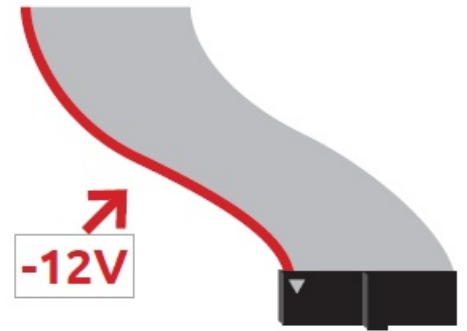


MORPHADER USER MANUAL

POWERING THE MODULE | THANKS FOR PURCHASING A MODULE FROM BEFACO!
 MODULE | BEFORE YOU PLUG THIS MODULE IN...

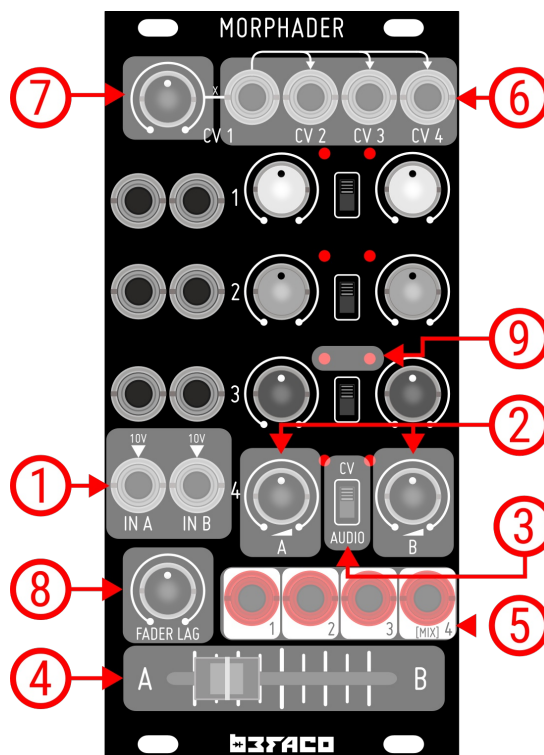
1. **Disconnect your cabinet from the mains.**
2. **Triple check the power cord polarity.** The coloured line on the cable (pin number one) is the -12V rail.
3. If you plug the module backwards you might burn it out and unfortunately this is not covered by the warranty.
4. If you have any questions about this product please send them to: befacosynth@gmail.com



INTRODUCTION | MORPHADER

Morphader is a performative tool designed to make multichannel CV and Audio crossfade easy and comfortable. Fading from one quad CV/audio scene to another. The core of the module has four CV controlled crossfaders, each with their individual control and a master fader to control them all. The module mixes the four crossfades at its fourth output, thanks to a clever normalization scheme. Each of them can be easily removed from the mix by plugging a cable at its own output.

MODULE REFERENCE | PANEL OVERVIEW



1. A/B Inputs

Main inputs of each crossfade channel. Any voltage between +/-10V is accepted. These inputs are normalized to 10V so the module can generate CV by itself when nothing is patched.

2. A/B Attenuators

Attenuator controls for A/B Inputs. This controls the voltage present at the crossfade channel

3. CV or Audio Mode Selector

Selects CV (linear) or Audio (equal power) behavior on the desired crossfade channel.

4. Master Crossfade Control

This slider controls the A-B transition of all four crossfade channels at the same time. Channels with a CV signal present at its CV Input won't be affected by this control.

5. 1-4 Outputs

Outputs of every crossfade channel. With non of the rest of the outs patched, Output 4 works as a mix of all the channels.

6. 1-4 CV Inputs

Control Inputs for each channel. By default, CV1 is normalized to the rest, but it will be replaced if an external CV signal is plugged at the desired input. Voltage range is 0-8V

7. CV1 Attenuator

Attenuator control for CV1 Input signal.

8. Fader Lag

This pot will add some lag to the crossfade transition. It only affects the Master Crossfade Control. The time range is 0-15s

9. Crossfade Channel LED's

Provides visual feedback of the crossfade position.



