

Spa is an expander for the granular sampler module grandPa. It adds CV inputs for nearly all parameters and a clock input to trigger the grain shift. It doesn't work without the grandPa Eurorack module.

The voltage on the CV inputs is relatively added to the grandPa settings on both channels A and B. All CV inputs react only to positive voltages. The update rate of these CV inputs is 20 Hz.

Four CV inputs have attenuator knobs. These CV inputs are normalised to 5V so the knobs act as a signal source when nothing is connected to the CV input.

## instruction

1

The Grain Size and Shift Speed parameters are directly accessed by the CV inputs and attenuator knobs.

2

The switch selects whether the other two knobs control the Start and End position (switch up) or the Attack and Release parameters (switch down).

3

The Grain Sync trigger input triggers the grain shifting mechanism - it goes to the beginning of the grain and starts playing with an offset proportional to the Shift Speed parameter.

4

The Crush CV input affects the amount of crush applied on the sound. This CV input has no attenuator and reacts to signals from 0-5V.



## connecting the expander

Follow the diagram to connect the ribbon cable to the grandPa. Please make sure the polarity of the cable is not reversed! SPA also requires a power ribbon cable to be connected to the bus board.

## features

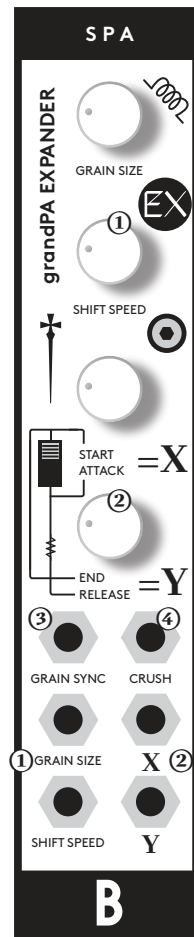
- independent CV inputs for most parameters of the grandPa module
- CV inputs with attenuators are normalised to 5V so the attenuators work as direct controls of the parameters for both channels A and B of the grandPa
- CV inputs react only to positive voltages from 0-12V
- Grain Size and Shift Speed CV inputs with attenuators
- switch to select whether the other two CV inputs with attenuators control Start/End or Attack/Release parameters
- Crush cv input
- Grain Sync input to trigger grain shift

## technical details

- 5HP
- PTC fuse and diode protected 10pin power connector
- 50mm deep
- current +12: <25mA

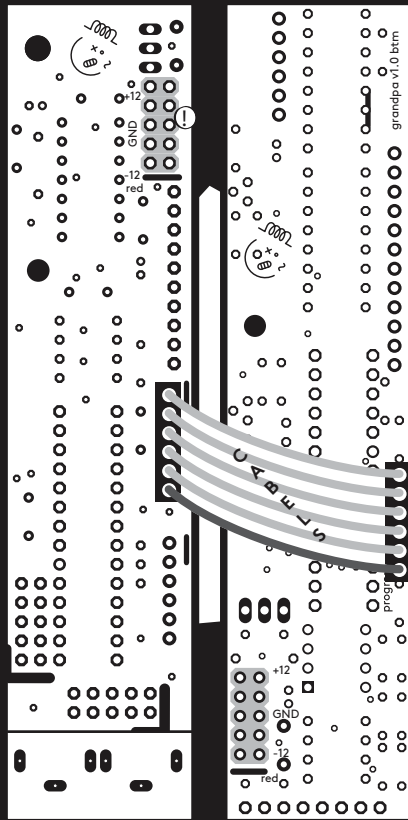


B



SPA grandPa Expander

B



P C B grandPa

Take it Carefully

EX

## connecting module to your system

Before connecting the ribbon cable to this module disconnect your system from power !



Double check the polarity of the ribbon cable and that it is not shifted in any direction. The red cable should be attached to the -12V rail, both on the module and on the bus board side!

please make sure of the following

- you have a standard pinout eurorack bus board
- you have +12 and -12 power rails on that bus board
- the power rails are not overloaded

Although we put protection circuits in the device, we do not take any responsibility for damages caused by wrong power supply connection. After you connected everything, double checked it and closed your system so no power lines can be touched by your hand, turn on your system and test the module.

