

# 2x4 SEPARATED 9V POWER BOX PB-2



- User Manual
- Mode d'emploi
- Instrukcja obsługi
- Bedienungsanleitung



Dear Customer!

Thank you for choosing our product.

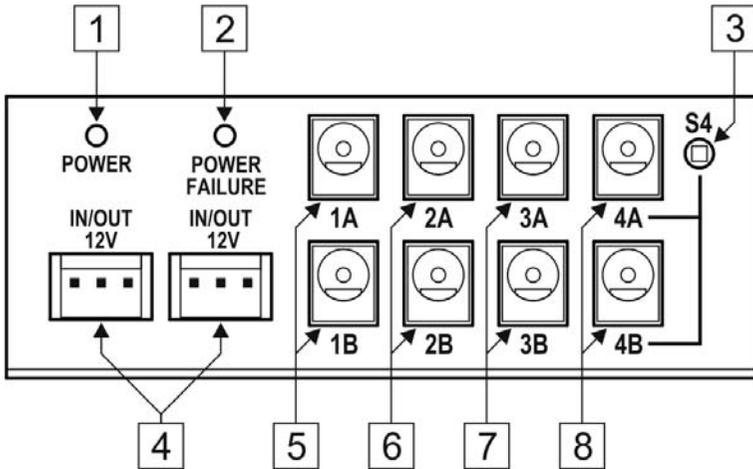
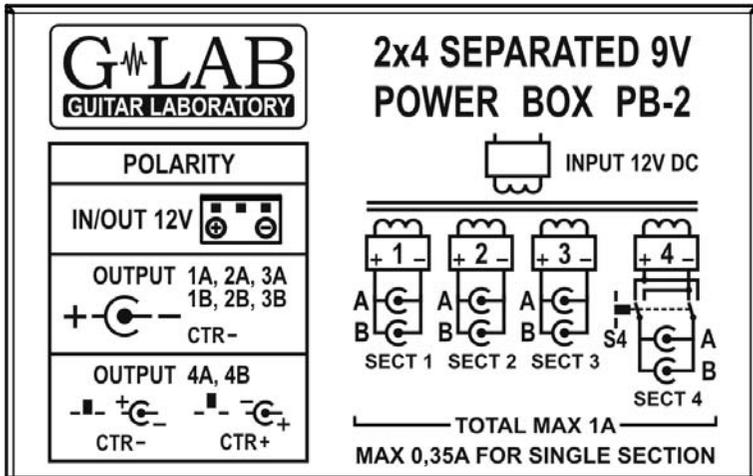
2x4 SEPARATED 9V POWER BOX PB-2 is the functionality extension module for the GSC-5 controller enabling to supply the guitar effects with separated 9V DC. The PB-2 module is supplied from 12V OUTputs located in the foot controller or from the MPM-1 module. The module features eight outputs divided on four fully separated sections (each section posses two parallely connected 9V outputs). Total output current of the 9V outputs is 1A and the total current of the single section is 0,35A. Separation of the sections enables to avoid the ground loops and to achieve the 12V, 15V and 18V DC voltages.

### Package content

PB-2 module	1 pc
12V power supply cable 30 cm	1 pc
12V power supply cable 80 cm	1 pc
9V cable 40 cm	2 pcs
9V cable 80 cm	4 pcs
9V cable 120 cm	2 pcs
Velcro fastener	4 pairs
Heat shrink tube	10 pcs
Labels for cables	30 pcs

### Structure

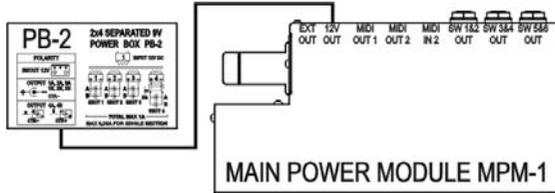




- 1 - 12V POWER supply indicator
- 2 - POWER FAILURE indicator
- 3 - Polarity switch of the outputs 4A and 4B
- 4 - 12V power supply inputs/outputs
- 5 - output 1A and 1B (section No. 1)
- 6 - output 2A and 2B (section No. 2)
- 7 - output 3A and 3B (section No. 3)
- 8 - output 4A and 4B (section No. 4)

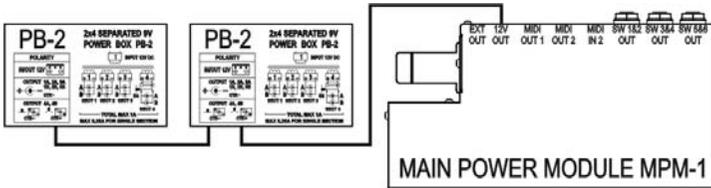
## Connecting the 12V power supply

The GSC-5 features 12V outputs located in the foot controller and in the MPM-1 module. The 12V IN/OUT connector of the PB-2 module should be connected to the 12V OUT with one of the cables supplied with the module.

