

melt



USER GUIDE

WEEE registration: DE 34716564

Made in Germany



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About Melt

MELT is a four-pole analogue low-pass filter module for Eurorack designed with a variable character and an extensive feature set that makes MELT the ideal final stage for a traditional synth voice: Pair MELT with your favourite oscillator plus a few modulation sources, and you have the foundation of a complete monophonic synthesizer.

The unique CORE TEMPERATURE control lets you adjust the character from soft to truly wild!

'Modulate the modulator' with a VCA in the FM1 cutoff CV path. A sequenced or stepped random CV modulating the envelope depth can add interesting dynamics to your sequence.

The extra VCA in the first audio input path gives you yet another way to enrich your sonic palette. For instance, you could add overtone-rich sounds with their own envelopes to emphasize transients or subtly shift the amount of a sub-oscillator.

You can use the auxiliary input and VCA to inject noise bursts for percussion synthesis, or add a pure sine wave fundamental like in the classic Yamaha CS80, or indeed mix any signal you like into MELT's output VCAs.

Enjoy!

- Kay Knofe, Urs Heckmann, Sebastian Greger, Jan Storm, Sebastian Hübert

Specifications

Width: 14 HP

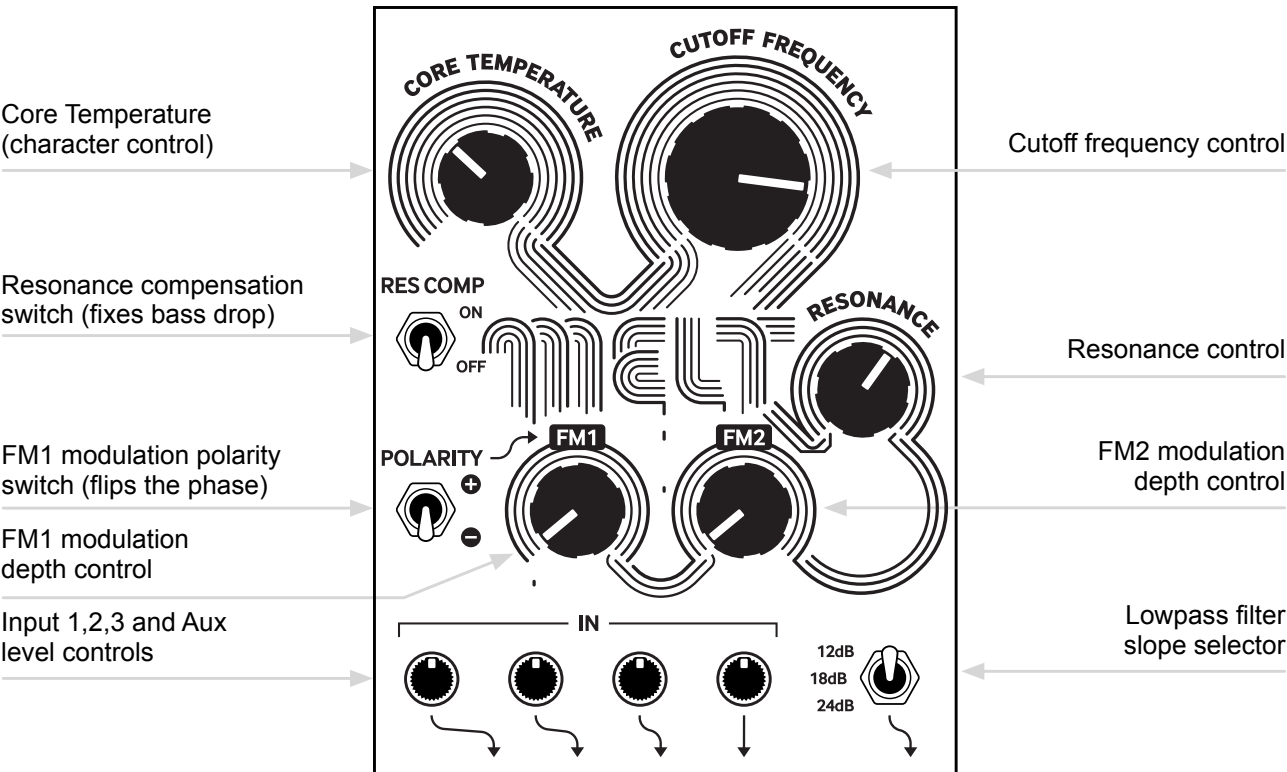
Depth: 32 mm (with power cable attached)

