SOUL SAMPLES

REACTOR

DYNAMIC SATURATION ENGINE

USER MANUAL · VERSION 1.0



AU · VST3 — macOS · APPLE SILICON & INTEL

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1 Welcome

REACTOR is a saturation engine built around one idea: a single ENERGY control that travels continuously from gentle air to full breakdown — and reacts to what you play.

Instead of switching between separate distortion types, REACTOR morphs one carefully tuned analog-style circuit through four regions — **AIR**, **BODY**, **EDGE** and **BREAK**. REACT lets your transients push the circuit harder, GRAVITY decides whether the lows or the highs feed the harmonics, MOTION adds slow organic drift, and AUTO GAIN keeps the loudness steady so you judge tone, not volume.

Everything is linear-phase oversampled, latency-compensated and safe to automate. Thank you for choosing REACTOR — we hope it sets your mixes on fire.

2 Quick start

1. **Insert REACTOR** on a track or bus. It opens on the **Init** preset: ENERGY 30 %, AUTO GAIN on, oversampling 4x.
2. **Turn ENERGY.** Drag the ring around the orb up or down. Below 25 % (AIR) it adds openness, 25–50 % (BODY) thickens, 50–75 % (EDGE) adds presence and drive, above 75 % (BREAK) it crushes and transforms.
3. **Add REACT** to let the dynamics of the source push the circuit: drums and plucked sources come alive, quiet passages stay clean.
4. **Shape it** with GRAVITY (where the harmonics come from) and TONE (darker or brighter result).
5. **Blend** with MIX for parallel saturation. Press **DELTA** any time to hear only what REACTOR adds.

> **Tip:** leave AUTO GAIN on while you dial in the sound. REACTOR then keeps the loudness close to the original, so you hear the character change rather than a volume jump — louder always sounds "better".

3 System requirements & installation

ITEM	REQUIREMENT
Operating system	macOS 11 Big Sur or later
Processor	Apple Silicon or Intel (universal binary)
Plug-in formats	Audio Unit (AU) and VST3 — 64-bit hosts
Channels	Mono and stereo
Display	1152 × 768 at 100 %; scalable from 75 % up to 200 % (as far as your screen allows)

Installing

1. Double-click the **Soul Samples REACTOR** installer (.pkg).
2. Read and accept the licence agreement, then click **Install** and enter your Mac password.
3. Open your DAW. Logic Pro and other AU hosts scan new plug-ins on start-up; in other hosts run a plug-in rescan if REACTOR does not appear.
4. Find REACTOR under **Soul Samples** in your plug-in list (Distortion category in many hosts).

The installer places the files here:

FILE	LOCATION
Audio Unit	/Library/Audio/Plug-Ins/Components/REACTOR.component
VST3	/Library/Audio/Plug-Ins/VST3/REACTOR.vst3
Your presets	~/Music/Soul Samples/REACTOR/Presets (created when you save your first preset)
Settings	~/Library/Application Support/Soul Samples/REACTOR (window size, favourites)

Uninstalling

Delete the two plug-in files listed above. Your presets and settings stay in your user folder — delete those two folders too if you want to remove everything.

4 The interface at a glance



1. Preset browser · ♥ favourite · ‹ › step
2. Menu: save/delete presets, compare, size
3. Bypass ⏻
4. Undo / Redo
5. A / B compare
6. INPUT drive
7. OUTPUT level
8. SAFE output ceiling
9. Input and output meters
10. ENERGY ring with the orb
11. REACT
12. GRAVITY
13. MOTION
14. TONE
15. MIX
16. AUTO GAIN
17. DELTA
18. Spectrum analyzer
19. OVERSAMPLING
20. Resize corner

> **The orb is alive.** Its colour follows the energy actually hitting the circuit (ENERGY plus the REACT push), its glow follows the output level, and MOTION makes it drift. It is a picture of what you hear.

5 Controls in detail

ENERGY 0 – 100 %

The heart of REACTOR: the amount and character of saturation in one move. The circuit morphs smoothly — there are no steps between regions. The readout under the orb shows the value and the region, for example **58 % · EDGE**.

REGION	RANGE	CHARACTER
AIR	0 – 25 %	Open · smooth. Gentle, mostly odd harmonics; adds sheen and glue without obvious distortion.
BODY	25 – 50 %	Thick · rich. Asymmetric warmth with even harmonics; weight and density.
EDGE	50 – 75 %	Presence · drive. A firmer knee that brings parts forward; audible drive.
BREAK	75 – 100 %	Crush · transform. Dense, broken-up saturation; a built-in smoothing filter keeps the top from turning to fizz.

REACT 0 – 100 %

Makes ENERGY respond to the music. Transients and loud passages push the circuit further towards EDGE and BREAK; quiet parts fall back towards AIR. The push appears as a bright extension of the ENERGY ring. At 0 % ENERGY stays exactly where you set it.

