About unipolar and bipolar outputs

The bipolar output is not a mere scaled and offset version of the unipolar output! It is made of two bumps, a positive one occurring during the attack, and a negative one occurring during the release.

PLL mode

Hold the frequency range (B) button for 1s. Tides enters the PLL mode.

In PLL mode, a signal must be provided to the CLOCK input. Tides will adjust its output frequency to match the frequency of this signal or a multiple/division of it as set by the Frequency knob.

Hold the frequency range (B) button again to leave the PLL mode.

Tips and tricks:

• Tides works wonders as a master modulator for a classic analog VCO.
• When using Tides as an oscillator for bass sounds, try both the unipolar and bipolar outputs, and the medium and high ranges - they all sound different.
• Use the PLL mode to create just-intonation melodies on top of a drone sent to the CLOCK input.
• A different flavor of sync sounds can be obtained by patching a PWM or square source into the FREEZE input.
• Use the wavefolder on a low-frequency envelope to create bumps and bounces.
• Use the PLL mode, and trigger the CLOCK input from a rhythmic sequencer.
• In typical Buchla fashion, the low/high tide outputs can be used to chain envelopes and create complex shapes.

Calibration

1. Connect a patch cable to the FM input. Leave the other end of the cable unplugged (this prevents the normalizing to +/-1 semitone to be activated).
2. Connect a patch cable to the Level input. Leave the other end of the cable unplugged (this prevents the normalizing to full amplitude to be activated).
3. Connect a MIDI>CV interface or precision voltage source to the V/Oct input.
4. Hold the Mode switch (A) for one second. All LEDs are lit in yellow.
5. Play a C2 note, or send a 1V voltage from your CV source.
6. Press the mode switch (A). All LEDs are lit in green.
7. Play a C4 note, or send a 3V voltage from your CV source.
8. Press the mode switch (A).

The module is now calibrated for accurate V/Oct operation!
About Tides
Tides is, depending on your point of view, a voltage-controlled looping AR/AD generator which extends into the audio frequencies; or a dynamically waveshaped synth voice with the ability to go into subsonic territories.

Installation
Tides requires a -12V / +12V power supply (2x5 pins connector). The red stripe of the ribbon cable (-12V side) must be oriented on the same side as the "Red stripe” marking on the board.

The power consumption is as follows:
-12V: 5mA ; +12V: 55mA.

Online manual and help
The full manual can be found online at mutable-instruments.net/modules/tides/manual
For help and discussions, head to mutable-instruments.net/forum

Front panel

Controls
A. Mode selection. Goes back and forth between one-shot AD (green LED), looping (LED off), and one-shot AR (red LED) modes.
B. Range selection. Goes back and forth between very low (green LED), low (LED off), and audio (red LED) range.
C. Frequency/rate control.
D. Attenuverter for the FM input. When no signal is patched into the FM input, serves as a fine tuning control.
E. Waveshape of the ascending and descending segments.
F. Ratio between the duration of the ascending and descending segments.
G. Curve transformation. From 12 o’clock to 7 o’clock (counter-clockwise), applies a 2-pole low-pass filter. From 12 o’clock to 5 o’clock (clockwise), applies a wavefolder.

Inputs and Outputs
1. 2. 3. CV inputs for shape, slope, and smoothness controls.
4. Trigger/Gate input. On a rising edge, resets the waveform and starts the ascent. On a falling edge, and in AR mode, starts the descent.
5. Freeze input. A gate signal applied on this input can stop the envelope/oscillator and hold the signal.
7. FM input, controlled by the attenuverter (D).
8. Waveform amplitude CV - normalised to a constant 8V source.
9. Clock input for PLL operation.
10. 11. End of attack (high tide) and end of decay/release (low tide) outputs.
12. 13. Unipolar (0 to 8V) and bipolar (-5V to 5V) outputs.

Please refer to the online manual for detailed information regarding compliance with EMC directives.