

CATALYST MANUAL

THE MAIN FEATURES:

- 8 outputs offering 16bit precision CVs in a range from 0-10V
- 8 scenes per bank, 8 banks in total
- 8 LED backlit encoders for precise parameter editing
- Crossfader for scene interpolation with a convenient 60mm of travel
- Copy/Paste function for scenes
- Crossfader motion recording for up to 20 seconds
- Physical animation of the crossfader position
- 16hp
- +12V - 135mA // -12V - 17mA
- Depth: 39mm

EDITING A SCENE:

Press and hold any of the 8 scene buttons to edit each of the 8 outputs using the corresponding encoder. The encoders sense the velocity of the rotation and make big or small steps accordingly. This helps making changes and it increases their lifetime. If you press and hold an encoder while you turn it you get down to a very fine resolution. The outputs are 16 bit high resolution outputs so you can make very precise changes down to somewhere around 1/1000 volts and still smoothly interpolate between the states. I made an effort to set the rotation velocity parameters to help find very precise voltage outputs fast and help tune to precise pitches fast with a minimum amount of turns.

When you press and hold a scene button, the corresponding voltages are printed to the outputs immediately. This is also a nice way of making abrupt changes during performance. The outputs are low pass filtered to avoid clicks when jumping to a scene.

The Encoders are backlit with two LEDs, red and blue. Very dim blue represents 0V. The brightest blue represents 5V. Between 5V and 10V we go from blue through shades of purple to pure red at 10V. The voltage range is 0V-10V. At any point each of those LEDs represents the current voltage at the corresponding output jack to make sure that you always have a clear visual indication of what is going on at each output.

Pressing and holding an encoder for about 0.5 seconds mutes and un-mutes that output, that means it sets it to zero volt and hands control back to the connected module. To distinguish muted from active outputs the LED turns off completely when in mute mode in contrast to the active mode where 0V is represented by a very dim blue light. This also helps turning off LEDs that would otherwise distract you in case you are not using all 8 outputs at the same time.

ASSIGNING THE SCENE FADER:

Press and hold the left/right black button while simultaneously pressing a preset. You have now assigned the left/right side of the scene fader to a scene and the red LEDs at the scenes will indicate that. Pressing and holding the left/right button will always indicate to you which scene is currently assigned to which side of the cross fader in case you get confused.

THE THREE GREY BUTTONS AND THE PHYSICS FUNCTION:

The grey button at the top that sits between the encoders is for copying/pasting scenes. Press and hold a scene button and simultaneously press and hold the grey copy/paste button to copy that scene to the clipboard. Keep pressing the copy/paste button and you can release the scene button. The Encoders start pulsating. This indicates to you that the current scene is stored in the clipboard. While holding the copy/paste button press any scene to paste the clipboard to that scene. This is really helpful if you have a scene that you like that you want to use as a point of departure or just want to edit a few outputs instead of all of them.

Another handy function of the copy/paste button is that you can copy any interpolated state to a new preset. To do that just press and hold the copy/paste button while your scene fader is at an interesting point and press a new scene button to paste that interpolated scene there.



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The grey button to the left latches into the edit mode. Press and hold any scene to edit it, then give the grey LATCH button a short press. Now you stay in Edit mode until you press the grey LATCH button again. You can change the scene you are editing on the fly while you have the Edit mode latched.

The secondary function of the left button is to record any movement of the crossfader and any left right assignment changes for up to 20 seconds. To do that, press and hold the recording button and move the crossfader. You have to press and hold it for more than 1 second to start the playback. Recordings that are shorter than one second won't be played back, but the fader movement is recorded instantly from the moment you push the button down. To stop the playback simply hit the recording button again (for less than a second). To record crossfader assignments just assign scenes to the crossfader as described above while recording the crossfader movement as described above.

If you don't record fader assignments you can re-assign the crossfader as the crossfader movement is playing back. If you do record crossfader assignment you can still jump to scenes as described in "editing a scene". This way the module still stays somewhat interactive even when playback is going on. Also the physical functions can be activated during playback.

Press and hold the BANK button to change the bank. The pulsating LED shows you what Bank is currently selected. Pressing and holding the BANK button for more than 4 seconds activates the state saving procedure indicated by a short LED animation. All scenes, banks, and the current crossfader assignment are now stored in permanent memory and will be recalled next time you power up the module. Please note that any animation of the output voltages will be interrupted for the time of the state saving procedure.

PHYSICS:

When not holding a scene button:

- all top row encoders give you access to the friction parameter.
- all bottom row encoders give you access to the elasticity parameter.

When you turn one of the encoders with no scene button pressed all the encoder LEDs will switch to a new screen for 1 second. On this screen you see the state of the physical parameters represented as a red bar going from left to right. The encoders in this mode are also sensitive to rotation velocity. All four top row encoders give access to the friction parameter and all four bottom row encoders give access to the elasticity parameter.

This function was inspired by the Lemur "bouncing balls". The purpose is to add another option for animating the output voltages during performance. To understand this function just imagine that the actual interpolation point is not identical to the crossfader position, but it is attached to the crossfader position with an elastic rubber band. The friction parameter (top row) slows down the agility of the interpolation point, the elasticity parameter inversely adjusts the force that pulls the interpolation point towards the cross fader. When the interpolation point hits the cross fader boundary it just bounces back like a rubber ball. These functions can be combined with the recording of the fader movement.

FADER CALIBRATION:

The module comes ready calibrated. However should you experience that the fader interpolation doesn't quite reach the voltage output of the assigned preset on either side, first move the fader to the left to where you want the maximum left side interpolation point to be. Now press and hold the left side assignment button together with the bottom left encoder for about 2 seconds. Once you see the scene LEDs on the left side flashing the maximum left side interpolation point will be permanently stored. Repeat the same procedure for the right side pressing the right side assignment button and the bottom right encoder and having the fader positioned where you want the maximum right side interpolation point to be.

This calibration procedure can also be useful in case you feel like the fader throw is too long for your playing style. You can restrict the interpolation range of the fader to be as short as you like and you can move the range to a side where it feels right to you.