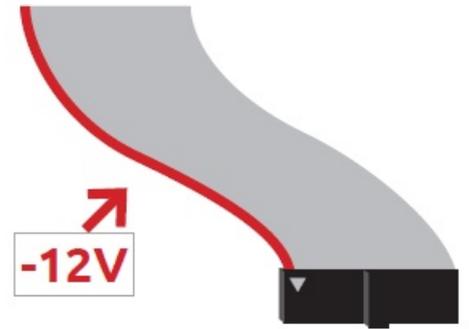




# INSTRUMENT INTERFACE USER MANUAL

## 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](mailto:befacosynth@gmail.com)



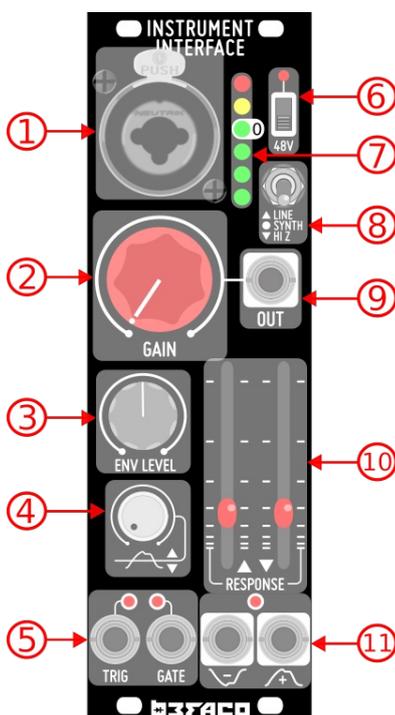
## INTRODUCTION | INSTRUMENT INTERFACE

**Instrument Interface** is an eurorack pre-amp capable of bringing any type of audio signal to modular levels thanks to its amplification circuit.

The module can drive regular and condenser microphones (**+48V Phantom Powered**) as well as **Instrument** and **Line** signals with a very low distortion ratio.

Going further from the regular pre-amp operation, Instrument Interface offers some additional extra functions like a **Trig/Gate extractor** and **Envelope Follower** circuits, allowing you to use the character of your audio signal in more creative ways

