

KOMA Elektronik SVF-201

Analogue State Variable Filter



DEAR CUSTOMER,

Thanks for purchasing our latest brainchild, the SVF-201 Analogue Vactrol State Variable Filter! We are very happy you decided to add a nice shade of white (with backlit knob) to your Eurorack Modular system!

We tried to make this module just as versatile as our other products and are confident we succeeded in that! Before you get started, please let us introduce ourselves to you...

We are KOMA Elektronik, we come from Berlin in Germany, a town filled with musicians, producers, artists and remixers. Music is everywhere. We make music ourselves as well, sometimes successful, sometimes less successful, but we have the time of our lives doing so. And that for us is what it's all about: the mere fun of creating sounds nobody else made before; the fun of crossing all borders and let your imagination go, the fun of exploring musical boundaries and not looking back! We truly believe in this and that's why our products are not standard and don't sound standard. That sometimes gets us boo'd, but hey: you win some, you lose some.

Now wire up that filter and get funky!

All the best from Berlin,

The KOMA Elektronik Team

GETTING STARTED

Unpack your new gadget

The package comes with the SVF-201 filter module, a 16-pole ribbon cable with connectors, a small bag with four screws and washers for front panel mounting and this manual. Save the box and packaging material in case you ever need to ship your module or lend it to a friend!

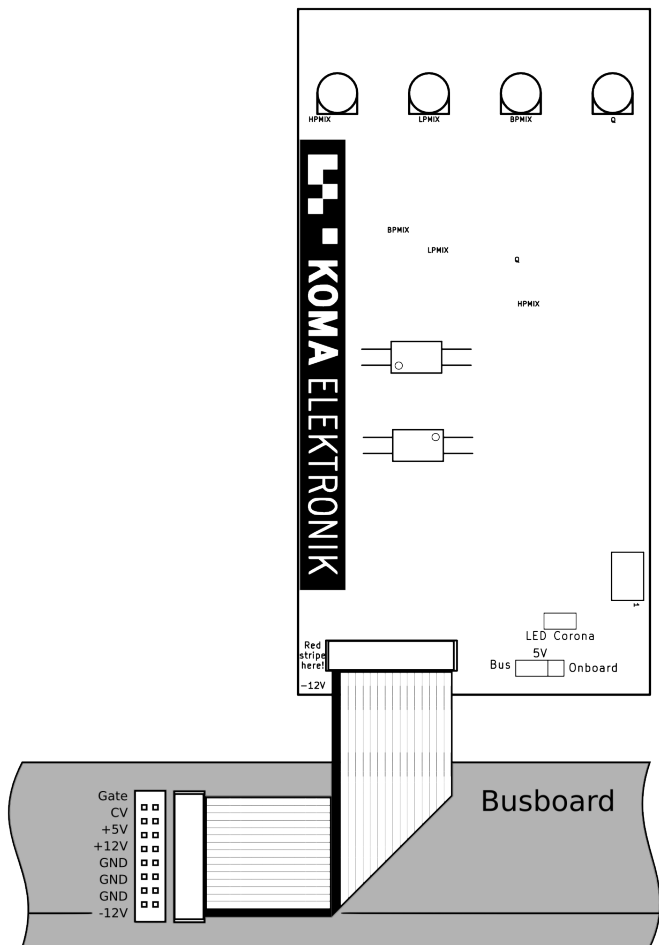
Connections

First off; be sure that the bus board of your system is unpowered. Take the connector cable and insert it into the bus board of your modular system. Be very careful when doing so because it is easy to shift the connector and place it wrong.

The red marked side needs to be connected on the lower side of a Doepfer bus board and on the marked side of the module (-12V rail). If attached correctly the keyed header will have the right orientation for keyed power systems (e.g. uZeus). See the picture on the next page for more clarity.

Power up

Power up your system and check if all supply rails are up and running (+/-12V and possibly +5V), often there are indication LEDs on the bus board showing you if the rails are working properly. When the power is connected properly, a white light – a nice nimbus - underneath the big Cutoff knob should light up.



FEATURES

Input Attenuator / Gain

The Input Attenuator / Gain control defines the amplitude of the signal that will travel into the filter. At a counter-clockwise (CCW) position there will be no signal going into the module at all, at around 9 o' clock the signal will be at unity gain and at full clockwise (CW) position the signal will be boosted by about +6dB.

