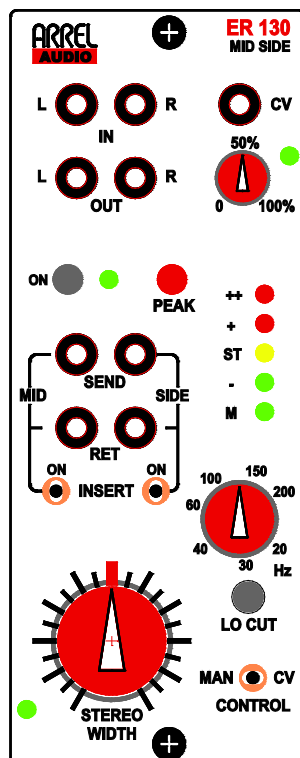




## ER-130 Eurorack Voltage Controlled MID-SIDE Unit



## User Manual

Issue 0.0

## SAFETY INSTRUCTIONS



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Always follow the precautions listed below to avoid any possibility of serious injury or even death from electrical shock, short-circuiting, damages, fire or other hazards. These precautions include, but are not limited to, the following:

- Do not expose the instrument to liquids and rain. Do not use it near water or in damp or wet conditions, or place containers on it containing liquids. If any liquid seeps turn off the power and unplug the power cord from the AC outlet.
- Do not put burning items, such as candles, on the unit. A burning item may fall over and cause a fire.
- This instrument contains no user-serviceable parts. Do not open the instrument or attempt to disassemble or modify the internal circuit.
- Never insert or remove an electric plug with wet hands.
- Check the electric plug periodically and remove any dirt or dust which may have accumulated on it.
- Do not place the power cord near heat sources such as heaters or radiators, and do not excessively bend or otherwise damage the cord, place heavy objects on it, or place it in a position where anyone could walk on, trip over, or roll anything over it.



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Always follow the precautions listed below to avoid any possibility of serious injury or even death from electrical shock, short-circuiting, damages, fire or other hazards. These precautions include, but are not limited to, the following:

- Do not connect the instrument to an electrical outlet using a multiple-connector. Doing so can result in lower sound quality, or possibly cause overheating in the outlet itself.
- When removing the electric plug from the instrument or an outlet, hold the plug itself and not the cord. Pulling by the cord can damage it.
- Remove the electric plug from the outlet when the instrument is not to be used for extended periods of time, or during electrical storms.
- Do not place the instrument in an unstable position where it might accidentally fall over.
- Before moving the instrument, remove all connected cables.
- When setting up the product, make sure that the AC outlet you are using is easily accessible. If some trouble or malfunction occurs, immediately turn off the power switch and disconnect the plug from the outlet. Even when the power switch is turned off, electricity is still flowing to the product at the minimum level.
- When you are not using the product for a long time, make sure to unplug the power cord from the wall AC outlet.
- Use only the stand/rack specified for the instrument. When attaching the stand or rack, use the provided screws only. Failure to do so could cause damage to the internal components or result in the instrument falling over.



### Information for Users on Collection and Disposal of Old Equipment

This special symbol on the products, packaging, and/or accompanying documents means that used electrical and electronic products should not be mixed with general household waste.

For proper treatment, recovery and recycling of old products, please take them to applicable collection points, in accordance with your national legislation and the Directives 2002/96/EC.

By disposing of these products correctly, you will help to save valuable resources and prevent any potential negative effects on human health and the environment which could otherwise arise from inappropriate waste handling.

For more information about collection and recycling of old products, please contact your local municipality, your waste disposal service or the point of sale where you purchased the items.

#### **[For business users in the European Union]**

If you wish to discard electrical and electronic equipment, please contact your dealer or supplier for further information.

#### **[Information on Disposal in other Countries outside the European Union]**

This symbol is only valid in the European Union. If you wish to discard these items, please contact your local authorities or dealer and ask for the correct method of disposal.

## ARREL Audio Contacts

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**ARREL Audio** is continuously working to the improvement of its systems and related documentation.  
In any case, we reserve the right to change the specifications without notice but in the respect to the current legislation.

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**Disclaimer:**

The information contained in this manual has been carefully checked and we believed is accurate at the time of publication.  
In any case, we do not assume any responsibility for inaccuracies, errors or omissions nor any liability for any loss or damage resulting either directly or indirectly from use of the information contained in this manual.