GRAVITY −100 … +100 %

Decides *where* the harmonics come from, not how much there is. Negative values (**FUNDAMENTAL**) let the low end drive the circuit — thick, bass-led saturation. Positive values (**HARMONICS**) let the upper mids and highs drive it — bite and articulation. The tilt is undone after the circuit, so the clean signal keeps its balance; only the saturation is re-weighted. At 0 % (**NATURAL**) GRAVITY is completely out of the signal path.

MOTION 0 – 100 %

Adds slow, organic instability to the circuit — like analog hardware that never sits perfectly still. It is not an LFO: the movement never repeats and never pumps the level. Each REACTOR instance moves differently, yet a session always renders the same way on every bounce. At 0 % the circuit is static.

TONE −100 … +100 %

A gentle, musical high-shelf after the saturation: **DARK** softens the top (down to −12 dB), **BRIGHT** lifts it (up to +6 dB). The lows are not touched, so bass weight stays put. 0 % (**NATURAL**) is a perfect pass-through.

MIX 0 – 100 %

Blends the clean (DRY) and saturated (WET) signal. The dry path is delayed to match the oversampling latency exactly, so parallel blends never phase or comb-filter. At 0 % the output is the clean input, sample-for-sample.

INPUT and OUTPUT ±24 dB

INPUT sets how hard the signal hits the circuit; **OUTPUT** sets the final level. Hover over either knob to read its value in dB. With AUTO GAIN on, INPUT works as a pure drive control — its level change is compensated automatically.

AUTO GAIN

Keeps the perceived loudness steady while you change ENERGY and INPUT. It learns the long-term level of your material and then barely moves, so it never pumps or chases the dynamics. Turn it off when you want saturation to add level, for example on a bus that feeds a limiter.

DELTA

Plays only what REACTOR adds — the processed signal minus the clean one. Use it to hear exactly which harmonics you are adding and where. Remember to switch it off: DELTA is never saved in presets.

SAFE

A soft ceiling just under 0 dBFS at the very end of the chain. Below −1 dBFS it does nothing at all; above, it rounds peaks off smoothly so the output never crosses 0 dBFS. Handy with REACT and BREAK, where peaks can jump.

Bypass ⏻

Switches REACTOR off with a short, click-free crossfade. The bypassed signal keeps the same latency, so nothing shifts in time and parallel tracks stay phase-aligned. Your host's own bypass button controls the same switch (in hosts that support "soft bypass"). The power symbol glows orange while REACTOR is working and turns grey when bypassed.

OVERSAMPLING OFF · 2x · 4x · 8x

Runs the circuit at a higher internal sample rate to keep harmonics from folding back as harsh aliasing. Linear-phase filters keep the sound transparent; the cost is CPU and a small, fully compensated latency.

SETTING	LATENCY	USE
Off	0 samples	Lowest CPU; fine for AIR and BODY, tracking with zero latency
2x	47 samples	Light use on many tracks
4x	54 samples	Default — the best balance
8x	56 samples	Cleanest highs for EDGE/BREAK on bright material and final mixes

Switching is click-free. Oversampling is a per-instance setting: it is not stored in presets and cannot be automated (a latency change during playback would make the host re-align tracks).

Meters and analyzer

The two LED columns show the input (left panel) and output (right panel) peak levels from −48 to 0 dBFS. If the output reaches 0 dBFS, its top segment stays red until you click the meter. The analyzer shows the clean input in grey and the harmonics REACTOR adds in orange, so you can see where the saturation lands. The analyzer and animations pause while the window is hidden, to save CPU.

6 Presets

Click the preset name to open the browser. **Init** sits at the top, then **Favourites**, then the factory categories — hover a category to open its presets — and finally your own **User** presets. The arrows ‹ › step through every preset in order. A ***** after the name means you have changed something since loading it.

CATEGORY	PRESETS
Mix Bus	Air Polish · Warm Glue · Warm Movement · Tape Kiss
Bass	Thick Bass · Fuzz Bass · Sub Weight · Growl Bass
Drums	Punchy Drums · Parallel Crush · Snare Crack · Kick Thump
Vocals	Vocal Presence · Vocal Warmth · Vocal Grit · Vocal Air
Guitar	Edge Guitar · Clean Edge · Crunch Amp · Fuzz Wall
Keys	Piano Warmth · Rhodes Bark · Organ Drive · Keys Air
Synth	Living Synth · Analog Heat · Pad Bloom · Lead Scream
Creative	Broken Radio · Lo-Fi Crush · Breathing Fuzz · Glass Shards

Favourites

Click the heart ♥ next to the preset name to add the current preset to Favourites; click it again to remove it. Favourites are shared by every REACTOR instance on your Mac.

Saving, replacing and deleting

- ⋮ → **Save preset…** opens the save dialog. After editing a factory preset, a free name such as “Warm Glue 2” is suggested.
- Factory names are reserved, so a user preset can never be confused with a factory one.
- Saving under the name of one of your own presets asks before replacing it.
- ⋮ → **Delete preset** removes the current user preset (after confirmation) and returns to Init. Factory presets cannot be deleted.
- ⋮ → **Open presets folder** shows your presets in Finder — handy for backups or sharing. Presets are small `.reactorpreset` files; after copying files in, choose ⋮ → **Rescan presets**.