Cutoff

The use of the SVF-201 is very straight forward. There is the CUTOFF knob with which you set the cutoff frequency for the filter, simultaneously for all three filter characteristics. The full CCW position sets the cutoff frequency to the lowest and the full CW position to the highest frequency.

Resonance

The RESONANCE knob sets the Q of the filter, better known as resonance. The resonance of a filter determines the gain increase of the signal at the cutoff frequency. Set it to low (CCW) to leave the signal gain at cutoff frequency at zero and turn it to CW to hear plenty of resonance at the given cutoff frequency.

Be aware of the fact that the filter will start self-oscillating when you are at or near maximum resonance!

Backside User Settings

On the backside of the module there are two jumpers and an extra 6-pin connector available for some settings:

LED Corona

If you don't like the white light around the Cutoff knob simply take out the jumper above 'LED Corona' (and try not to lose it!).

+5V rail choice

If you have a +5V power supply on your bus board rails and you want to use it with the KOMA Elektronik SVF-201 then you can change the second jumper setting from 'Onboard' to 'Bus'. Don't worry, the two +5V rails can never be connected together, regardless of how you place the jumper.

ISP programming header for Mix Out

If you have access to an ISP programmer and you are familiar with programming micro controllers you can use the 6-pin ISP header for connecting your programmer to the module. You will find the pre-loaded code as well as some alternatives on our homepage at www.koma-elektronik.com.

Warning!

Please do not touch or change the four trimmers on the top as they are already set to best filter behavior and it is complicated to reset them after you turned them (also just a little bit), so please just safe yourself the hassle and stay away from these trimmers!

INPUTS & OUTPUTS

Input

This is the audio input to the filter, it's AC coupled and goes together with the Input Attenuator / Gain knob described above. There's plenty of gain here, so take care when setting the input level if you're not looking for distorting your signals. Overdriving the input can get you amazingly rich and experimental sounds though, so try it out once and see if you like it!

Cutoff

This is the CV input for cutoff modulation. This input reacts to bipolar CVs, internally only a 5V peak-to-peak signal is processed, so every CV signal exceeding a voltage of 5Vpp will have to be attenuated to use the full range of the CV input.

Resonance

This is the CV input for resonance (Q) modulation. It has the same specifications as the Cutoff CV input.

Select

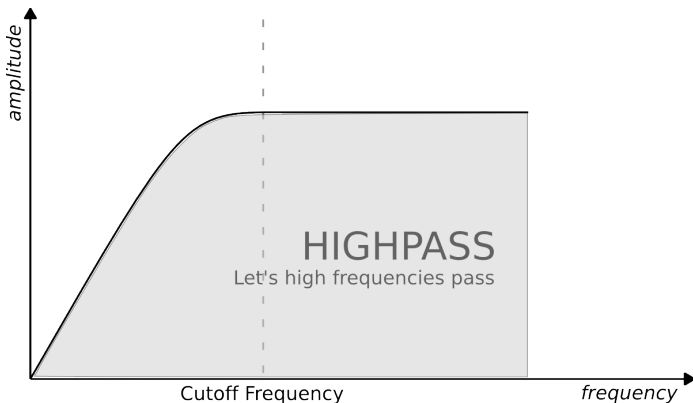
This is the CV input to select which output will be present on the Mix Out audio output. This CV input accepts 0 – 5V (unipolar), please refer to the explanatory graph below to see the effect of the control voltage on the output. If there is no CV signal sent into the input in the Select jack, the attenuator acts as a normalised CV source from 0 – 5V for manual sweeps through the filter characteristics.

LP Out / BP Out / HP Out

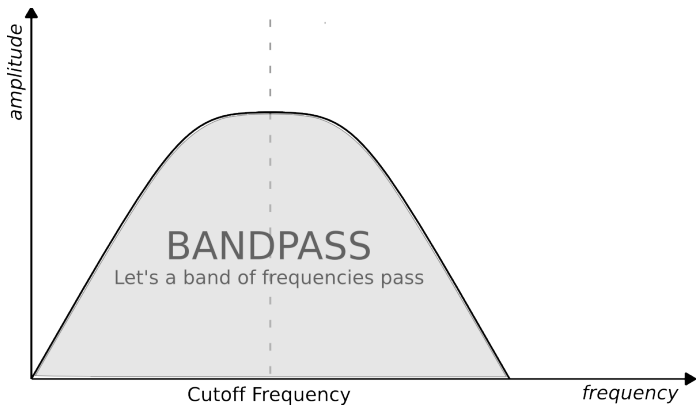
These are the three outputs for the corresponding filter characteristics. All three outputs are available at the same time without the need to switch anything around. When changing the cutoff frequency or the resonance of the filter you change these features for all of the outputs simultaneously. Speaking figurative, they are three different taps from the same pipe system.

