiliary output for liaison with other amplifiers or external audio devices
- Local control by digital rotary knob ("encoder")
- Remote control by infrared remote control
- Remote control by WPmVOL or WPmVOL-SR (0-10 VDC) wall panel
- RS-232 control port
- MUTE port to silence the entire unit by closing external contact

3. INSTALLATION

3.1. Location and assembly

The CA40 is suitable for installation on a wall or under a surface (table, shelf, cupboard, etc.), thanks to its design and layout of its connectors, controls and LED indicator lights.

3.2. Mains connection

The amplifier is powered by alternating current through its external power source: 100-240 VAC and 50-60 Hz.

This apparatus must be earthed through its mains cable (earth resistance, $R_g = 30 \Omega$, or lower). The atmosphere should be as dry and dust free as possible. Do not expose the unit to rain or water splashes. Do not place liquid containers or incandescent objects like candles on top of the unit.



Should any work or connection / disconnection task be done, always disconnect the unit from the mains supply. There are no elements that can be manipulated by the user inside the amplifier.

To avoid buzzing, do not allow the power cable to intertwine with the shielded cables that transport the audio signal.

3.3. Audio input connections

The CA40 accepts two types of signals in its input channels:

- **Microphone (MIC):** has a balanced Euroblock or jack type connection, ready to accept a signal level between -20dBV y -50dBV, with adjustable sensitivity with the ADJ control

NOTE: the microphone input has a phantom power supply to power condenser microphones, activated by internal bridge (see section **10. CONFIGURATION DIAGRAM**).

- **Line signals (LINE 1, LINE 2):** they have unbalanced minijack or double RCA type stereo connections. They are prepared for input of between -6dBV and 0dBV, with input sensitivity that can be adjusted by internal port (see section **10. CONFIGURATION DIAGRAM**). You can connect signals from CD players, radio tuners, mixing consoles, media players, the audio outputs of PCs and tablets, etc. to these connections.

NOTE: Turntables CANNOT BE CONNECTED directly to this device because none of the inputs have an RIAA preamp.

The CA40 has the following operating modes according to the input sources selected as active:

- **LINE 1:** only LINE 1 input is sent to the mix bus to be amplified and delivered to the L and R OUT outputs
- **LINE 2:** only LINE 2 is sent to the mix bus to be amplified and delivered to the L and R OUT outputs
- **MIC:** only microphone (MIC) input is sent to the mix bus to be amplified and delivered to the OUT L and R outputs

- **LINE 1 + MIC:** the LINE 1 and MIC inputs are mixed, amplified and delivered to the L and R OUT outputs. If the TALKOVER function is active, the microphone signal attenuates to that of the line when it exceeds the activation threshold
- **LINE 2 + MIC:** the LINE 2 and MIC inputs are mixed, amplified and delivered to the L and R OUT outputs. If the TALKOVER function is active, the microphone signal attenuates to that of the line when it exceeds the activation threshold

Select one of the 5 work modes in special selection mode with the rotating knob on the front (see section 4.2. **Special selection mode of active sources and adjusting settings** for details of the full procedure).

3.4. Audio output connections

The amplified output (**OUT L** and **R**) have Euroblock connectors.

The connection cable that connects the CA40 connectors and the speakers should be good quality, with a suitable cross section and as short as possible.

The outputs can operate in stereo mode, mono (same signal L+R and both channels) or bridge (signal L+R amplified by both channels linked as one). These are selected using the micro switches **STEREO-BRIDGE-MONO** on the rear panel (see section 7. **DIAGRAM OF FUNCTIONS** for more information).

In bridge mode, the output signal connection is made through the positive terminals of each of the L and R connectors, the positive terminal corresponding to the L channel of bridge.

Remember that the minimum work impedance for the amplifiers in mono or stereo mode is 4Ω , and when working in bridge mode it is 8Ω . For correct operation of the CA40, under no circumstances must you work with impedances lower than those specified above.

Attention: in bridge mode only the terminals indicated on the serigraph on the equipment must be used for connecting the speakers.

Additionally, the CA40 has an unamplified auxiliary output (**AUX OUT**) which makes it possible to connect it to amplifiers or with other external devices. The auxiliary output **AUX OUT** has a line level signal (0dBV) which is an unamplified replica of the signal delivered to the terminals **OUTPUT L y R**.