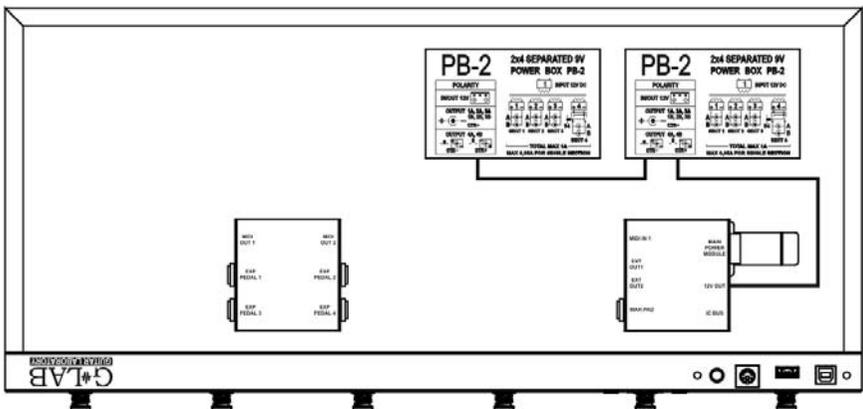


The POWER indicator signalizes the 12V power supply. Lighting of the POWER FAILURE indicator signalizes switching off the voltage on the 9V outputs caused by to low (<11,0V) or to high (>13,0V) power voltage.

Two parallelly connected 12V IN/OUT connectors enable to connect the power supply to another PB-2 module.



There is possible to connect two or three PB-2 modules to the MPM-1 module under condition of not overloading the MPM-1 current (signalized by blinking of the OVERLOAD indicator on its front panel).



In case of connecting two PB-2 modules to the foot controller it is needed to check the voltage in the SETUP >↓> COMPONENTS TESTS function.

The voltage shouldn't be lower than 11,4V. If the voltage in the foot controller drops below the 11,2V the controller will display the information: SUPPLY VOLTAGE TO LOW. In this case it is needed to lower the power consumption of the PB-2 module or modules.

The table below shows the current consumption of the GSC-5 modules. Maximal current is 2,5A (the OVERLOAD indicator signalizes surpassing the 2,5A current).

	12V current consumption	
	min	max
GSC-5 (including MPM-1)	0,5A	0,7A
6LE (for 1 pc.)	0,05A	0,12A
PB-2 @ 0,25A/9V	0,3A	
PB-2 @ 0,5A/9V	0,58A	
PB-2 @ 0,75A/9V	0,83A	
PB-2 @ 1A/9V	1,1A	

Example: GSC-5 + 3 pcs of the 6LE is  $0,7A + 3 \times 0,12A = 1,06A$

PB-2 No. 1 - for 9V 0,75A current consumption 0,83A

PB-2 No. 2 - for 9V 0,5A current consumption 0,58A

Total:  $1,06A + 0,83A + 0,58A = 2,47A$

### Connecting the power supply to the effects

Before connecting the power supply to the effect it is needed to:

- check if the effect should be supplied with DC voltage.  
If so check if it should be 9V
- check if the effect features the CTR – (centre negative) polarization of the power supply connector



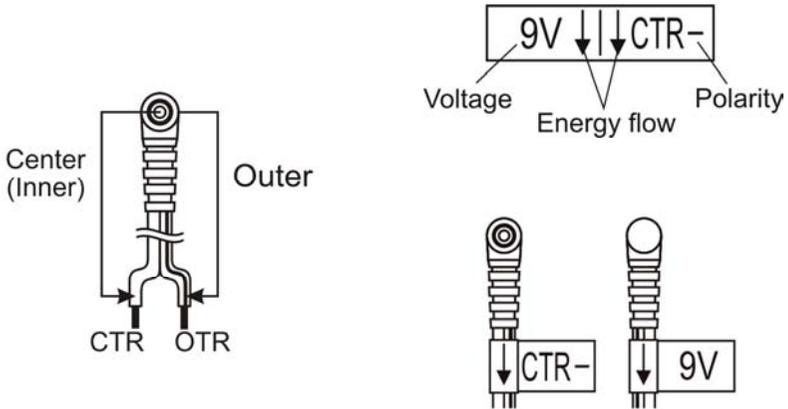
- check required current (if effect can be supplied from 9V battery the current check isn't required)

If there is required the opposite polarity (CTR +) of the power supply connector it is needed to use the output No. 4A or 4B with changed polarity

(diagrams on the box show location of the S4 switch and the polarity). The S4 switch changes the polarity of both (4A and 4B) outputs simultaneously.

