

# b:15

sample & hold

**b:15** is a compact 2HP sample and hold with an integrated noise source and a three-output signal processor. The sample input is normalled to the internal transistor-based noise source, allowing the module to generate stepped random voltages with nothing more than a trigger signal. Patch an external signal to sample CV or audio, then use the additional outputs for inversion, negative signal blocking, and full-wave rectification.

## Technical specifications:

|                     |                          |
|---------------------|--------------------------|
| Operating voltages: | -12V / +12V              |
| Power draw:         | 25 mA -12V / 25 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)



Noise output

Signal input

Trigger input

S&H output

Aux input

Inverted output

Neg block output

Neg mirror output

## Operation

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The sample and hold circuit samples the voltage present at SAMPLE / SIGNAL input when a trigger is received at TRIGGER input. The sampled voltage is then held at the S&H output until the next trigger is received.

When nothing is patched into SAMPLE / SIGNAL input, the input is normalled to the internal noise source. In this configuration, each trigger samples a new value from the noise source and produces a stepped random voltage at the S&H output. Patching an external signal into SAMPLE / SIGNAL input overrides the normalled noise connection. The module can then sample audio, CV, envelopes, modulation signals, or any other DC-coupled voltage at the arrival of each trigger.

The internal noise source is available at the NOISE output independently of the sample and hold circuit. It is generated using amplified noise from an MMBT3904 transistor and can be used as an audio source, modulation source, or random source for other modules.

The aux signal processor has one DC-coupled input and three simultaneous outputs. Patch a signal into the AUX input and use any combination of the outputs. The -A output is the inverted version of the input signal. The NEG SIGNAL BLOCK output removes the negative portion of the signal. Positive input voltages are passed, while negative input voltages produce 0V. The NEG SIGNAL MIRROR output mirrors negative input voltages around 0V into the positive range. Both positive and negative portions therefore appear as positive voltage at the output, producing a full-wave-rectified version of the input signal.

All inputs and outputs are DC coupled, making the module suitable for both audio-rate signal processing and CV applications.

## 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.