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## INTRODUCTION

**ARREL Audio ER-130 Eurorack Voltage Controlled Mid Side Unit** is the answer to all stream creative needs for EURORACK synthesizers. Its features set it apart from other similar products on the market due to a very high fidelity approach used for the design of the electronics together with the use of high quality components. The internal circuits of the ER-130 have been directly derived from the ARREL Audio professional units in order to obtain maximum sonic performances.

The unit has been designed to comply with the demands of professional musicians. MID/SIDE processing is based on the coding of a stereo signal into two components. The "MID" channel contains the information that appears in both the left and right channels, and the "SIDE" channel contains all the information that differs between the left and right channels.

Once encoded into M/S, these two signals can be "creatively" processed independently, before being decoded back into L and R channels. The M/S technique gives control over the width of the stereo image. The ER-130 is a code/decode /stereo system to be used primarily for Eurorack synths in live and recording applications.

On top of its amazing sound quality, the ER-130 MS unit features a unique set of functions.

1. Manual and CV (Control Voltage mode) switch
2. Control Voltage range [0V, +5V]) but it can accept up 0 +10 V (sensitivity potentiometer)
3. High quality MID-SIDE Matrix
4. Unbalanced in/out
5. True by-pass push-button
6. Stereo width (Side) control with zero detent
7. LO-CUT filter on the SIDE channel with on/off push button
8. Insert on MID and Insert on SIDE (on/off switch)
9. Multicolor stereo depth display
10. Peak indicator (audio out signal)

## Housing

The **ER-130** is contained in a 10 HP Eurorack units and by a depth of about 40 mm. No specific air conditioning is required for the unit, provided that there is a free flow of air through the rack from front to back and the temperature is maintained in the operating range. Consequently the racks may be stacked.

## ER-130 Front Panel Controls and Operations

### MODE SWITCH

Selects manual control of the stereo width or CV mode. In CV mode the control voltage is applied on the corresponding jack. The voltage range can be 0-10 V. The potentiometer below CV jack controls the depth of the action of the CV (Fig.1).

### INPUT L/R CONNECTORS

3.5 mm connectors for the input signal (Fig.1).

### OUTPUT L/R CONNECTORS

3.5 mm connectors for the output signal (Fig. 1).

### CONTROL VOLTAGE (C.V.) CONNECTOR

3.5 mm connector for the Control Voltage (CV). Typical range of [0-5V] but up to +10 V can be applied (Control volt attenuation potentiometer see below). The control voltage will change the side gain in the range defined by the stereo width potentiometer.

#### **NORMAL SET-UP:**

- 1. stereo width potentiometer at maximum (completely turned clockwise)**
- 2. C.V. attenuation potentiometer at 100% (completely turned clockwise)**

**With this set-up the input C.V. to obtain the maximum side gain is +5 V.**

**If you need to accommodate a maximum C.V of 10 V the C.V. attenuation potentiometer must be positioned at 50 %.**

### CONTROL VOLTAGE (C.V.) ATTENUATION POTENTIOMETER

This potentiometer controls the depth of the control voltage action.

### ON SWITCH

Push to activate the MID SIDE (LED ON).

### PEAK LED

Peak led on indicate near saturation of one of the R/L out signals, it starts to work at -3 dB of the maximum out level.

### STEREO WIDTH DISPLAY

Display indicating the depth of the stereo image. Mono led on means a mono image. Stereo led ON means a stereo image. Other leds indicate less than stereo and more than stereo.

### MID AND SIDE INSERTS

3.5 mm jacks for the unbalanced send and return on the MID and SIDE channels, the inserts can be switched on and off by using the switches below the insert section.

### **STEREO WIDTH CONTROL KNOB**

Manual control for the stereo width (zero central detent).

### **LO-CUT PUSH BUTTON**

ON –OFF control for the LO-CUT filter on the MID channel, pressed switch means that the low cut filter is on.

### **LO-CUT CUT OFF FREQUENCY KNOB**

Cut off frequency control for the LO-CUT filter.