3.5. Remote control options

- **REMOTE** port: the RJ-45 **REMOTE** type connector allows the connection of a WPmVOL or WPmVOL-SR (control 0-10 VDC) wall control panel to adjust the general output volume and/or to select one of the five active work source modes (LINE 1, LINE 2, MIC, LINE 1 + MIC, LINE 2 + MIC). The connection is made by a standard CAT5 cable between the WPmVOL or WPmVOL-SR wall panel and the REMOTE CA40 connector.

Because there is a CA40 WPm type control as well as other types of control (front knob, infrared control and serial port control) the most recent adjustments by any of these methods will prevail. For example, if an active source is selected and/or a volume adjustment is made using the WPmVOL-Sr wall panel connected to the **REMOTE** port, and then these settings are adjusted using the front control, the adjustment made with the frontal control will prevail. In this case, when the wall panel position is adjusted again, the CA40 will change to the values indicated, and so on and so forth.

- **MUTE** port: The **MUTE** connector makes it possible to connect a power free contact to totally silence the CA40 if an external device works on it (example: a emergencies and centralised evacuation warning system).
- **RS-232** port: the serial communication port **RS-232** allows remote management of the CA40 from a computer or external control system supporting this protocol. See the **CA-NET** protocol manual for detailed information on the connection and syntax of the commands supported. The connection has the following specifications:
 - Baud rate: 9600 (fixed, without auto negotiation)
 - Data bits: 8
 - Parity: None
 - Stop bits: 1
 - Flow control: None

WIRING RS-232 – DB9	
RS-232 CA40	DB9
Tx	Pin 2 (RxD)
Rx	Pin 3 (TxD)
Gnd	Pin 5 (Signal Gnd)

- Receiver **IR**: the built-in IR receiver gives general volume control of the CA40 and its **MUTE ON / OFF** function from the **REVO-IR** remote control included with the unit.

4. OPERATION AND USAGE

4.1. Start up and default mode

Start up the CA40 by connecting the equipment to an external power source to which the **DC 24V** connector of the CA40 has already been connected. The LED indicator **ON/STBY** immediately lights up on the front panel. We recommend you turn on all the devices in the following order: sound sources, mixer, equalisers, active filters and processors and, finally power amplifiers. Powering off should be done by following the exact reverse sequence. Following this order, the introduced noise due to turning on or switching off the devices will not affect those further on in the chain and will be inaudible.

The system defaults to volume adjustment mode. In this mode, the **VOL/MUTE** knob on the front panel acts on the general output volume of the CA40. This controller has a maximum of 64 steps between the unit's minimum and maximum volume. When turned, it will adjust the volume while the LED **LEVEL** light is flashing. When the controller is turned to the left or to the right, this flashes while the output volume increases or decreases. The light stops flashing when it reaches either end of the scale and it is no longer possible to increase or decrease the volume of the unit.

Quickly press the **VOL/MUTE** controller to activate/deactivate the mute function of the unit (MUTE ON/OFF). The **MUTE** LED lits when the mute function is activated.

If you adjust the volume using the infrared remote control, the LED **LEVEL** y **MUTE** visual indicators are exactly the same as those seen when adjusting these with the knobs on the front panel.

