CORSYNTH

DR-03 HI-HATS / METAL

USER MANUAL

DR-03 HI-HATS / METAL

The DR-03 Hi-Hats / Metal is the third module in the DR series dedicated to analog drum synthesis. It is designed to synthesize hi-hats and metal percussion like cowbells or cymbals and even FX. Three different voices are available at the same time Closed Hi-hat, Open Hi-hat and Metal plus a Hihat mixed output .

Hi-Hats

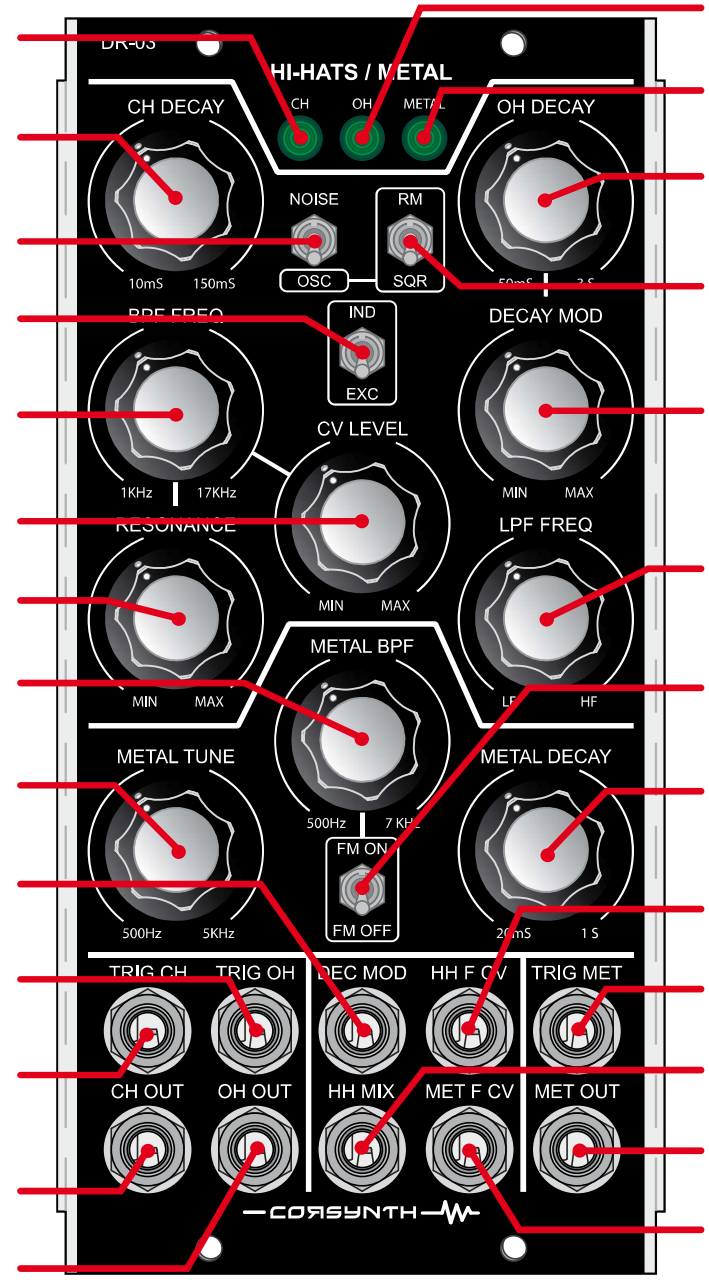
To synthesize a Hi-Hat there is a key element that defines the final result, the primary sound used to create it. The DR-03 has three possible sound sources , a white noise generator, a mix of six square wave oscillators and a mix of ring modulated square wave oscillators. These three sound sources, together with the VC Band Pass filter and the Low Pass Filter allow the DR-03 to create a wide range of hi-hat sounds.

Another interesting feature is that the Open Hi-hat decay time is voltage controlled and it can be triggered independently or conditioned to the Closed Hi-hat.

Metal

The Metal sound is created using two ring modulated square wave oscillators and a VC Band Pass Filter. The frequency of one oscillator can be manually controlled and the other one has a fixed frequency. The variable oscillator can modulate the cutoff of the BPF to create metallic FM sounds.