Power consumption: 70 mA (+12 V) / 70 mA (-12 V)

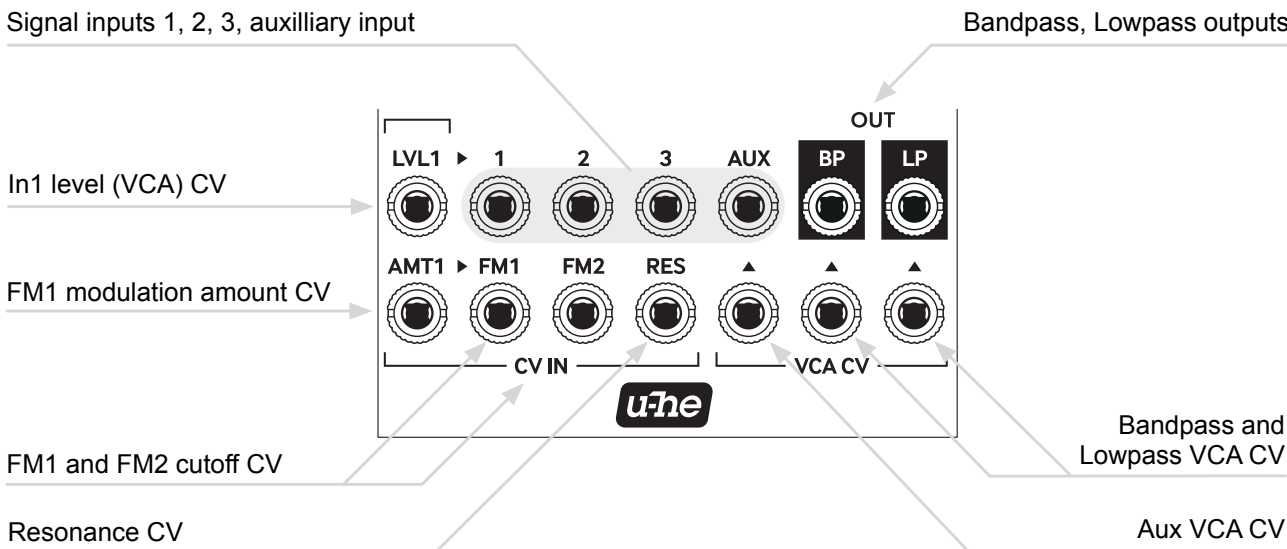
VCA CV maximum level: 7.5V

Panel Overview

Knobs & Switches



Jack Sockets



Details

CUTOFF FREQUENCY

Manual control of the filter frequency.

CORE TEMPERATURE

Asymmetric soft clipping in the filter core generates musically pleasing overtones, and the gain staging around this circuitry is managed by CORE TEMPERATURE: it boosts the input to drive the filter into a much "hotter" range while compensating at the output to keep the levels manageable.

At its lowest setting, the filter remains relatively clean for a typical input signal. Higher settings generally introduce more distortion. However, the sound also depends on input level, the amount of Resonance, and whether or not RES COMP is active.

We recommend exploring the full range of this control with various audio material rather than simply leaving it at maximum.

Tip: The effect is often more pronounced at lower slope settings, especially 12 dB/oct.

RESONANCE

Manually controls the amount of internal feedback. At low Core Temperature settings, self-oscillation occurs relatively early in the knob's range. This is intentional, as it leaves enough headroom for adding more resonance when the Core Temperature is set higher.

RES COMP

Resonance compensation. Cascade-type lowpass filters inherently lose signal level when the resonance is turned up, which is often perceived as a loss of 'oomph'. In MELT you can effectively remove the effect by simply switching RES COMP on.

In combination with Core Temperature, this switch can dramatically affect the sonic character.

FM1 and FM2

Signals received at the FM1 and FM2 inputs modulate the cutoff frequency. The FM2 knob is a standard attenuator, while the FM1 signal path also provides polarity inversion and voltage-controlled modulation depth via the AMT1 input—see the flow diagram on the next page.