4.2. Special active source selection mode and setting adjustments

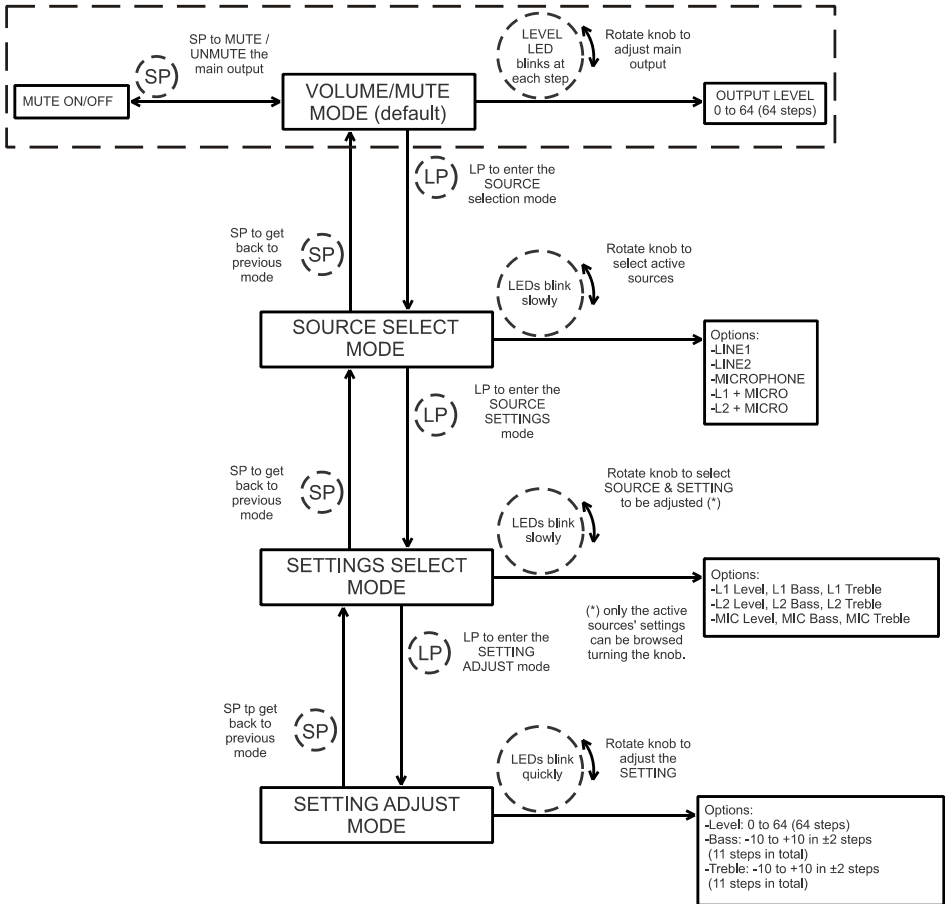
Use the knob on the front panel to access special modes for selecting active sources and adjusting levels and equalization (bass and treble). You can access these modes by holding in the knob for a certain time and then turning it. By adjusting the level of each source you can mix the signal from the microphone and another line, and the result of this mix will be controlled by the general output volume of the unit together, in other words, respecting the levels of each source.

The full procedure for accessing and operating in these special modes and the options available in each are set out in the following graph:

CA40 adjustments with front knob browser

SP: Short Press (press the VOL/MUTE knob briefly, less than 0,5 s)

LP: Long Press (press & hold the VOL/MUTE knob more than 2,5 s)



Notes:

1. If the device is in special mode for 10 seconds and the front knob is not touched, the equipment automatically reverts to VOL/MUTE mode.
2. In tone control mode, when you turn the knob in either direction it flashes fast while the gain of the affected tone increases. When either end of the scale is reached (-10 ó +10dB) or when it goes through the centre point (0dB) it flashes more slowly.

4.3. AUTO STANDBY Function

The **AUTO STANDBY** function (idle or low consumption mode) means you can install the CA40 in inaccessible places and leave the device connected to the mains power supply indefinitely because when no signal is detected, it automatically goes into standby mode, saving energy.

To enable **AUTO STANDBY** use the micro switch with the same name on the rear panel of the unit (see section 7. **DIAGRAM OF FUNCTIONS**). When activated, if there is no audio signal in any of the inputs (or the signal is very weak, below the activation threshold), the CA40 automatically goes into STANDBY mode, and the **ON/STBY** on the front panel of the device goes orange. When a valid audio signal is detected in any of the inputs, the CA40 leaves standby mode and starts operating normally again and the **ON/STBY** LED goes green.

When you enable **AUTO STANDBY** mode with the micro switch (position **ON**) one of two things happens:

- a) There is NO audio signal in the inputs. Result: the amplifier immediately goes into AUTO STANDBY mode
- b) There is an audio signal in the inputs. Result: the amplifier stays active

When the amplifier goes into **AUTO STANDBY** mode, all the LED indicators go out with the exception of **ON/STBY**. If the amplifier is in STANDBY mode and you turn the **VOL/MUTE** knob to adjust the volume or activate the MUTE function, the LED lights will come on for a short time then go out again. Remember that the first acting on the VOL/MUTE knob, this will only reset the LED indicators, and will not change any of the settings.

