

DB1•P**PASSIVE D.I. BOX**

USER'S MANUAL

PROEL

TECHNOLOGY AS ART



This marking shown on the product or its literature, indicates that it should not be disposed with other household wastes at the end of its working life. To prevent possible harm to the environment or human health from uncontrolled waste disposal, please separate this from other types of wastes and recycle it responsibly to promote the sustainable reuse of material resources. Household users should contact either the retailer where they purchased this product, or their local government office, for details of where and how they can take this item for environmentally safe recycling. Business users should contact their supplier and check the terms and conditions of the purchase contract. This product should not be mixed with other commercial wastes for disposal.

SAFETY AND PRECAUTIONS

- **CAUTION** - Before using this product read carefully the following safety instructions. Take a look of this manual entirely and preserve it for future reference.

When using any electric product, basic precautions should always be taken, including the following:

- To reduce the risk, close supervision is necessary when the product is used near children.
- Protect the apparatus from atmospheric agents and keep it away from water, rain and high humidity places.
- This product should be site away from heat sources such as radiators, lamps and any other device that generate heat.
- Care should be taken so that objects and liquids do not go inside the product.
- The product should be connected to a power supply only of the type described on the operating instructions or as marked on the product.

IN CASE OF FAULT

- In case of fault or maintenance this product should be inspected only by qualified service personnel when:
 - Liquids have spilled inside the product.
 - The product has fallen and been damaged.
 - The product does not appear to operate normally or exhibits a marked change in performance.
- Do not operate on the product, it has no user-serviceable parts inside.
- Refer servicing to an authorized maintenance centre.

CE CONFORMITY

- Proel products comply with directive 89/336/EEC (EMC) and following modifications 92/31/EEC and 93/68/EEC, as stated in EN 55103-1 and EN 55103-2 standards and with directive 73/23/EEC (LVD) and following modifications 93/68/EEC, as stated in EN 60065 standard.

PACKAGING, SHIPPING AND COMPLAINT

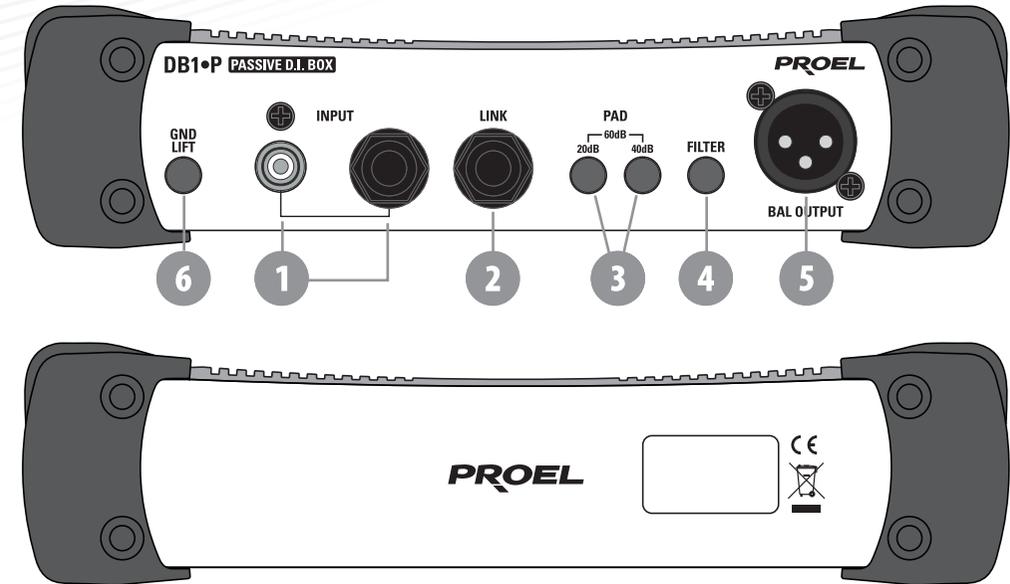
- This unit package has been submitted to ISTA 1A integrity tests. We suggest you control the unit conditions immediately after unpacking it.
- If any damage is found, immediately advise the dealer. Keep all unit packaging parts to allow inspection.
- Proel is not responsible for any damage that occurs during shipment.
- Products are sold "delivered ex warehouse" and shipment is at charge and risk of the buyer.
- Possible damages to unit should be immediately notified to forwarder. Each complaint for manumitted package should be done within eight days from product receipt.

WARRANTY AND PRODUCTS RETURN

- Proel products have operating warranty and comply their specifications, as stated by manufacturer.
- Proel warrants all materials, workmanship and proper operation of this product for a period of two years from the original date of purchase. If any defects are found in the materials or workmanship or if the product fails to function properly during the applicable warranty period, the owner should inform about these defects the dealer or the distributor, providing receipt or invoice of date of purchase and defect detailed description. This warranty does not extend to damage resulting from improper installation, misuse, neglect or abuse. Proel S.p.A. will verify damage on returned units, and when the unit has been properly used and warranty is still valid, then the unit will be replaced or repaired. Proel S.p.A. is not responsible for any "direct damage" or "indirect damage" caused by product defectiveness.

MAINTENANCE AND DISCLAIMER

- Clean only with dry cloth.
- Proel products have been expressly designed for audio application, with signals in audio range (20Hz to 20kHz). Proel has no liability for damages caused in case of lack of maintenance, modifications, improper use or improper installation non-applying safety instructions.
- Proel S.p.A. reserves the right to change these specifications at any time without notice.
- Proel S.p.A. declines any liability for damages to objects or persons caused by lacks of maintenance, improper use, installation not performed with safety precautions and at the state of the art.