Note: AMT1 adds an offset to the FM1 setting: Positive CV increases the modulation depth, while negative CV reduces it. As a result, positive CV can introduce FM1 modulation even when the knob is turned all the way down.

IN (inputs 1, 2 and 3)

The main audio inputs to the filter. Input 1 includes a VCA, with the corresponding knob acting as an attenuator for the LVL1 CV input. When no signal is patched into LVL1, a normalised 7.5 Volt signal keeps the VCA open. Inputs 2 and 3 each have a simple attenuating level control.

AUX (auxiliary input)

AUX signals bypass the filter and are routed to both outputs instead. If you like, you can prevent AUX from being sent to one of the outputs by removing the corresponding jumper inside the unit.

The AUX knob controls the level of the incoming control voltage via a dedicated VCA. If no CV is patched in here, a normalised 7.5 Volt signal keeps the VCA fully open.

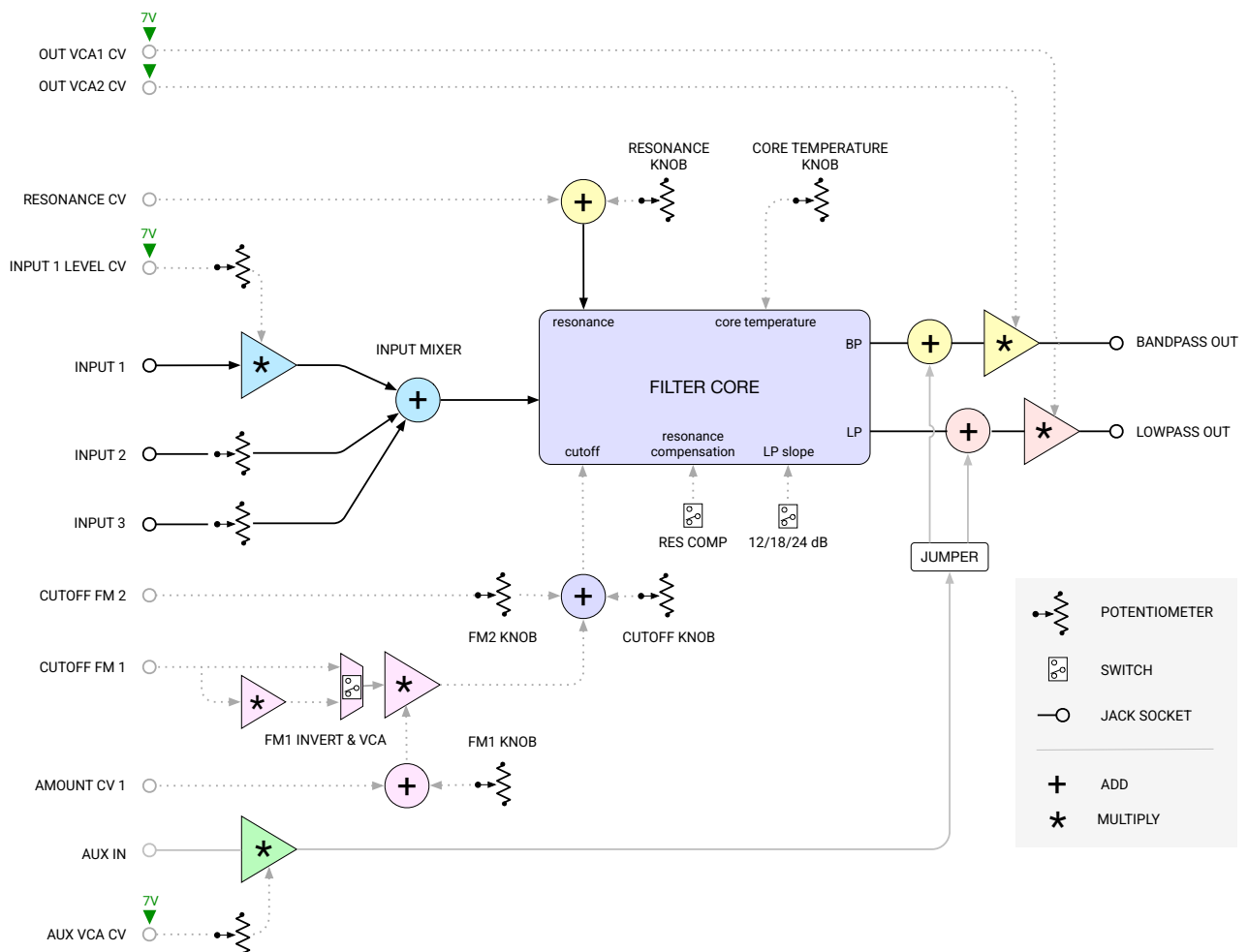
Lowpass output and slope selector