When the unit is in a special mode (source selection or setting adjustment) the LED indicators will not go out even if the amplifier is in **AUTO STANDBY** mode.

4.4. LED indicators

- **SP**: The signal presence or **SP** LED indicator shows that there is a signal in the amplifier input. This lights up when the input level reaches the established detection threshold.
- **CLIP**: The saturation or **CLIP** LED indicator comes on when the signal delivered to the speakers is close to the amplifier's clipping or saturation level. Input signals should be set to ensure the **CLIP** (saturation or cut off) indicators never stay on, but that they do so at most to the beat of the lowest sound frequencies. Otherwise the amplified signal will be distorted with low quality and low intelligibility.
- **MUTE**: This lights up when the **MUTE** function is active (silent mode)
- **ON/STBY**: the green light comes on when the equipment is in normal operating mode and it goes orange when it is in standby or low consumption mode (STANDBY).
- **LEVEL**: This flashes when you adjust the general level of the device. It also lights up during special adjustment modes, input levels (see section 4.2. **Special active source selection mode and setting adjustments**)

- **BASS:** This lights up during special adjustment modes bass frequencies (see section 4.2. **Special active source selection mode and setting adjustments**)
- **TREBLE:** This lights up during special adjustment modes, treble frequencies (see section 4.2. **Special active source selection mode and setting adjustments**)
- **LIN 1, LIN 2, MIC:** These light up during special modes, selection of active sources and adjustments (see section 4.2. **Special active source selection mode and setting adjustments**)

4.5. Micro switches on the rear panel

- **REMOTE:** Turn on (ON) the remote control from the WPmVOL or WPmVOL-SR wall panel connected to the REMOTE port.
- **NOISE GATE:** Turn on (ON) or turn off the noise gate function for the microphone input. When this function is active the microphone input is muted whilst there is no signal above the function activation threshold, so the equipment rejects background noise captured by the microphone connected to it.
- **TALKOVER:** (ON) or off according to the priority of the microphone over the line inputs. When the TALKOVER function is on, the microphone signal will attenuate to the line selected (LINE 1 or 2) when the activation threshold set is reached.
- **AUTO STANDBY:** Switch the AUTO STANDBY function on (ON) or off. When the function is on, the CA40 will automatically go into STANDBY or low consumption mode in the absence of audio signals in its inputs.
- **BRIDGE / MONO (y STEREO):** Select the work mode of the amplified outputs of the unit:
 - **BRIDGE y MONO OFF:** Work in stereo mode L / R
 - **BRIDGE ON (and MONO in ON or OFF, indistinctly):** Work in bridge mode, amplifying the L+R signal through both channels together as a single amplifier with joint power.
 - **BRIDGE OFF y MONO ON:** Work in MONO mode, both channels independent and each of them amplifying the L+R signal.

4.6. Lock mode

To switch the CA40 lock mode on or off hold in the VOL/MUTE control for 10 seconds from the VOL/MUTE mode. The LED SETTING indicators will flash 3 times to indicate that lock mode is now on. When in lock mode the device cannot be managed using the VOL/MUTE control (it will flash three times to show that it is in that mode when you turn the knob). This will protect the equipment from unwanted handling until it is restored to normal operation after holding the VOL/MUTE control in for a further 10 seconds (the LED SETTING indicators will flash twice to show that the lock mode is off).

Note: once lock mode is activated it will stay activated even when the equipment is turned off and on again. It will stay in lock mode until the VOL/MUTE control is held in for 10 seconds again.

4.7. Restore default settings and update firmware

If you would like to restore the CA40 to factory settings, follow this procedure:

1. Switch off the equipment then press and hold the knob in.
2. Switch the unit back on without releasing the knob. The MUTE LED indicator will flash.
3. Wait a few seconds and then switch the CA40 off again.
4. The next time you turn it on, the factory settings will be in the memory.

Note: for instructions on how to update the unit's firmware, see the product web page at www.ecler.com, where you will find the update software utility and instructions on how to proceed.

