

# b:16

multimode filter

**b:16** is a multimode filter based on the state-variable topology. It provides three simultaneous filter outputs - highpass, bandpass, and lowpass — from a single audio input. Cutoff frequency and resonance are each controlled by a dedicated knob and a CV input. The filter covers the full audible range from 30 Hz to 20 kHz and enters self-oscillation at high resonance settings.

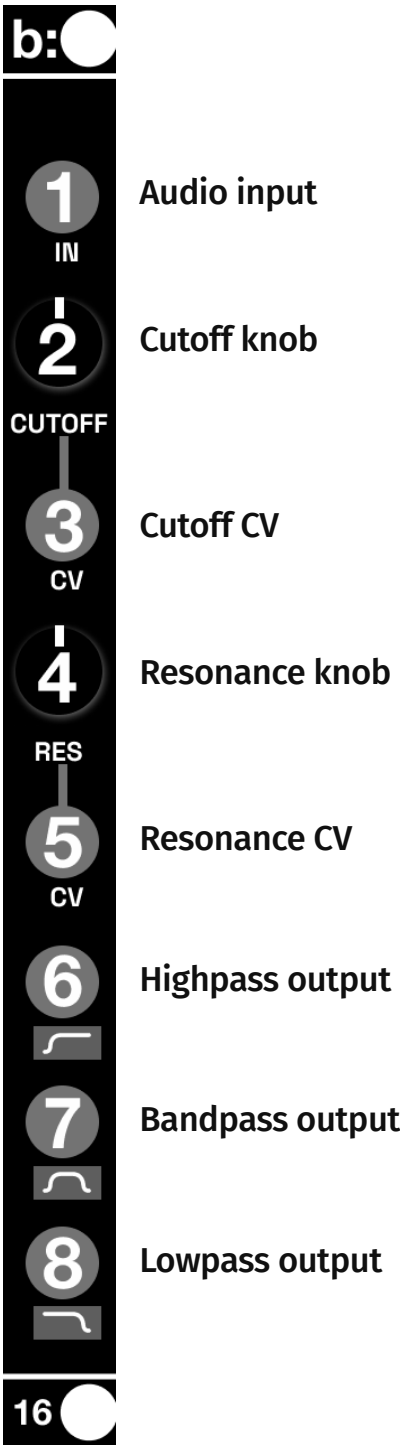
## Technical specifications:

|                     |                          |
|---------------------|--------------------------|
| Operating voltages: | -12V / +12V              |
| Power draw:         | 26 mA -12V / 26 mA + 12V |
| Width:              | 2 HP                     |
| Depth:              | 27 mm                    |



This product was tested and found compliant with the following standards:  
EN 55032:2015/A11:2020, EN 55035:2017, EN IEC 63000:2018.

For details, please visit:  
[bartinstruments.com/conformity](http://bartinstruments.com/conformity)



## Operation

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Patch an audio signal into IN. All three outputs - HP, BP, and LP - are active simultaneously at all times.

The CUTOFF knob sets the base cutoff frequency. The CUTOFF CV input adds to or subtracts from the knob position depending on the polarity of the incoming voltage, allowing envelopes, LFOs, sequencers, or any CV source to modulate the filter sweep.

The RESONANCE knob sets the base resonance amount. The RESONANCE CV input is bipolar - positive voltages increase resonance above the knob setting, while negative voltages reduce it below. This allows for dynamic automated control of resonance from any bipolar modulation source.

At maximum resonance, the filter will enter self-oscillation and produce a sine wave at the frequency set by the CUTOFF knob and CUTOFF CV. In self-oscillation the LP output produces the cleanest sine wave. The filter can be played as an oscillator by patching a 1V/oct pitch CV source into the CUTOFF CV input and adjusting the CUTOFF knob to set the base pitch.

The OTA-based state-variable design provides smooth, open filter character with consistent frequency responses across all three simultaneous outputs.

## Safety and Installation Guide

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Ensure your modular system is powered on before installing the module. Only power on the system once every module is connected and properly installed in your system using the provided screws.

Do not expose the module to moisture or extreme temperatures.

Do not operate the module in environments with severe amount of dust in the air.

The module's inputs are protected against electrostatic discharge, but be careful when handling the module itself.

Only one row of power connectors is present on the module, and it doesn't matter which row of the 10-pin power header is connected to it. Please follow the markings on the back of the module to ensure correct power cable orientation. The module is protected against reverse power connection.