The lowpass output has a VCA controlled by the corresponding VCA CV input. If no CV is patched in here, a normalised 7.5 Volt signal keeps the VCA fully open. The slope selector offers 12, 18, or 24 dB/oct filtering. Shallower slopes sound more aggressive, especially at higher Core Temperature settings. Note: At 18 dB/oct the output is phase-inverted.

Bandpass output

The bandpass output has a VCA controlled by the corresponding VCA CV input. If no CV is patched in here, a normalised 7.5 Volt signal keeps the VCA fully open.

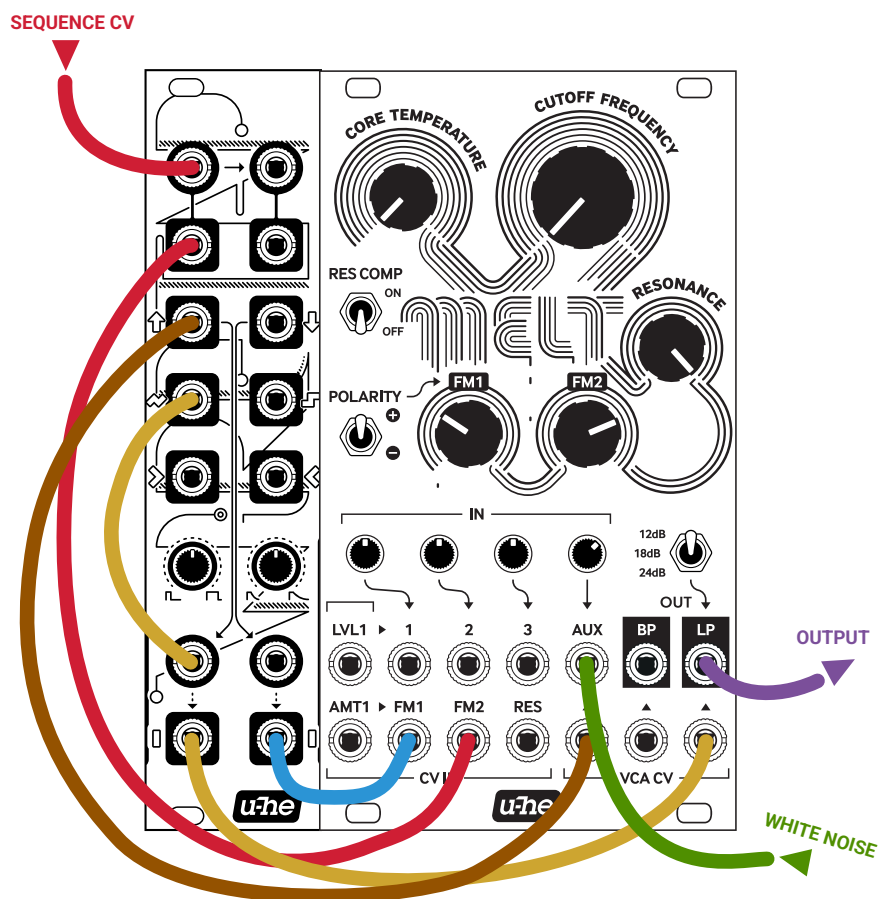
Signal Flow



Example Patches

Drums / percussion with Wiretap

Set to self-resonate, MELT can be used as a percussion synthesizer:



Wiretap generates gates and envelopes from a sequence—or any stepped CV.

The CV patched into Wiretap is also routed to MELT's FM2 input so that the cutoff frequency follows the original sequence (red patch cords): Set FM2 and cutoff frequency to taste.

Any change in the sequence will cause Wiretap to trigger its envelope 1, which is used to open MELT's output VCA (yellow patch cords).

