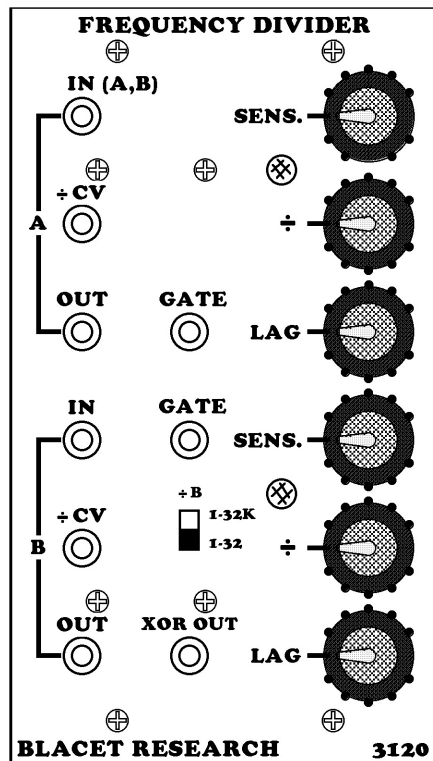


# Frequency Divider

Dual Voltage Controlled Frequency Divider Module

**BLACET RESEARCH MODEL FD3120**

User & Assembly Manual



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## Introduction

The Blacet FD3120 is a dual voltage controlled frequency divider module allowing 16 divisors of 1, 1.5, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 16, 24, and 32 on each channel. The B Channel can be switched to provide divisors of 1, 2, 4, 8, 16, 32, 64, 128, 256, 512, 1024, 2048, 4096, 16384, and 32768. Divisors can be manually or voltage controlled.

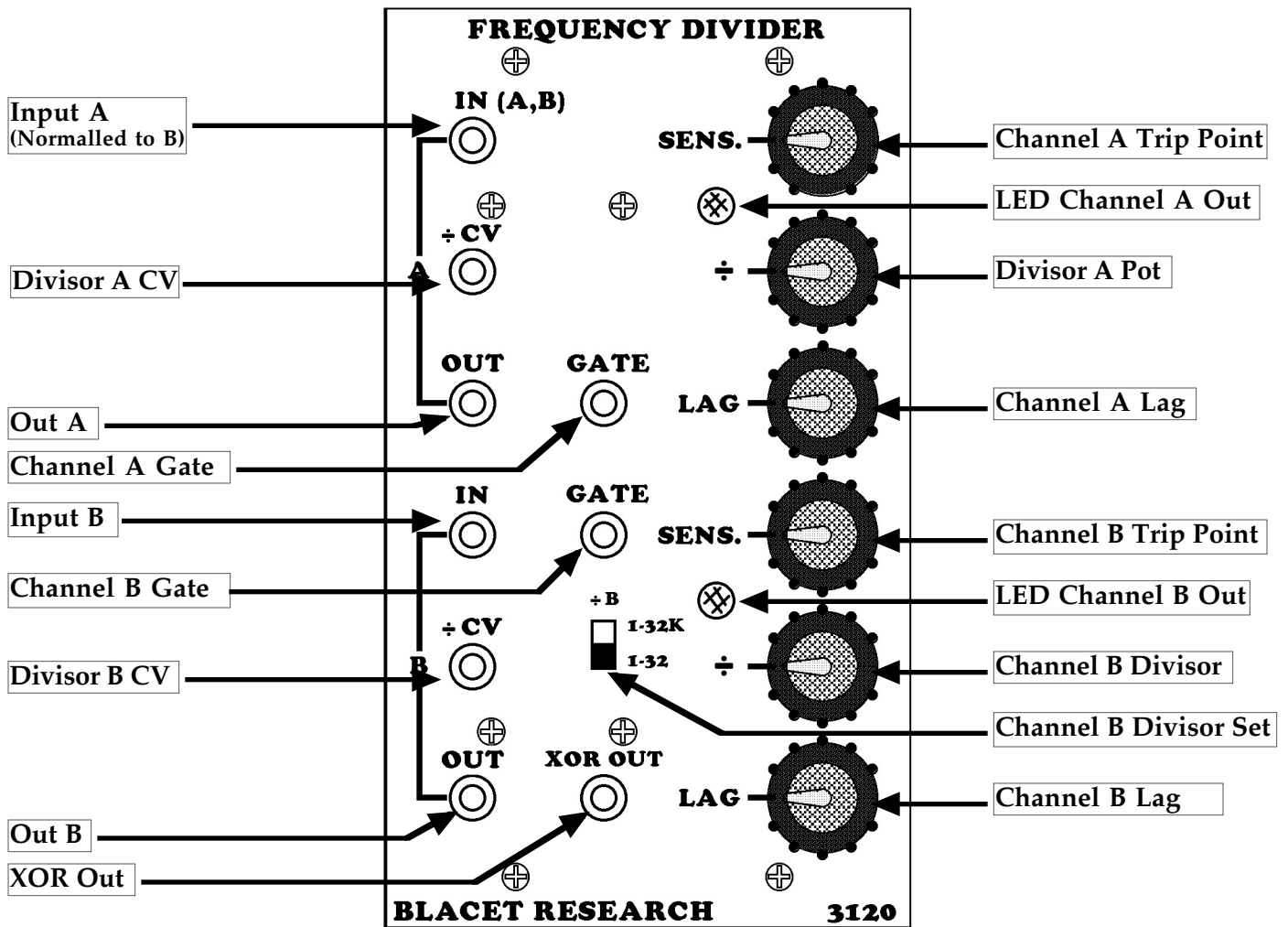
Output waveforms are pulse or square.