> **What a preset stores:** ENERGY, REACT, GRAVITY, MOTION, TONE, MIX, INPUT, OUTPUT and AUTO GAIN. Oversampling, DELTA, SAFE and Bypass are left as they are, so loading a preset never changes your latency or monitoring.

7 Compare, undo and window size

A / B compare

REACTOR holds two complete settings. Click **A** or **B** to switch between them instantly; the first time you open B it starts as a copy of A. Use ⋮ → **Copy A to B** or **Copy B to A** to duplicate a setting before you experiment. Both slots are saved with your session.

Undo / Redo

The ↶ ↷ arrows step back and forward through up to 100 changes: knob moves, typed values, preset loads and A/B switches. Host automation does not create undo steps.

Window size

Drag the small grip in the bottom-right corner to resize the window freely (the proportions stay fixed), or choose a size under ⋮ → **Interface size** (75 % to 200 %). Only sizes that fit your screen are offered. REACTOR remembers the size for new instances.

8 Mouse & keyboard reference

ACTION	RESULT
Drag up/down or left/right	Change a knob or ENERGY
Shift + drag	Fine adjustment (5× slower)
Double-click	Type an exact value — e.g. **58** , **-35%** , **+3.5 dB** ; Return applies, Esc cancels
Option (⌥) + click	Reset to the default value
Mouse wheel / trackpad	Change the value under the pointer
Hover INPUT / OUTPUT	Show the value in dB
Click the output meter	Clear the clip indicator

REACTOR never captures your keyboard: Space, Return and the arrow keys keep controlling your DAW after you click on the interface. The only exception is a text field you have opened yourself (value entry or preset name).

9 Tips for common sources

Mix bus

Stay in AIR or low BODY (10–35 %), REACT 10–30 %, oversampling 4x or 8x. A touch of MOTION adds life without movement you can point at.

Drums

REACT is your friend: 50–90 % makes hits bloom while the room stays clean. For parallel crush, push ENERGY into BREAK and bring MIX down to 25–40 %.

Bass

GRAVITY towards FUNDAMENTAL thickens the low end; towards HARMONICS adds growl that survives on small speakers. TONE slightly DARK tames fizz at high ENERGY.

Vocals

BODY to low EDGE with GRAVITY on the HARMONICS side brings a vocal forward. Use MIX 50–80 % to keep the natural tone underneath.

Guitars & synths

EDGE and BREAK are built for these. Try 8x oversampling on bright sources, and MOTION 30–80 % for an amp or analog-synth feel.

Listen with DELTA

Not sure what a setting is doing? Press DELTA for a few seconds: you hear only the added harmonics and can judge their tone and amount directly.

10 Troubleshooting & FAQ

REACTOR does not appear in my DAW

- Make sure the installer finished and the files are in the locations listed in chapter 3.
- **Logic Pro:** open *Logic Pro → Settings → Plug-in Manager*, select REACTOR and click *Reset & Rescan Selection*.
- Other hosts: enable VST3 or AU in the host's plug-in settings and run a rescan. Some hosts (for example LUNA) need VST3 enabled first.

I hear a short flanging effect when I bypass the plug-in

Use REACTOR's own bypass ⏻ (or a host that supports soft bypass). A host that switches the plug-in off completely may only re-align latency when playback restarts — this happens with any plug-in that has latency.

The sound got louder or quieter after I turned AUTO GAIN off

That is expected: without AUTO GAIN, saturation and INPUT change the level. Use OUTPUT to match it, or turn AUTO GAIN back on.

The output meter shows red at the top

The output reached 0 dBFS at some point. Lower OUTPUT or switch on SAFE, then click the meter to clear the indicator.

How much CPU does REACTOR use?

Very little for a saturator: CPU grows with oversampling (Off is lightest, 8x heaviest). If a session gets heavy, use 2x or 4x on most tracks and keep 8x for featured parts and the final mix.

Where are my presets and can I back them up?

In *~/Music/Soul Samples/REACTOR/Presets*. Copy that folder to back them up or move them to another Mac, then use ⋮ → **Rescan presets**.

11 Support, credits & legal

Support: please contact the store where you purchased REACTOR. Include your macOS version, host name and version, plug-in format (AU/VST3) and REACTOR version.

Credits: Concept, sound design and development — Alex Goroshko, Soul Samples.

Third-party components: REACTOR is built with the JUCE framework. The interface uses the Montserrat typeface by Julieta Ulanovsky and contributors, licensed under the SIL Open Font License 1.1 (the licence text is included in the download as *Montserrat-OFL.txt*).

Licence: use of REACTOR is subject to the End User License Agreement included with the installer (*EULA.txt*).

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