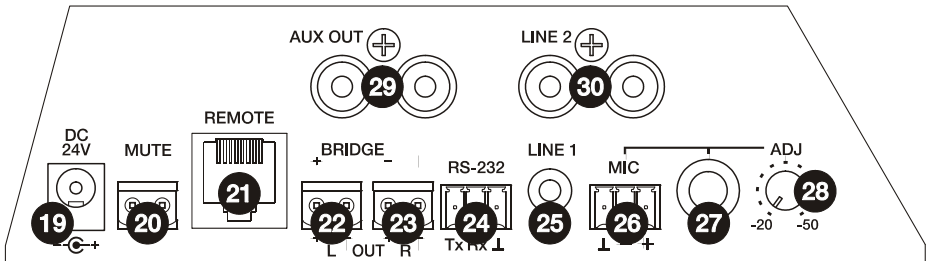
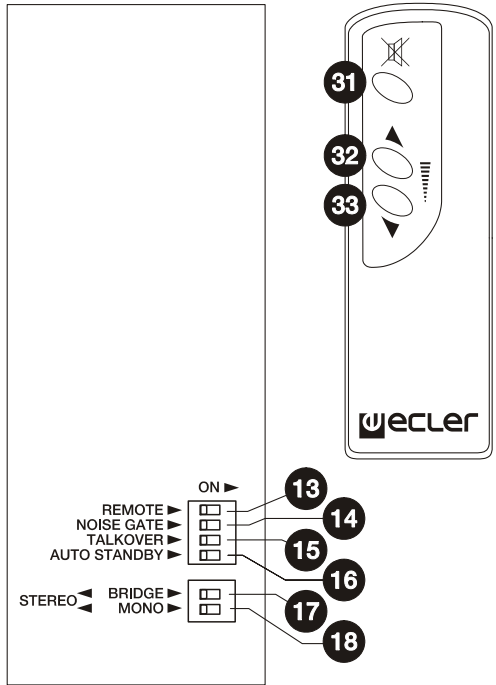
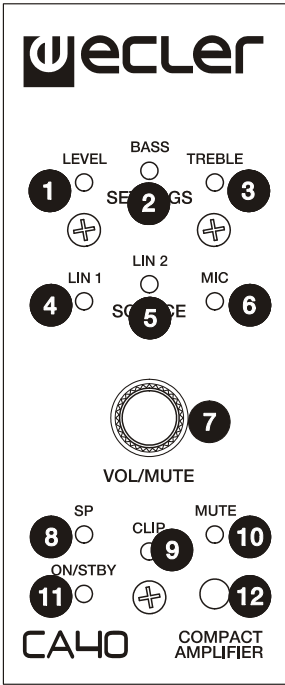
5. CLEANING

The CA40 must not be cleaned with solvents or abrasive substances which may damage the prints. Clean using a cloth moistened in water and a neutral liquid detergent, then dry with a clean cloth. Under no circumstances allow water to enter any of the orifices in the equipment.

6. LIST OF FUNCTIONS

1. LEVEL indicator light
2. BASS indicator light
3. TREBLE indicator light
4. LIN 1 indicator light
5. LIN 2 indicator light
6. MIC indicator light
7. VOL/MUTE knob
8. SP input signal presence indicator light
9. CLIP indicator light
10. MUTE indicator light
11. ON/STBY on or standby indicator light
12. REMOTE, remote control receiver
13. REMOTE micro switch
14. NOISE GATE micro switch
15. TALKOVER micro switch
16. AUTO STANDBY micro switch
17. BRIDGE / STEREO micro switch
18. MONO / STEREO micro switch
19. DC24V power connector
20. MUTE remote control
21. RJ-45, REMOTE connector
22. OUT L amplified output
23. OUT R amplified output
24. Remote control by protocol CA-NET, RS-232
25. Mini jack input line, LINE 1
26. Microphone input, MIC
27. Microphone jack, MIC
28. MIC input sensitivity setting
29. AUX OUT
30. RCA input line, LINE 2
31. Mute key
32. Volume up key
33. Volume down key