The A Input is normalled to the B Input if no plug is inserted in the B Input.

A Sensitivity control on each section allows setting the trigger point on complex input waveforms.

Each channel has a normalled "on" Gate/Reset Input. Both channels have lag controls to reduce the harmonic content of the output.

An additional XOR Output combines the two channels to give a ring modulation type sound.



## Controls and Operation

Operation of the FD3120 is fairly straight forward. Connect an audio signal to either IN jack and connect the OUT jack to a mixer, amp or other module as required. Start with the Sens. control at midway. Adjust the ÷ knob and select the desired divisor. Adjust the Lag pot for harmonic content. Note that the Channel B Lag is 5X stronger than the Channel A Lag, and is better suited for extreme filtering of the longer divisor set of B.

Input waveforms should be fairly simple. Polyphonic waveforms, for example, may confuse the module and produce noisy results.

The A Channel IN is normalled to the B Channel when no plug is inserted in B. The B Channel has a switch to select a different divisor set. In the lower position, the set is the same as the A Channel (1 thru 32). In the upper position, this changes to 1 thru 32K in standard binary steps of 2X.

The XOR OUT runs the A and B outputs through an XOR logic gate to get ring modulator type sounds. Note that the Sensitivity and Lag controls for both channels may have some effect on this output.

The signal inputs are DC coupled and will respond to gate, trigger and audio signals up to about 4 kHz. Above this point aliasing and other rude sounds may occur. These have not been filtered out as some folks enjoy this potential.

The Divide CV inputs allow 0-10V control range and will respond to DC through low audio frequencies.

The GATE inputs are normalled "on". When an external gate signal is plugged in, the module will reset and start dividing on the rising edge of the gate signal.

## Power

**Power Input Connector PWR:** This PCB connector requires a source of regulated +15Vdc and -15Vdc power to run the module. Use a Blacet PS505 supply or the equivalent.

**Connections to this connector should be made only when the power supply is OFF and the connector must be positioned correctly on the pins.** As using the wrong supply can cause damage to the unit, please contact us if you have any questions! Do not attempt to use "wall warts" to power the module.

## Specifications

Divisors: 1-32; 1-32K optional on B Channel

Sensitivity: -5V to +5V

Front Panel Size: 5.25" H x 3" W

Module Depth: 4.4"

Input/Output Jacks: 3.5 mm

Power: +15 Vdc @ 37mA, -15 Vdc @ 25mA