To freshen up your memory about filter characteristics, look at the diagrams below.

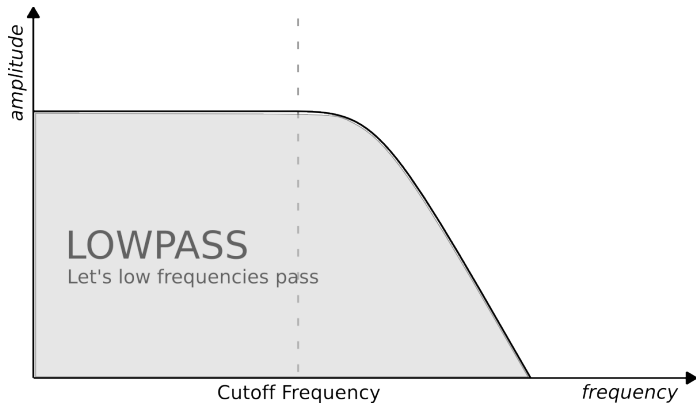
High Pass (HP Out)



Bandpass (BP Out)



Low Pass (LP Out)

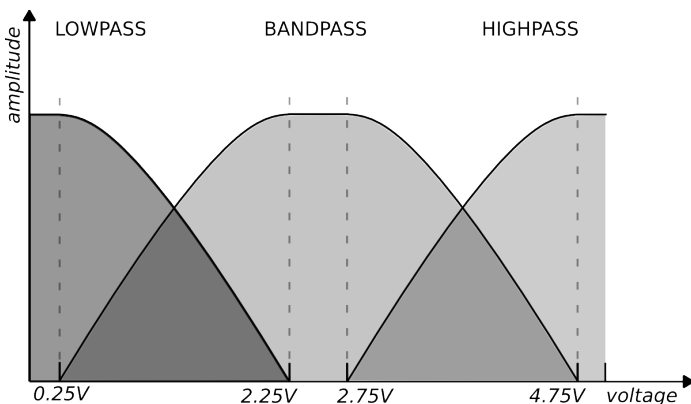


Mix Out

The Mix Out is a special output of the SVF-201 which contains all three of the above outputs (LP, BP and HP). You can sweep continuously through these three outputs with a control voltage signal from 0 – 5V. The diagram below shows the corresponding loudness curves of the filter characteristics in correlation with the CV input.

This output has more internal gain than the three different single outputs, so signals taken from this output will have more overdrive / distortion than their respective partners. The signal levels themselves are identical though.

Mix Out (LP / BP / HP Mixed Out)



WARRANTY

KOMA Elektronik warrants its products to be free of defects in materials / workmanship and conforming to specifications at the time of shipment for a period of two years from the date of purchase. During the warranty period, any defective products will be repaired or replaced at KOMA Elektronik's option, on a return-to-factory basis. This warranty only covers defects that KOMA Elektronik determines are no fault of the user.

Returning Your Product

You must obtain prior approval in the form of an RMA (Return Material Authorization) number from KOMA Elektronik before returning any product. Email support@koma-elektronik.com to request the RMA number. All products must be packed carefully and shipped with all the originally sent content. Sorry, the warranty will not be honored if the product is not properly packed. Once you have received the RMA number and carefully packed your product, ship the product to KOMA Elektronik and include your return shipping address.

What will we do

Once received, we will examine the product for any obvious signs of user abuse or damage as a result of transport. If the product has been abused, damaged in transit or is out of warranty, we will contact you with an estimate of the repair cost.

Warranty work will be performed and KOMA Elektronik will ship and insure your product to your address free of charge.

How to initiate a warranty return

Please initiate your warranty online by sending an email to support@koma-elektronik.com.

If you do not have web access, fill out your personal information on a letter and mail to:

KOMA Elektronik
Mahlower Straße 24,
12049 Berlin-Neukölln
Germany

SUPPORT

When you have a question concerning your KOMA Elektronik product, please get in touch with us on support@koma-elektronik.com or give us a call on +49 (0)30 91557028 (mon - fri 10AM – 6PM (Berlin, Germany time)).

THANK YOU

Many many thanks to Navs for being a great counselor and friend and also thanks to Dan Green from 4ms for giving us some tips and insight on technical development details for Eurorack modular systems!