DR-03 Hi-Hats / Metal
Front Panel



Closed Hi-Hat Output LED

Closed Hi-Hat Decay time

Hi-Hat source

Open Hi-Hat trigger mode

Hi-Hat BPF Frequency

Hi-Hat BPF FM level

BPF resonance

Metal BPF Frequency

Metal oscillator frequency

Open Hi-Hat Decay CV input

Open Hi-Hat trigger input

Closed Hi-Hat trigger input

Closed Hi-Hat output

Open Hi-Hat output

Open Hi-Hat Output LED

Metal Output LED

Open Hi-Hat Decay time

Noise oscillator mode

Open Hi-Hat Decay modulation level

Hi-Hat LPF frequency

Metal BPF FM switch

Metal Decay time

Hi-Hat BPF FM CV input

Metal trigger input

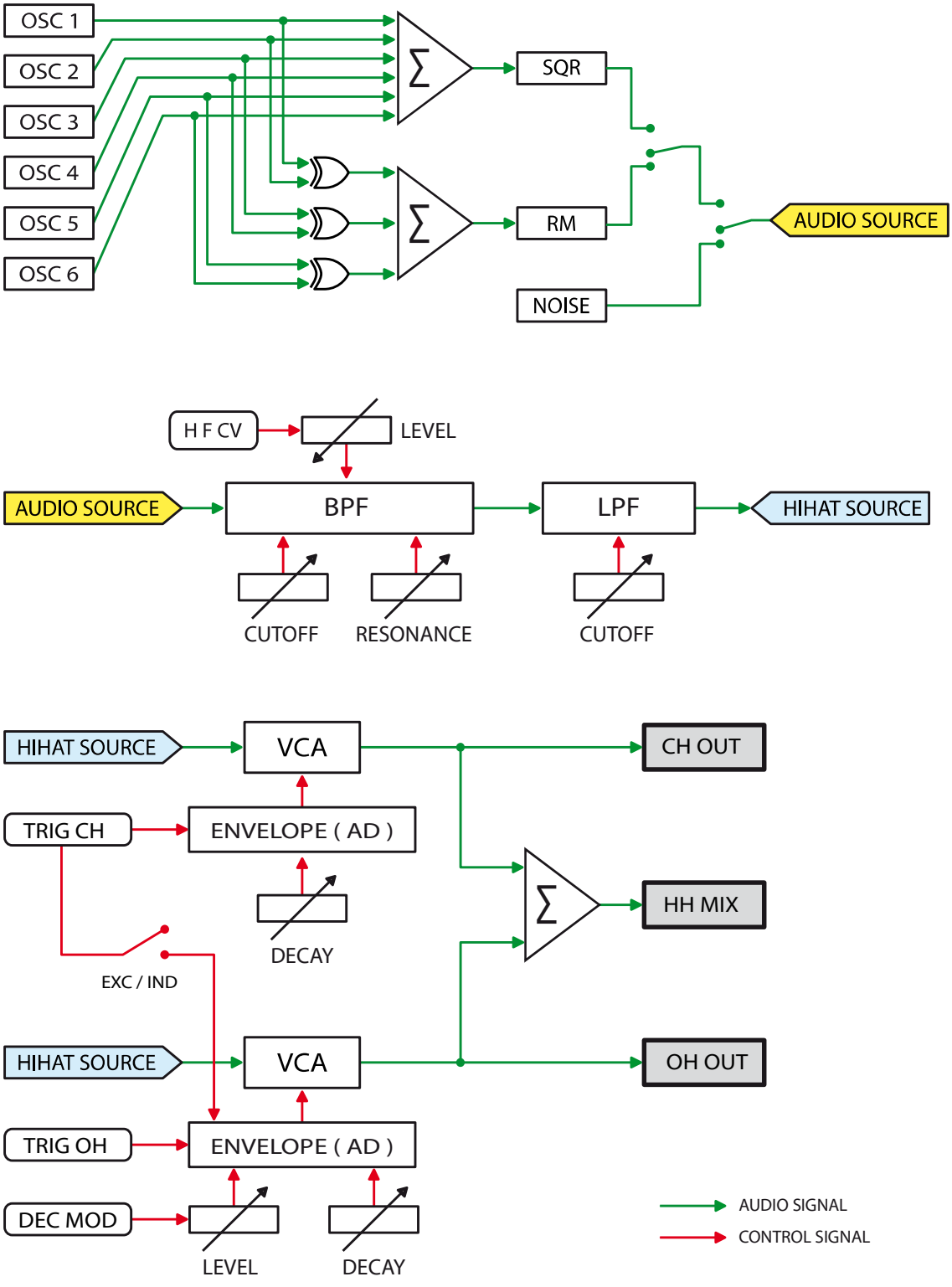
Hi-Hat mix output

Metal output

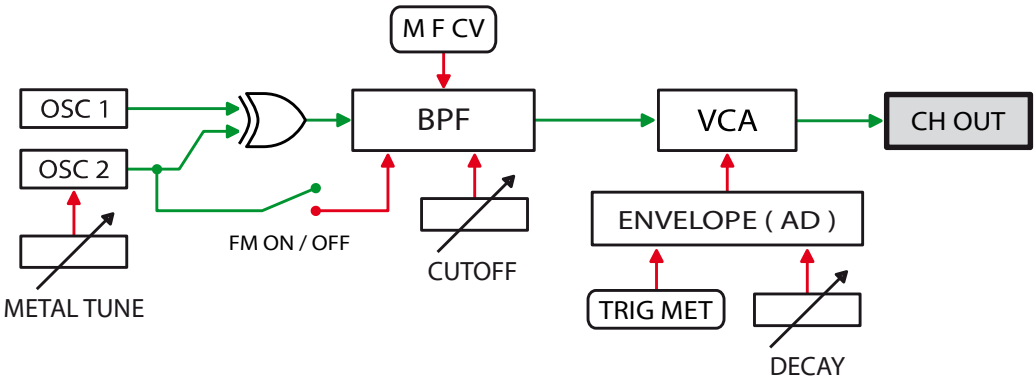
Metal BPF FM CV input

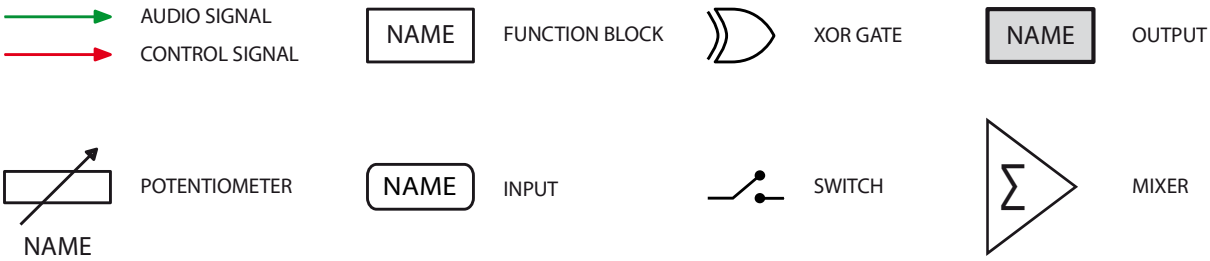
DR-03 HIHATS / METAL BLOCK DIAGRAM

HIHATS BLOCK DIAGRAM



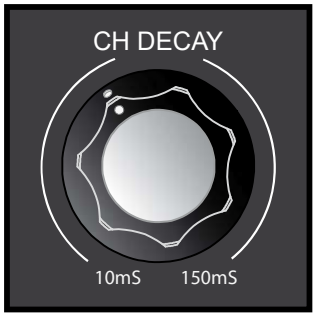
METAL BLOCK DIAGRAM





