SIGNAL SWITCH 2

Manual V1.0

The SIGNAL SWITCH 2 module is a variation of the "SIGNAL SWITCH" module, it is a "MUTE" module composed of four identical stages, as well as two specific stages which we will develop later in this manual. Using "vactrol" helps to avoid annoying clicks when turning your signals on/off passing through the module, and adds an interesting slight OUT fade. The MUTE of the signals is thus clean and discreet.

What is a "vactrol"?

More commonly known as an optocoupler, it is an electronic component made up of two elements integrated into a single box:

- a light emitting diode (LED) and
- a photoresistor (which has the particularity of having a very high resistance in the dark, and which drops when exposed to light).

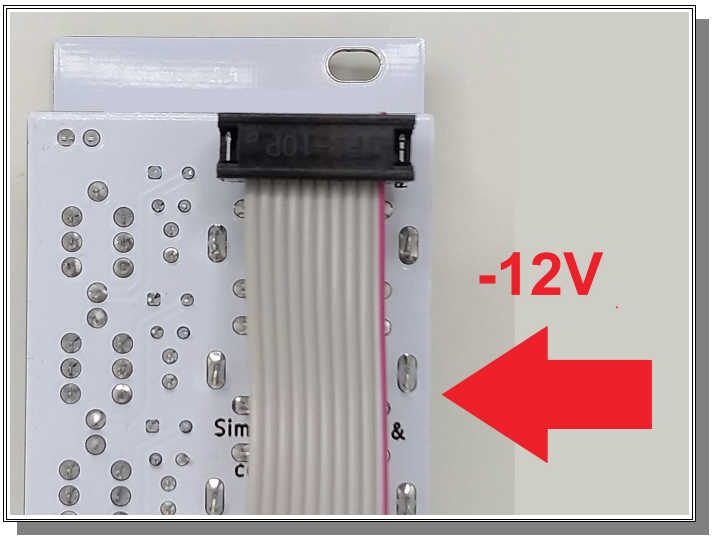
In our case, the application of a voltage to the LED (via the luminous push buttons) causes an emission of light which is captured by the photoresistor. This will therefore "open" or "close" the path taken by the signal.

The "vactrols" used here have been carefully selected not to color the sound or degrade it (no distortion or hiss).

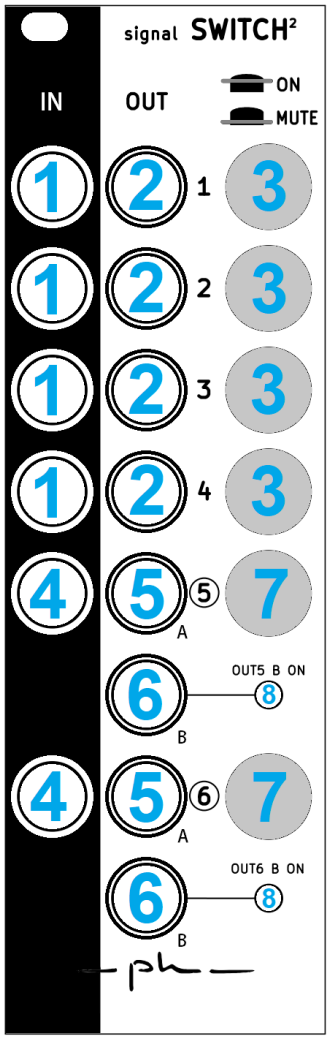
Connecting the ribbon cable

! Be careful to always respect the connection direction of the tablecloth: by convention, the colored part (usually red / pink) of the ribbon represent **-12V** !

Note : on all PCB —ph—, the -12V « red line » is screen printed near the power connector.



Presentation



1: Inputs on 3.5mm jack

2: Outputs on 3.5mm jack

3: Illuminated MUTE button

4: Inputs on 3.5mm jack

5: Main outputs on 3.5mm jack alternate with "6"

6: Secondary outputs on 3.5 mm jack alternate with "5"

7: MUTE button / light routing

8: Active LED when outputs "6" are selected

Explanations

A signal entering "IN" and coming out "OUT" can be muted by the activation of an illuminated push button.

First part of the module (outputs 1 to 4)

ON = Button pressed, LED lit, the incoming signal is directed to the output and therefore remains audible.

MUTE = Button off, incoming signal is muted. Using "vactrol" avoids an unpleasant click and brings a slight fade OUT.

Normalization:
Internal routing is a passive multiple of input 1:
The signal entering input 1 is also routed to the other 5 outputs 2-6 (which retain their own "MUTE" function). Inserting a jack into one of the inputs (2 to 6) breaks the downstream routing. This allows different combinations for its use, depending on your needs.

Second part of the module (outputs 5 & 6)

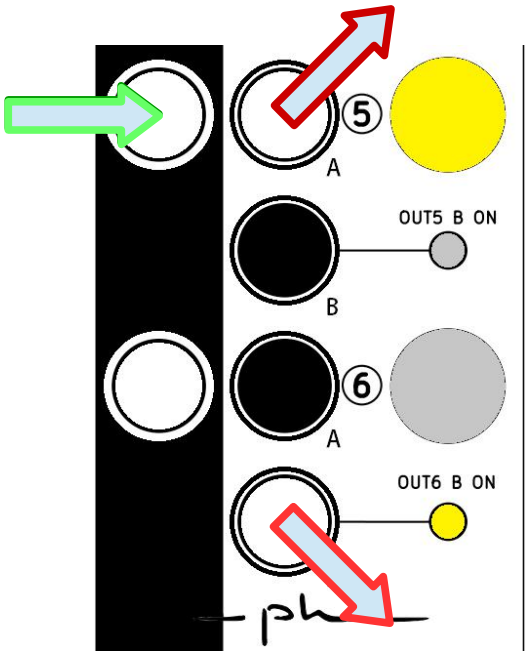
This part of the module offers a different mode, since the incoming signal is routed either:

- to output A (and mutated to B) when the illuminated push button is in the pressed position (LED on), the "OUT5 B ON" LED is off (since output B is inactive).

Where

- to output B (and mutated to A) when the illuminated push button is in the up position (LED off since output A is inactive), the "OUT5 B ON" LED is on to indicate the selected routing.

Examples :



The incoming signal on channel 5 is routed to output 5A (and inactive, "muted" to 5B) because the illuminated push button is in the pressed position (LED on). The "OUT5 B ON" LED is off.

Conversely,

The incoming signal on channel 6 is routed to output 6B (and inactive, "muted" to 6A) because the illuminated push button is in the up position (LED off). The "OUT6 B ON" LED is lit to indicate the selected routing.

Characteristics

Size 8HP (4 cm), epoxy black panel 1,6 mm.

Deep : 25mm with connector (skiff friendly).

PCB in epoxy FR4 dual layer, 1,6 mm. Surface finish HASL.

Ribbon cable, M3 and nylon nuts inc.

Consumption : ~15mA (+12V) / ~15 mA (-12V)

Components tested and assembled by hand, in Brittany, France.

thank you for your trust
Feel free to give me your opinion, criticism or wishes ...
Other modules are coming

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https://phmodular.com