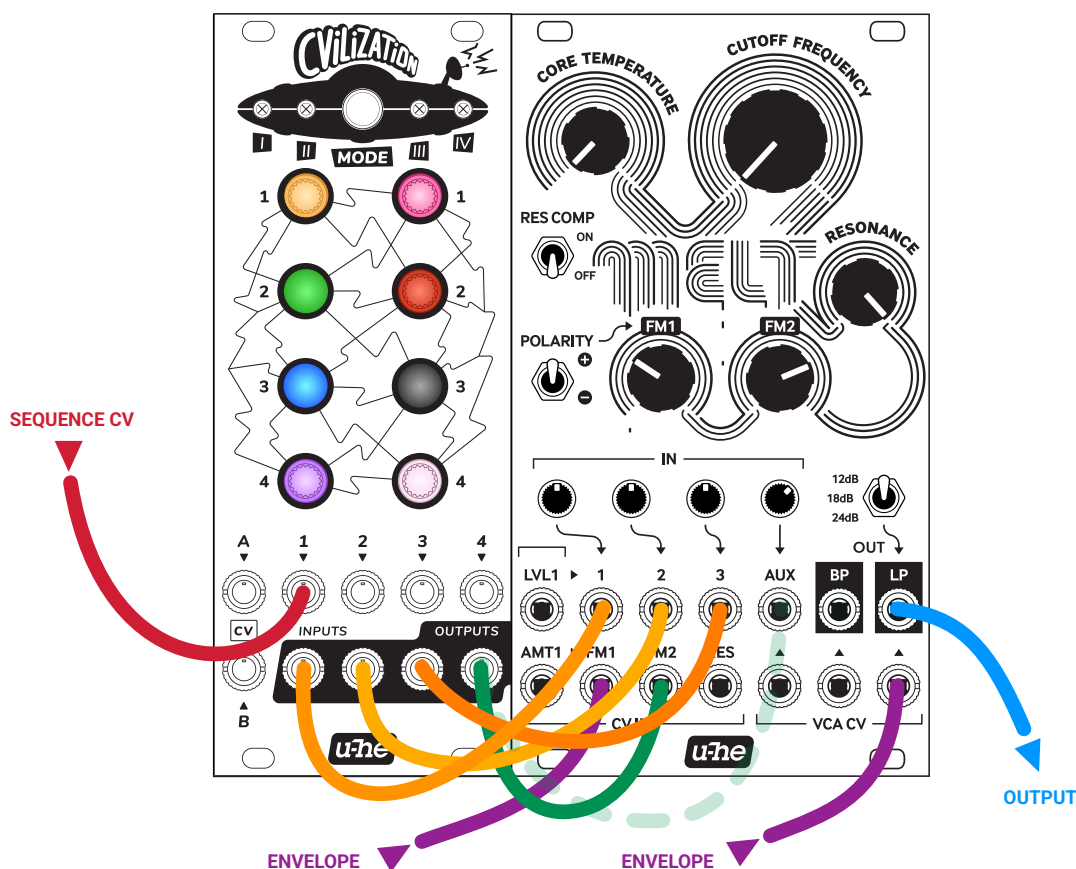
Falling CVs in the sequence cause Wiretap to trigger envelope 2, modulates the cutoff for a typical percussive sweep (blue patch cord). Set FM1 to taste.

White noise is patched into AUX to add snare-like sounds (green patch cord). Wiretap's rising gate can also shorten the noise by controlling the AUX VCA CV input (brown patch cord).

Rising CVs in the sequence trigger a "hi-hat", while falling CVs trigger a "bass drum".

Quad VCO patch with CVilization

Here's a simple patch using MELT in combination with CVilization in Quad VCO mode. (If, for reasons best left unexplored, you don't own CVilization yet, any conventional oscillators will do!)



CVilization's VCO1, VCO2 and VCO3 are fed into MELT's three audio inputs (orange patch cords). VCO4 is patched into FM2 (green patch cord).

The FM1 input and the lowpass VCA are both receiving an envelope CV (purple patch cords). With only VCO1 to VCO3 involved, this is about as basic as a monophonic patch can get.

Adding VCO4 as a modulation source for FM2 gives it a nice twist: Tune VCO4 down for raspy, audio-rate LFO-style modulation, or tune it higher for a metallic filter-FM sound.

Alternatively, patch VCO4 into the AUX input so it can be blended (unfiltered) into the mix.