CONTROL DESCRIPTION

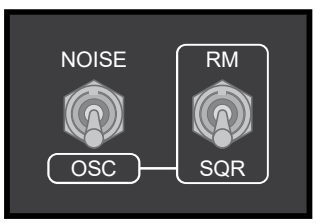
Hi-Hat Controls



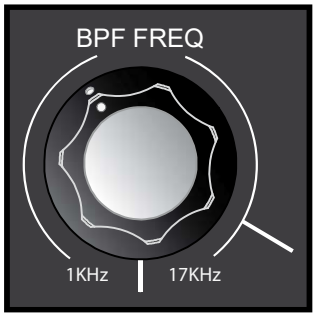
CH DECAY
This knob sets decay time of the closed hit-hat. It goes from 10ms up to 150ms.

OH DECAY
This knob sets the base decay time of the open hit-hat. It goes from 50ms up to 3s.

DECAY MOD
This knob sets the modulation level to the open hi-hat decay time.



HI-HAT SOUND SOURCE
This switches select the audio source to create the hi-hat sound.
- NOISE : a white noise generator
- OSC : a cluster of six square wave oscillators.
  RM: the oscillators are ring modulated by pairs and the three resulting signals are mixed together.
  SQR : the six oscillators mixed together.



BPF FREQ
This potentiometer sets the Hihat bandpass filter cutoff frequency.

CV LEVEL
This potentiometer sets amount of external modulation that affects the Hihat bandpass filter cutoff frequency.