7. DIAGRAM OF FUNCTIONS



EN

ES

FR

DE

8. TECHNICAL CHARACTERISTICS 8. CARACTÉRISTIQUES TECHNIQUES

POWER

Frequency response

THD+Noise @ 1kHz Full Pwr. SPKR OUT

THD+Noise AUX OUT

Channel crosstalk @ 1kHz

Inputs Sensitivity nom/Impedance

CMRR

Outputs Level/Minimum Load

Tone control (LINE & MIC)

Signal Noise Ratio

Talkover

Microphone Noise Gate

Phantom voltage

RS-232

ANALOG REMOTE (0-10V. based)

INFRARED REMOTE

Mains (using Meanwell GS60A24-P1J)

Power consumption (pink noise, 1/8 power @ 4ohm)

Power consumption (pink noise, 1/3 power @ 4ohm)

Power consumption Stand By (time 2 minutes)

Dimensions WxDxH

Weight

*Internally selectable **Software selectable

8. CARACTERÍSTICAS TÉCNICAS 8. TECHNISCHE DATEN

STEREO

2x18W@4Ω 1% THD

2x22W@4Ω 10% THD

2x10W@8Ω 1% THD

2x12W@8Ω 10% THD

BRIDGE

1x36W@8Ω 1% THD

1x44W@8Ω 10% THD

20Hz - 50kHz (-3dB)

<0.15%

<0.02%

>55dB

LINE 1

0dBV (-6dBV*)/>8kΩ

LINE 2

0dBV (-6dBV*)/>8kΩ

MIC (BAL)

-20 to -50dBV/>1kΩ

MICRO (BAL)

>65dB @ 1kHz

AUX OUT

-6dBV/10kΩ

BASS

100Hz ±10dB

TREBLE

6KHz ±10dB

LINE

>85dB

MIC (BAL)

>65dB

TIME

2 Sec**

DEPTH

-30dB**

20-30 below max.**

+24VDC/10mA max.*

BAUD RATE

9600 (fixed)

DATA

8 bits

PARITY

NONE

STOP BITS

1

FLOW CTRL

NONE

Volume & Input selection

Volume & Mute

90-264VAC 47-63Hz

21VA/7W

32VA/13W

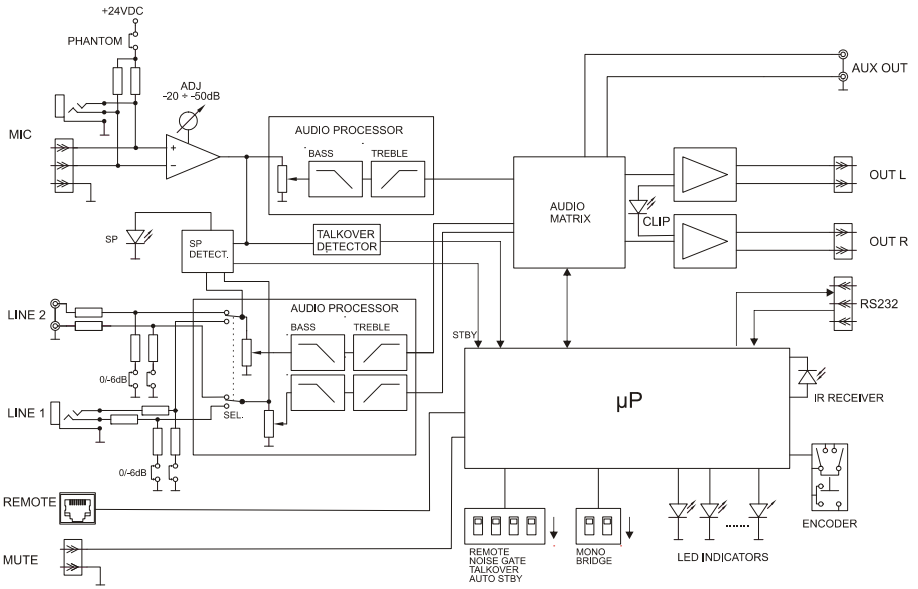
<3W

155x155x45mm

650g

9. BLOCK DIAGRAM
9. SCHÉMA FONCTIONNEL

9. DIAGRAMA DE BLOQUES
9. BLOCKSCHALTBIID



JUMPERS FACTORY ADJUST

Phantom	ON
Sensitivity	0dB