MODULE REFERENCE | FUNCTIONAL STRUCTURE



Morphader is based on four pairs of signals (1- 4). Each pair has two inputs (A-B) that will morph from each other into its designed Output (crossfade). All this controlled either by the main crossfade control or its own CV Input

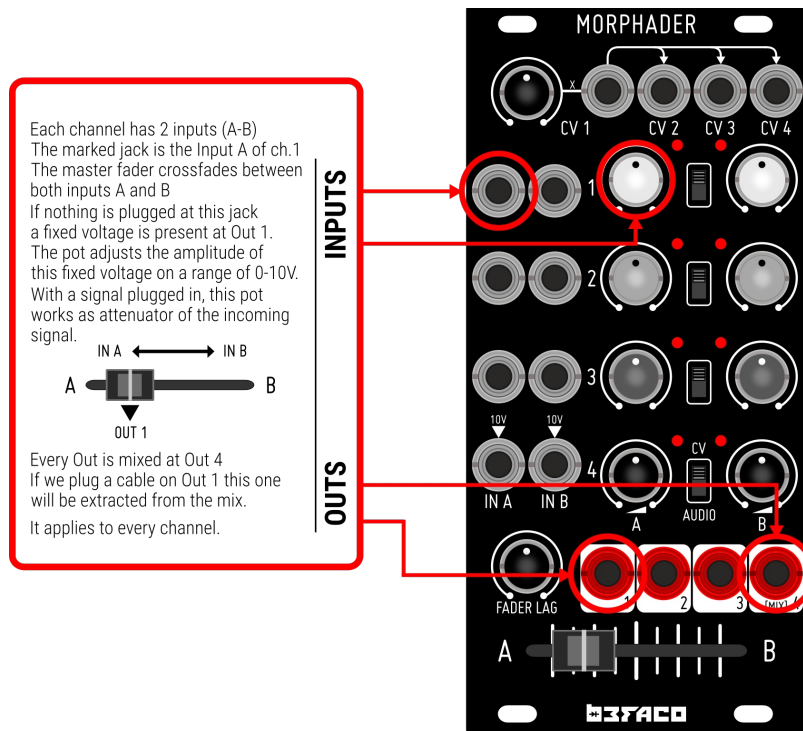
All inputs are normalized to 10V, allowing it to fade from two fixed voltages selected with its attenuator.

Tip: you can make a fade between a signal and a fixed voltage if only one of the inputs is connected. This is quite interesting when working with CV signals as you can create transitions from a moving parameter to a fixed value and vice versa.

Outputs are all summed into the fourth output, allowing complex signal scenes to morphing easily.

Each channel will be disconnected from this mix when a cable is plugged into that individual out.

The LED's on each channel provides visual feedback of the crossfade position.



CV / AUDIO MODE

Each crossfade can work either for CV or Audio signals. This can be selected independently for each one with the switch located between the attenuators.

In **CV mode** the **transition between the signals is made linearly** in order to preserve the original shape of the signals.

In **Audio mode** the module makes the fade between the signals **following an exponential crossfade shape**, which is designed to maintain equal power of the signals during the transition.

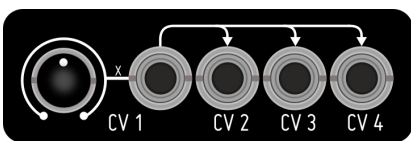


CV INPUTS

Morphader counts with four CV Inputs, one for each crossfader channel. With this inputs, the crossfade of each channel can be controlled with external CV signals (**0-8V range**).

By default, **CV1 is normalized to the rest**, but it will be replaced if an external CV signal is plugged at the desired input.

CV inputs from 2 to 4 will disconnect its related crossfade channels from the Master Crossfade Control. **This won't affect CV1, as its value is summed to the Master Crossfade Control value.**

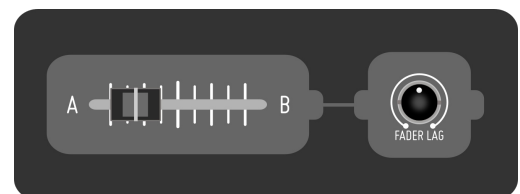


MASTER CROSSFADE CONTROL

This slider controls the crossfade of all the channels at once.

Except for crossfade channel 1, it won't have any effect if a CV signal is present at the channel's CV Input.

The crossfade can be slewed via **Fader Lag** control, expanding the time to reach from A to B up to 15s. **Pay attention that when Fader Lag is applied the transition will follow an exponential shape when fading from A to B and logarithmic when coming back from B to A** which can affect slightly to the time perception of the transition depending of the type of signals present on the crossfade.



MISCELANEA | SPECS & CREDITS

- * **Size:** 12HP
- * **Depth:** 32mm
- * **+12v:** 50mA
- * **-12v:** 50mA

Designed with care and love by the Befaco Team.
Thanks a lot to all beta testers and friends that tried the module and provided loads of valuable information!

MODULE REFERENCE | BLOCK DIAGRAM