RESONANCE
This potentiometer sets amount of resonance to the Hihat bandpass filter.

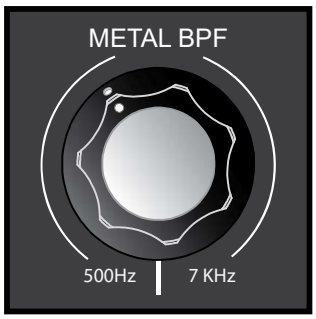
LPF FREQ
This potentiometer sets the Hihat lowpass filter cutoff frequency.

OPEN HI-HAT - TRIGGER MODE
This switch allows to chose what happens when the Open Hihat is on and the Closed Hihat gets triggered

IND : The Open Hihat is not affected by the Closed Hihat.
EXC : When the Closed Hihat is triggered the Open Hihat stops immediately.

Metal Controls

METAL TUNE
The Metal sound is composed by two ring modulated oscillators. The first oscillator has a fixed frequency. The frequency of the second oscillator is controlled by this knob. It goes from 500Hz to 5Khz

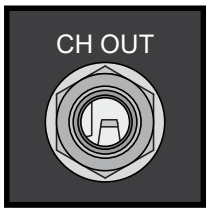


METAL BPF
This potentiometer sets the cutoff frequency of the Metal Band Pass Filter.

METAL DECAY
This knob sets decay time of the Metal sound. It goes from 20ms up to 1s

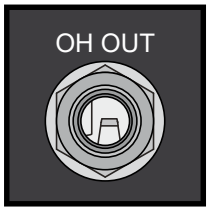
METAL BAND PASS FILTER VCO MODULATION
This switch turns on the FM between the variable metal oscillator and the Band Pass Filter.

TRIG CH
Closed Hi-Hat trigger input. Any signal with a positive voltage higher that 3.5V can be used.



CH OUT
Closed Hi-Hat output.

TRIG OH
Open Hi-Hat trigger input. Any signal with a positive voltage higher that 3.5V can be used.

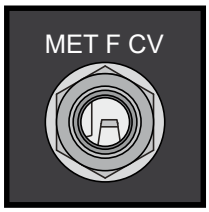


OH OUT
Open Hi-Hat output.

DEC MOD
Open Hi-Hat decay modulation input.

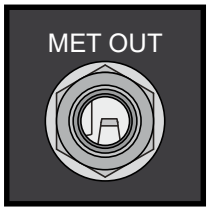
HH
Hi-Hat mixed output. This ouput mix of the outputs of the Open and Closed hi-hat.

HH F CV
Hi-Hat Band Pass Filter frequency CV input.



MET F CV
Metal Band Pass Filter frequency CV input.

TRIG MET
Metal trigger input. Any signal with a positive voltage higher that 3.5V can be used.



MET OUT
Metal output.

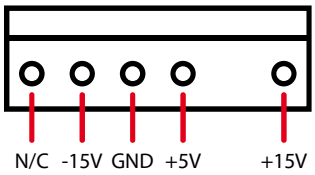
Trimmers and power connectors

IMPORTANT !!!!

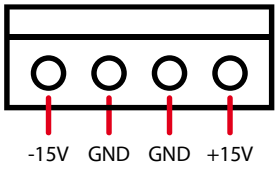
This module has two power connectors (MU and MOTM).
Only one is needed to power the module. (MU or MOTM).