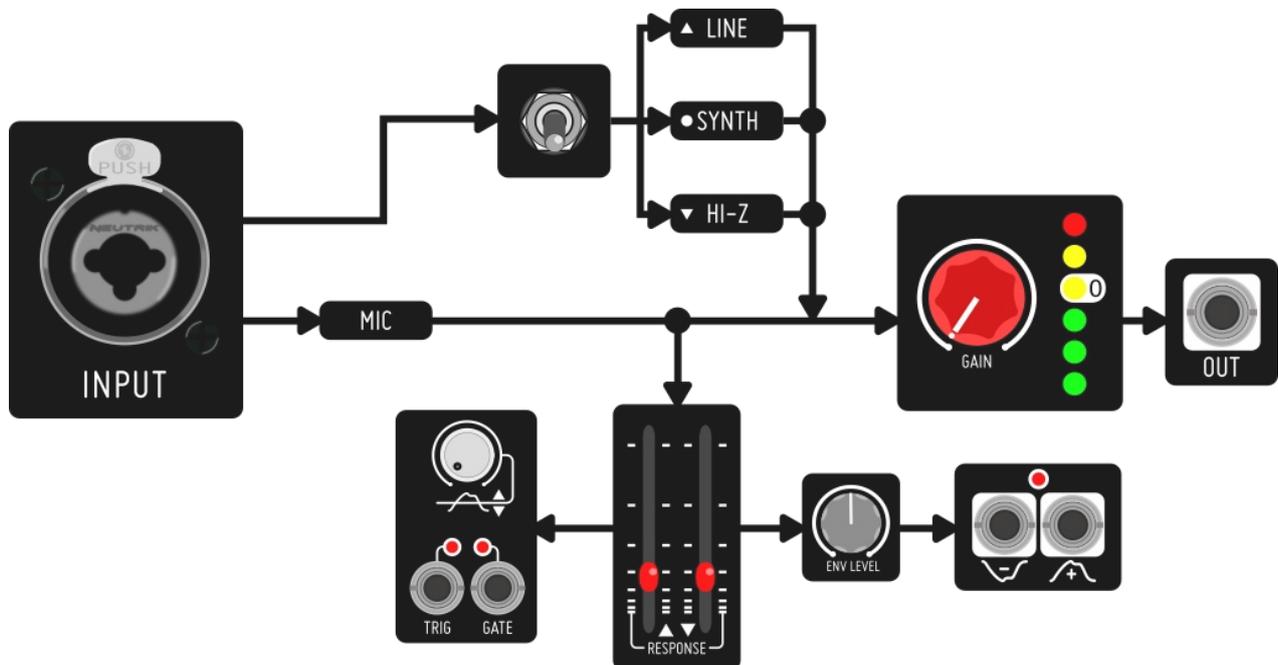
## MODULE REFERENCE | PANEL OVERVIEW



1. **Combo Input**  
Main audio input of the module.  
Canon XLR and 6,5" Jack compatible
2. **Gain**  
Main control for the signal gain.
3. **Env Level**  
Envelope Follower signal attenuation
4. **Trig/Gate Thresold**  
Envelope signal threshold for Trig/Gate extractor
5. **Trig/Gate Extractor**  
Main outputs of the Trig/Gate Extractor
6. **+48V Selector Switch**  
Phantom Power activator
7. **Vumeter**  
LED Level Signal Indicators
8. **Line / Synth / Hi-Z**  
Three positions switch for amp mode selection
9. **Out**  
Main audio output. +/-5V
10. **Response**  
Manual control for the envelope time response
11. **Envelope Outputs**  
Positive and Inverted outputs of the Envelope Follower circuit.  
0 to 10V - Positive Output  
0 to -10V - Negative Output

## FUNCTIONAL BLOCKS | INTERNAL STRUCTURE DIAGRAM

The Instrument Interface's functional layout is divided in three main sections: the Preamp Section, the Envelope Follower Section and the Trig Extractor Section. Before going deeper into each section, check the schematic below. It represents the path of the signal through every section and will help you to understand how the module is working internally.



## FUNCTIONAL BLOCKS | PREAMP SECTION

The Preamp section is the first and most important one on Instrument Interface. Here we process and adapt our external signals to modular levels, but also through here, the signal is sent to Envelope Follower section.

Before plug anything on the Input, be sure the Gain pot is set to minimum position and the correct type of signal is selected on the switch. A synth signal being amplified via the Hi-Z circuit won't be a pleasure experience for your ears ;)

If you want to use a microphone just plug your Canon/XLR cable and turn on the +48V switch if needed. The selection switch doesn't have effect here.

Adjust the level of your signal with the Gain pot and the Vumeter. This Vumeter shows the level of the Output signal, which means that on the point marked as 0, your signal will have an amplitude of +/-5V.



## FUNCTIONAL BLOCKS | ENVELOPE FOLLOWER SECTION

After be processed on the Preamp section, the signal reaches to the Envelope Follower. The purpose of this section is use the dynamic content of our audio signal to generate an envelope that we can use to modulate other parameters of our setup.

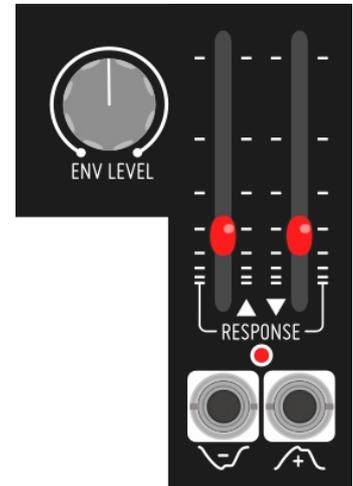
With the response controls, you can adjust the reaction time of the envelope to the amplitude changes of the audio signal.

With fast settings, the envelope reacts faster to the transients generating a signal more similar to the original, being the same with the faders on their minimum position.

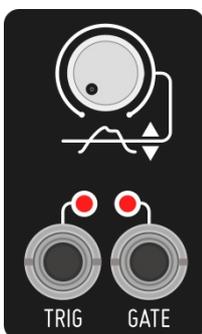
At low rates, the envelope reacts slower to the transients creating a contour that only covers the longer dynamics changes of the signal. This is particullary useful if you want to use sustained parts of your audio signal in your envelope.

The Env Level pot sets the amplitude of the resultant envelope signal from 0 to 10V if you use the Positive Output and 0 to -10V if you use the Inverted Output.

Note: the resultant envelope is not affected by the Gain pot of the Preamp Section.



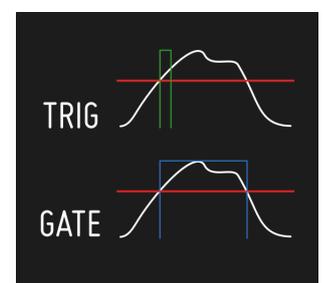
## FUNCTIONAL BLOCKS | TRIGGER/GATE EXTRACTOR



The last section on Instrument Interface is the Trigger/Gate Extractor. This circuit fires a Trigger and a Gate signal each time the envelope reaches an Amplitude Thresold selected with the pot.

This section works taking as reference the envelope generated by the Envelope Follower, before it passes through Env Level control.

Both signals has 10V amplitude but only Gate signal is sustained while the envelope doesn't go down the thresold level.



## MISCELANEA | SPECS &amp; CREDITS



\* **Size:** 8HP

\* **Depth:** 32mm

\* **+12v:** 60mA

\* **-12v:** 25mA



\* **Design:** Pascual Rocher

