

## Overview

The System80 850 Eurorack module is a multi-function modulation source. It combines a voltage-controlled Low Frequency Oscillator (LFO), a Sample & Hold (S&H) circuit, white and pink Noise sources, and a Slew Limiter circuit. The LFO frequency can be modulated by an external Control Voltage (CV) and can be reset by an external rising pulse (Gate or Trigger). The LFO also features an adjustable Delay circuit triggered by the reset pulse which allows a gradual increase in LFO output after reset.

The S&H circuit can use Pink Noise (Random), any of the LFO waveforms, or

an external signal as a sample source. The S&H internal clock can be overridden with an external clock signal to allow sampling to be synchronized with external events. By default, the S&H output is normalized to the Slew circuit's input, allowing for slew to be added to the S&H signal. Alternatively, the S&H clock pulse can be connected to the Slew input by changing a jumper connect or on the back of the module. The input into the Slew circuit is broken when an external signal is plugged into the Slew input jack. The S&H circuit also has a triangle waveform output that is the same frequency as the clock.

## Control Descriptions

### A S&H Rate Control

Changes the sampling rate of the S&H circuit.

### B Source Selector

Changes the source of the signal that is sampled by the S&H circuit. EXT is normalized to the LFO output. Resets to NOISE on power up.

### C External Sample Input

Input for connection of an external signal to the S&H circuit.

### D S&H Output

### E External Sample Clock

Input for external sampling clock that overrides internal S&H clock.

### F Noise Source

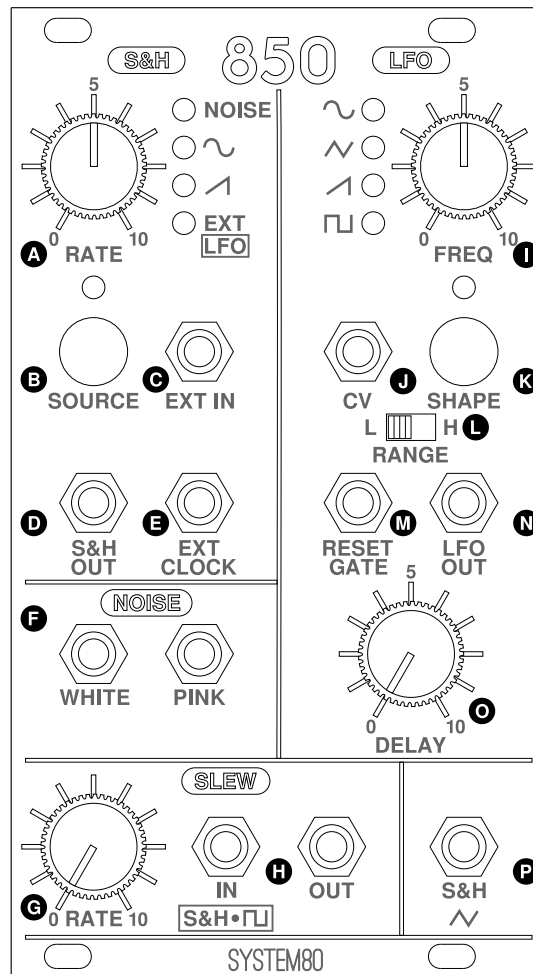
Both White and Pink Noise outputs are available.

### G Slew Rate Control

Changes the slew rate of the Slew circuit.

### H Slew Input and Output

Slew input is normalized to either S&H output or S&H clock pulse. Connection broken when external signal applied.




### I LFO Frequency Control

Changes the frequency of the LFO.

### J LFO Control Voltage Input

Control voltage input for LFO frequency.

### K LFO Shape Selector

Selects the shape of the LFO waveform. Resets to  on power up.

### L LFO Range Switch

Sets the frequency range of the LFO between low (L) and high (H).

### M LFO Reset/Gate Input

Input for LFO reset/gate signal. Rising pulse resets LFO cycle and Delay rise time.

### N LFO Output

### O LFO Delay Time Control

Changes the LFO rise time delay after Reset event.

### P S&H Clock Triangle Output

Bi-polar triangle waveform output at the same frequency as the internal S&H clock.

## Specifications

### LFO

Output amplitude:

 -5 V to +5 V

 -5 V to +5 V

 0 V to +7.5 V

 0 V to +7.5 V

Frequency control range:

0.1 Hz - 3 Hz (LOW)

3 Hz - 100 Hz (HIGH)

### LFO (cont'd)

Full frequency range: 0.015 Hz - 150 Hz

Frequency CV response: -5 V to +5 V

Delay time (max): 4 s

### S&H

Frequency range: 0.1 Hz to 100 Hz

Clock pulse amplitude: -10 V to +10 V

Triangle amplitude: -5 V to +5 V

### SLEW

Slew time (max): ~2 s

### NOISE

White: -10 V to +10 V

Pink: -5 V to +5 V

### GENERAL

Power consumption: 40 mA +12 V, 20 mA -12 V

Width: 14 HP

Depth: 28 mm (incl. power connector)