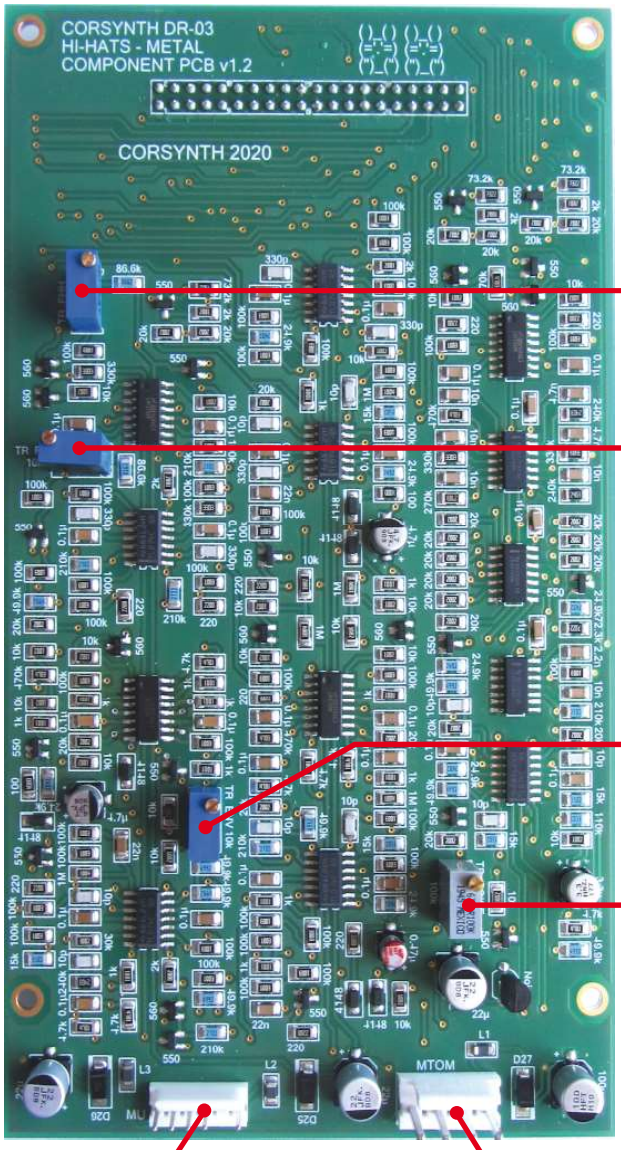
Never connect both at the same time.

MU



MOTM





BPF HH initial frequency

BPF Metal initial frequency

Open HH Envelope Time

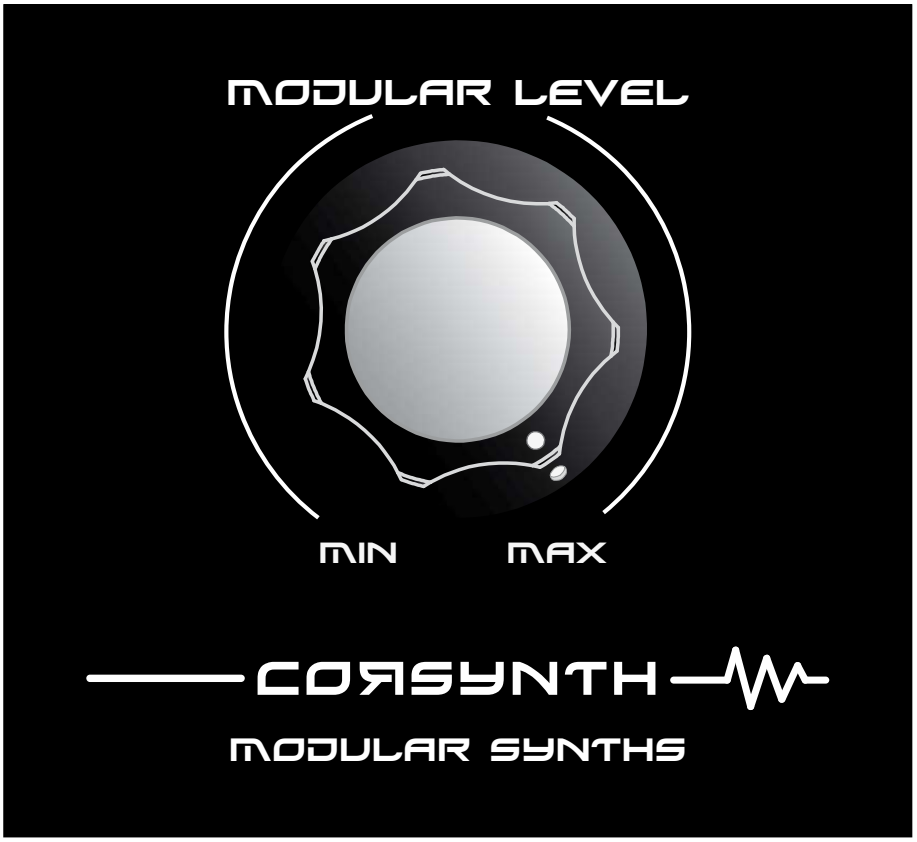
Noise level

MU power connector

MOTM power connector

TECHNICAL DATA

Module Format : 5U, MU format (Synthesizers.com, Moog)
Module Width : 2 MU (Moog unit)
Module Depth : 52 mm (2,05 inches)
Power : +15V@70mA , -15V@60mA
Power connectors : MU, MOTM (4 pin)


MODULAR LEVEL
MIN
MAX
CORSYNTH
MODULAR SYNTHS