**ATTENTION:** Damages caused by improper power supply causes the loss of the warranty. Do not connect the adapter to the effects which need to be supplied from alternating current (AC).

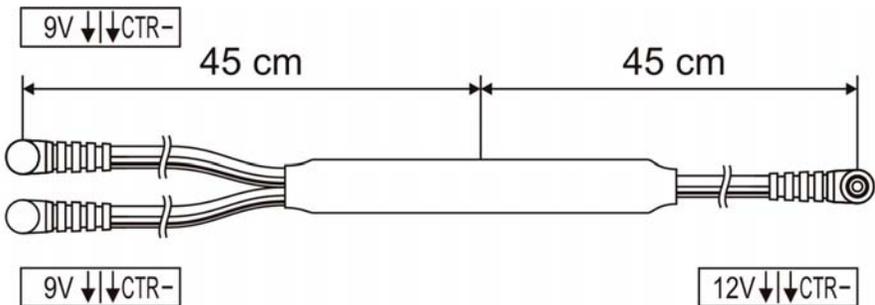
It is recommended to cover the connectors of changed polarity cable with attached labels. The diagrams below explain descriptions on those labels.



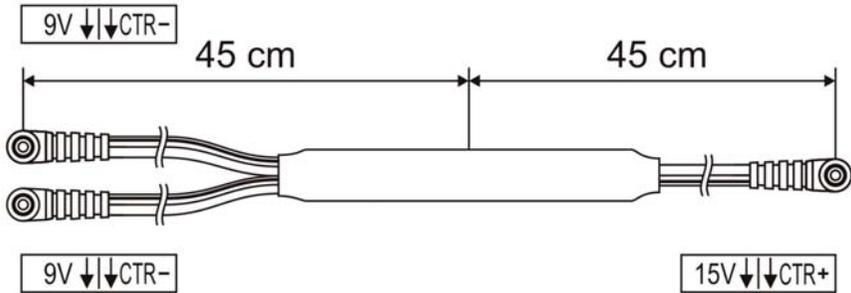
**Adapters for 12V and 15V DC**

The adapters should be connected to the connectors from different sections of the PB-2 module eg. 2A and 3A. The second connectors in those sections should be unused.

For the effects that require the 12V DC voltage it is needed to use individually bought Adapter 2x9V/12V DC (CTR neg. 0,35A) - product code 00865.



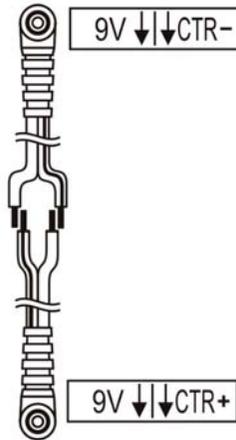
For the effects that require 15V DC voltage it is needed to use individually bought Adapter 2x9V/15V DC (CTR pos. 0,35A) - product code 00866



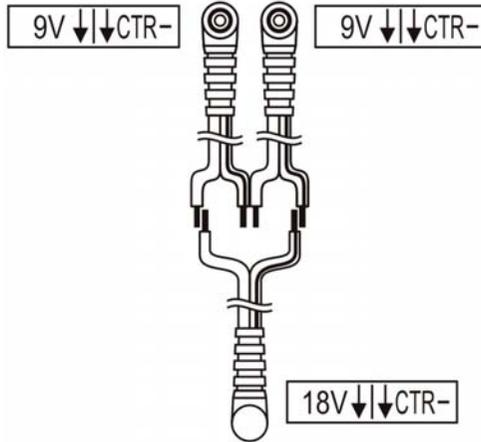
**Persons with qualifications and experiences in electrotechnics can prepare the cables shown below by themselves.**

The packet contains heat shrink tubes and labels for cables with descriptions.