INTRODUCTION

The name DI box comes from direct injection box, that means exactly: To inject a signal directly or take an audio signal from the source and send it directly to a mixer console or recorder. Direct boxes perform several important functions: they are designed as impedance matching and signal balancing devices. This means that they take the high impedance of a guitar or keyboard and 'transform' it to the low impedance used in balanced sound systems. Balanced signals inherently cancel noise and, due to their lower impedance, are capable of very long cable runs. Balanced signals are the norm in professional recording, broadcast and live sound. By properly matching the impedance you will enjoy better sound, less noise and an extended frequency response.

DB1-P is a passive direct box with transformer and does not require any external power such as phantom or batteries to work. Just plug-in and play!

The beauty of a transformer is that there is no electrical connection between the primary and the secondary. The signal is 'transformed' from electrical energy to magnetic, then back to electrical; in effect, a 'magnetic bridge'. This provides two huge benefits: with no electrical path, ground loops are eliminated and a tremendous reduction in common-mode noise is possible. The DB1-P features a mic level balanced output XLR male connector and a high impedance (hi-z) jack input. To obtain both these features the transform ratio of DB1-P is 11:1, so DB1-P has an insertion loss of 20 dB without any PAD switch depressed. The moulded sides make stacking of multiple units easier, and help isolate the case of the DI-box from the stage both electrically and mechanically.

CONTROLS AND AUDIO CONNECTION

1. INPUT - (unbalanced JACK or RCA)

Connect the source instrument to this 1/4" jack or rca pin socket to receive the signal. The input impedance depends by PAD setting: 120 Kohm with no pad, 47 Kohm with pad insertion.

2. LINK - (unbalanced JACK)

Connect this 1/4" jack to the input of the backline instrument or monitor amplifier.

NOTE: If you are using a tube amplifier power output (4, 8 or 16 ohm), you must connect always a speaker of matched impedance in parallel, also using the LINK jack on DB1-P; for these connections you have to use always jack-jack power cables avoiding jack-jack signal cables.

3. PAD - (switch)

The pad switches reduce the input signal to the circuit to ensure a clean and distortion-free signal.

Four steps are possible: -20 dB (no pad), -40 dB (left only), -60 dB (right only), -80 dB (both). Always use as little as attenuation as possible to get the best possible signal with reference to the noise floor. The highest attenuations make possible to connect the DB1-P to any amplifier output without saturate the mic input of your mixer desk.

4. FILTER - (switch)

The filter switch insert a gentle filter after 4KHz to simulate the behaviour of a guitar 12" speaker amplifier. This switch has an effect only if one or more PAD switches are pressed.

5. BAL OUTPUT - (male XLR)

This male XLR output connector is the balanced microphone level output of the DI and it is wired with pin-1 ground, pin-2 hot and pin-3 cold.

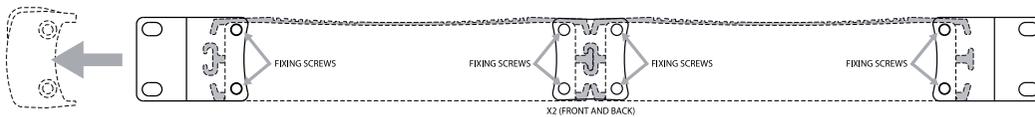
6. GND LIFT - (switch)

Use the GND LIFT switch to either connect the ground pin of input and output or keep them fully separated. Depending on the grounding of the connected devices linking or disconnecting will reduce hum and buzz noises and prevent ground loops.

NOTE: Always make sure the GND LIFT is pressed (no ground link) when connecting to speaker terminals, this prevents accidental short-circuiting of the amplifier output. Also make sure the TIP of the input jack is connected to the red wire and that the metal chassis of the DB1-P has no contact with other equipment.

RACK MOUNTING

Simply removing the two molded sides and attaching two units with the supplied brackets you can mount two by two DI boxes into a standard 19" rack.



SPECIFICATION

System Type	1 channel passive DI		System Performance	
Input Section			Insertion loss	20 dB
Input Impedance	120K Ohm (pad at 0 dB)		CMR	> 100 dB
	47k Ohm (pad at -20/-60 dB)		Phase distortion	0° at 20 Hz, 0° at 20k Hz
	44k Ohm (pad at -40 dB)		Distortion THD 50+20k Hz 0dBu	< 0.007 %
Max Input Level	+15 dBu (pad at 0 dB)		Noise	< -105 dBu unweighted
	+35 dBu (pad at -20 dB)		Frequency Response	10 Hz to 100 kHz, +0dB/-1 dB
	+55 dBu (pad at -40 dB)		Controls	Pad -20, Pad -40, Gnd Lift, Filter (12" emulator)
	+75 dBu (pad at -60 dB)		Indicators	none
Connectors	Two Parallel 1/4" jack connectors and one parallel RCA connector (unbalanced) Jack: Tip Hot / Sleeve Ground		General	
Output Section			Phantom Power	unnecessary
Output	Transformer Balanced (isolated with shielding) into 1K Ohms or greater		External AC/DC adaptor	unnecessary
Max. Output Level	-5 dBu (for 0.1% THD at 50 Hz)		Standalone/Standby	unnecessary
	+5 dBu (for 0.1% THD at 1k Hz)		Current consumption	unnecessary
Connector	XLR male: Pin 2 Hot / Pin 3 Cold / Pin 1 Ground		Dimensions (W x H x D)	215 x 50 x 125 mm
			Weight (excluding batteries)	1 Kg

EXAMPLES