APPENDIX A: Front Panel

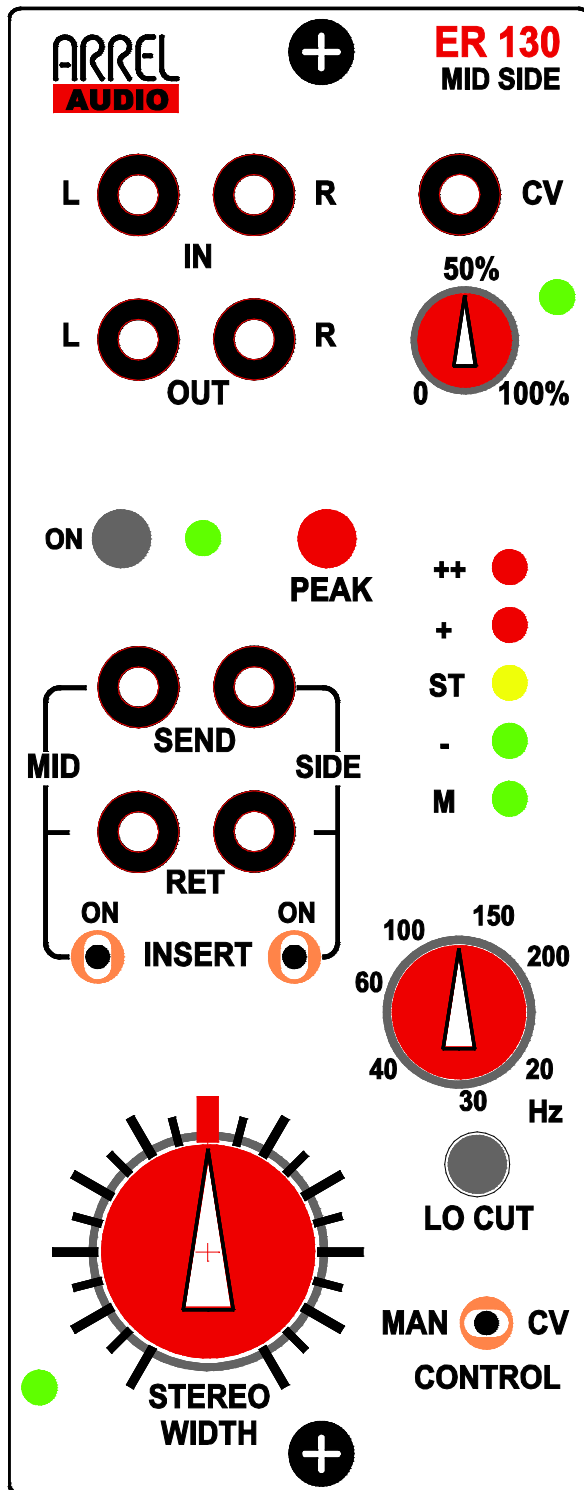


FIG. 1 ER-130 Front Panel



## TECHNICAL SPECIFICATIONS

Number of Channels	Stereo
Power Supply	From the Eurorack power supply unit
Operating Voltage	+/- 12 VDC
Power Consumption	3.5 W
Input	Electronically unbalanced, Level 0 dBu max +20 dBu Impedance 10 K $\Omega$
Output	Stereo, Unbalanced, Output Impedance optimum load impedance $\geq$ 600 ohm )
Bandwidth	5 – 60.000 Hz -1dB, perfect square wave up to 20 KHz
Distortion + Noise	<0.005% ( typical 0.001 %)
Control Voltage (C.V.)	[0, +5V] Can accept up to +12 V (Attenuation potentiometer) 10 Kohm impedance.
Front Panel Controls:	By-pass button Stereo width LO-CUT on off button LO-CUT cut off frequency knob Stereo width control knob Control switch CV modulation depth control
Front Panel Indicators	BY-PASS LED PEAK LED STEREO WIDTH DISPLAY
Front Panel Connectors	2 x 3.5 mm jack for the stereo input , 2 x 3.5 mm jack for the stereo output 2 x 3.5 mm jack for the MID insert 2 x 3.5 mm jack for the SIDE insert 1 x 3.5 mm jack for the CV INPUT
Rear Panel Power Supply Connectors	Eurorack power supply connector
Construction	10 HP
Dimensions	142 mm x 128 mm (w x h)
Weight	500 g