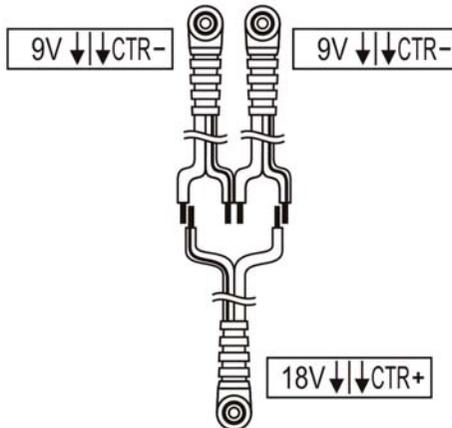
The diagram below shows the cable for the 9V effects with polarity CTR + (centre positive) (9V CTR - input, 9V CTR + output).



The diagram below shows the cable for the 18V effects with polarity CTR - (centre negative) (two 9V CTR - inputs, one 18V CTR - output).



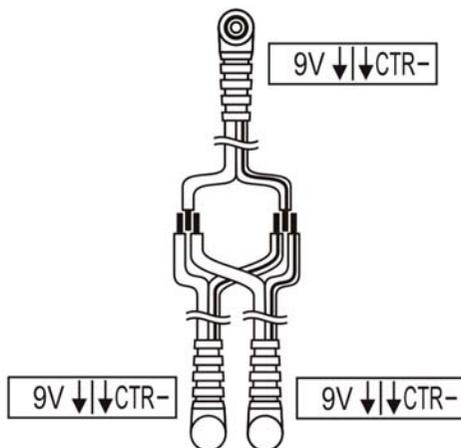
The diagram below shows the cable for supplying the effects requiring 18V DC with polarity CTR + (centre positive) (two 9V CTR - inputs, 18V CTR + output).



Using separated supply is the basic agent enabling to build the guitar systems without ground loops and supply crosstalk (the influence of variable load of one effect on the second). The best solution is to use separated supply of every effect. The exception from this is possible when the following conditions are met:

- effects are placed in pedalboard or in other place far from big mains transformers
- the effects are in the same part of the path (e.g. on the effects or before the amp input) and are placed one by one in the signal path
- the effects aren't the overdrive, boost type effects (with high gain) or the effects consume the current impulsively e.g. those equipped with LED display.

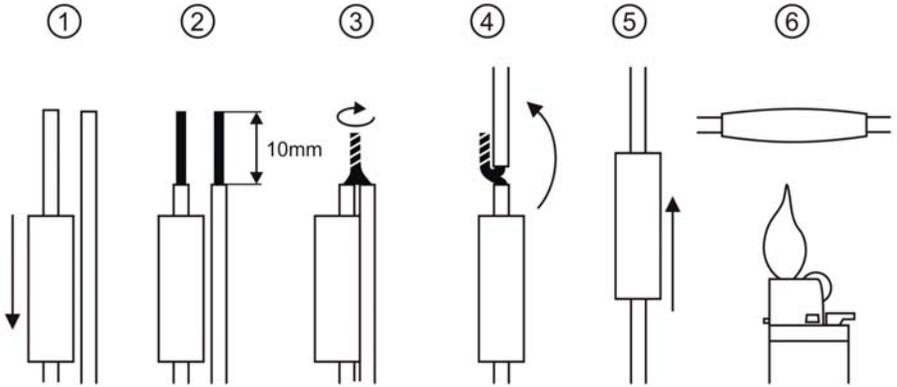
The diagram below shows the cable for supplying two 9V effects with polarity CTR - (centre negative) from one 9V source (9V CTR - input, two 9V CTR - outputs).



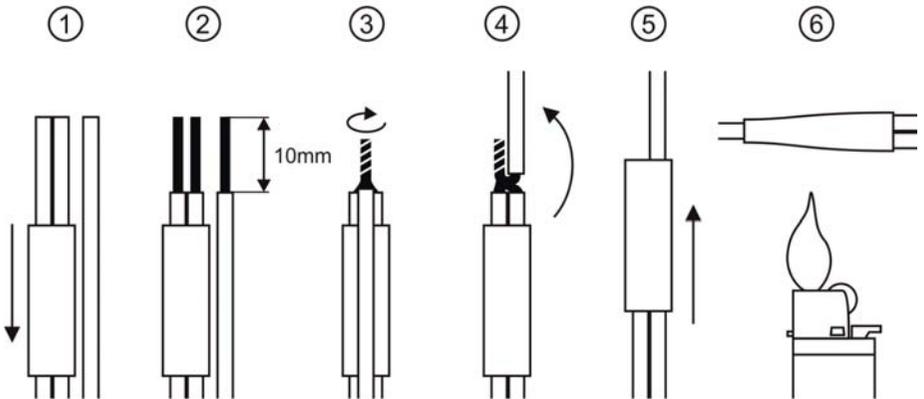
To link the cables you need basic tools and heat shrink tubes (provided with adapter). Strong screwing together the wires and using the heat shrink boot assure reliability and durability of the linking even for three wires.

