



BLAKNBLU

MODULAR SYNTHESIZERS

FOXTROT DUO²



INSTALLATION

Be sure to turn off rack power before starting installation. Please observe precautions for static sensitive devices when handling the module.

Foxtrot Duo² uses a 16-pin Doepfer standard power cable. Please take care to ensure that the cable is fitted the correct way round.

If using the supplied power cable, the plastic lug on the top of the cable connector should fit into the slot in the plastic shroud around the PCB connector.

CONTROLS

FILTER TYPE SWITCH

Foxtrot Duo² has a choice of three classic filters.

Setting the Filter Type switch to LD selects a Moog style, 4th order ladder filter, based on the circuit in the Minimoog.

The SK setting selects a 'Sallen-and-Key' filter based on the circuit used in the early Korg MS-20.

SV is a State Variable filter based on the Oberheim SEM filter.

BP<-LP->HP CONTROL

Each filter type can be continuously varied from Band Pass through Low Pass to High Pass using this control, extending the capabilities of the original analog designs on which the Foxtrot filters are based.

There is a detent at the LP position so that you can be sure the response is truly just low pass. A setting half way between Low Pass and High Pass gives you a notch filter – the notch characteristics vary between the filter models, but can be used to produce interesting phasing effects, for instance.

CUT OFF FREQUENCY CONTROL

Unsurprisingly, the CUTOFF FREQUENCY knob controls the static cutoff of the filter. Fully anticlockwise is the lowest frequency (around 20Hz) and fully clockwise is the highest (around 20kHz depending on the filter model). Cutoff frequency is also controlled by the V/OCT input jack and the CUTOFF CV jack, with its attenuator GAIN CO. The V/OCT input can be used to track the cutoff frequency to pitch. There is a third cutoff CV available using the AUX CV input (see below).

RESONANCE CONTROL

This controls the filter Resonance – sometimes called Q, Peak, or Emphasis. The three different filter types really show their separate characters when you turn up the resonance.

BOOST SWITCH

The classic analog filter designs that Foxtrot Duo² models have various sources of non-linearity – in other words, bits of circuit that don't behave perfectly, introducing distortion to the audio signal. The Moog ladder filter has gentle distortion in each of its ladder 'rungs'. The Korg design actually has a diode based clipper – similar to the circuit in guitar fuzz pedals.

Much of the character of the filters come from these 'imperfections' – they are why these classic filters sound so good.

Foxtrot Duo² accurately mimics these non-linearities and includes a Boost switch, to overdrive the filters for even more distortion. Note that overdriving filters tends to decrease the effect of resonance. Foxtrot Duo² compensates for this effect (to some degree) by increasing the maximum resonance when Boost is enabled. It's worth experimenting with turning Boost on, but then using the input gain pots to reduce the input level for different effects.

CLIPPING LED

With high audio input levels – particularly if you are using both inputs, and with some filter settings – it's possible for the filter to exceed the nominal Eurorack output level, so a soft-clipping circuit is included in each output. When the circuit is active, the Clipping LED illuminates. Unless you like the effect (!) you can reduce the clipping by turning down the audio inputs using the attenuator knobs GAIN L and GAIN R.

AUX CV MODE SWITCH

The AUX CV input (with its attenuator GAIN AUX) can be selected to control one of three filter functions.

- When set to MIX the AUX CV controls the sweep from band pass to low pass to high pass, centred on the setting of the BP<-LP->HP knob.
- When set to Q, the AUX CV controls filter resonance. Again, the CV acts as an offset to the physical Resonance control, positive CVs increasing resonance and negative CVs decreasing it.
- Setting the switch to CO allows the AUX CV to act as another cutoff frequency CV, adding to the V/OCT and CUTOFF CV inputs.

OFFSET KNOB

The OFFSET knob is set to zero when it's in the 12 o'clock position – there is a 'dead band' around this centre position so you can be sure it's 'off'.

The OFFSET raises the cutoff frequency of one channel's filter and lowers the other depending on which way it's turned from the centre position. Along with its OS CV jack input and GAIN OS attenuator this can give the effect of a frequency based pan. Flicking to Mono, of course, gives you two filters on one signal. Here the OFFSET control can be used for some fantastic effects, from formant sounds to unusual sweeps.

SPECIFICATIONS

Width: 10HP

POWER CONSUMPTION

+12v: 200mA

-12v: 50mA

+5v: 0mA

Inputs:

Signal [Zero attenuation]: $\pm 5\text{v}$ nominal, $\pm 12\text{v}$ max

V/OCT CV Left [Zero attenuation]: Volt per Octave

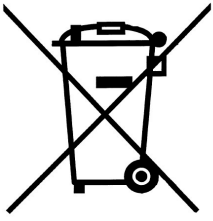
CUTOFF CV Right [Zero attenuation]: $\pm 5\text{v}$ nominal

AUX CV [Zero attenuation]: $\pm 5\text{v}$ nominal

Outputs:

Dual/Stereo: $\pm 5\text{v}$ nominal, $\pm 12\text{v}$ max

IMPORTANT SAFETY INSTRUCTIONS



Correct disposal of this product:

This symbol indicates that this product must not be disposed of with household waste according to WEEE Directive (2012/19/EU) and your national law. This product should be taken to a collection centre licensed for the recycling of waste electrical and electronic equipment (EEE).

We may change the specifications and operation of our products at any time during their development and production, so we do not guarantee that the information given in this document is accurate or complete.