## Linking wires without soldering

The diagram below shows the way of linking two wires.

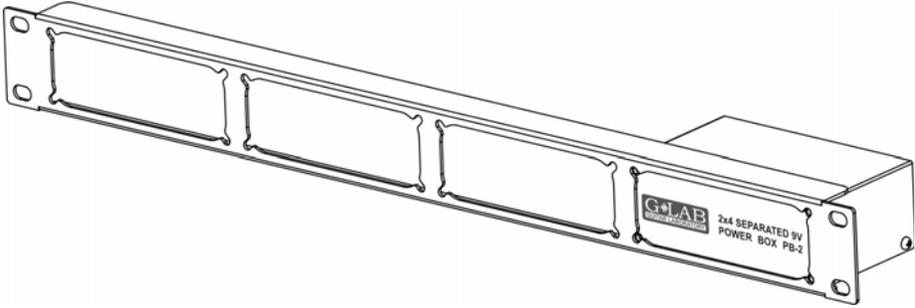


The diagram below shows the way of linking three cables.



## Mounting

In case of mounting inside the GSC-5 footcontroller or pedalboard it is recommended to use the Velcro fasteners supplied with the module. In case of mounting in the rack 19" systems it is recommended to use the 1U RMS Panel (product code 00831) supplied with M3 screws and isolating washers assuring ground separation of each module.



## Technical parameters

Dimensions:	width	108 mm
	Depth	68 mm
	Height	40 mm
Weight		0,32 kg
Power supply		12V DC (+/-0,6V) 1,1A
Outputs		8 (2 x 4 sections)
Output voltage		9V (+/-3%)
Output current		total 1A for all sections, 0,35A for each section

## FCC Compliance

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

**NOTE:** This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer for help.

### Declaration of Conformity

Elzab Soft sp. z o.o., ul. Kruczkowskiego 39, 41-813 Zabrze, Poland, declare under sole responsibility, that the following product:

#### **G LAB/2x4 SEPARATED 9V POWER BOX (G LAB PB-2)**

conforms with requirements of the EC Council Directives:

- 2006/95/EEC Low Voltage Directive,
- 2004/108/EEC Electromagnetic Compatibility,

and holds CE mark. Above named product conforms with the following standards:

- PN-EN 60065:2004 /EN 60065:2002/ Audio, video and similar apparatus - Safety requirements.
- PN-EN 55103-1:2000 /EN 55103-1:1996/ Electromagnetic compatibility - Product family standard for audio, video, audio-visual and entertainment lighting control apparatus for professional use - Part 1: Emission
- PN-EN 55103-2:2001 /EN 55103-2:1996/ Electromagnetic compatibility - Product family standard for audio, video, audio-visual and entertainment lighting control apparatus for professional use - Part 2: Immunity

Arkadiusz Kocik

President of the Elzab Soft sp. z o.o. Board of Directors

Copy of original EC declaration of conformity is available for download on our website <http://www.glab.com.pl>



**DO NOT PLACE THIS PRODUCT INTO THE WASTE CONTAINER !**

This device is marked with a cross-lined waste container symbol according to 2002/96/EU Directive on Waste Electric and Electronic Equipment.

Such marking informs that after usage equipment can not be trashed together with other household waste.

An user obligation is to return wasted equipment to a party collecting wasted electric and electronic equipment. Parties collecting such equipment organise a system, including local collection points, shops and other units, allowing to return such equipment. This Directive assures an user free of charge utilisation of such delivered equipment.

This device is made of materials which can be recycled or utilised after becoming out of use. Proper handling of wasted electric and electronic equipment reduce demand for raw materials and contribute in avoiding harmful consequences for environment and health of people caused by dangerous components and not proper storing and utilising of such equipment.





[www.glab.com.pl](http://www.glab.com.pl)

**G LAB is a brand of Elzab Soft sp. z o.o.**

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