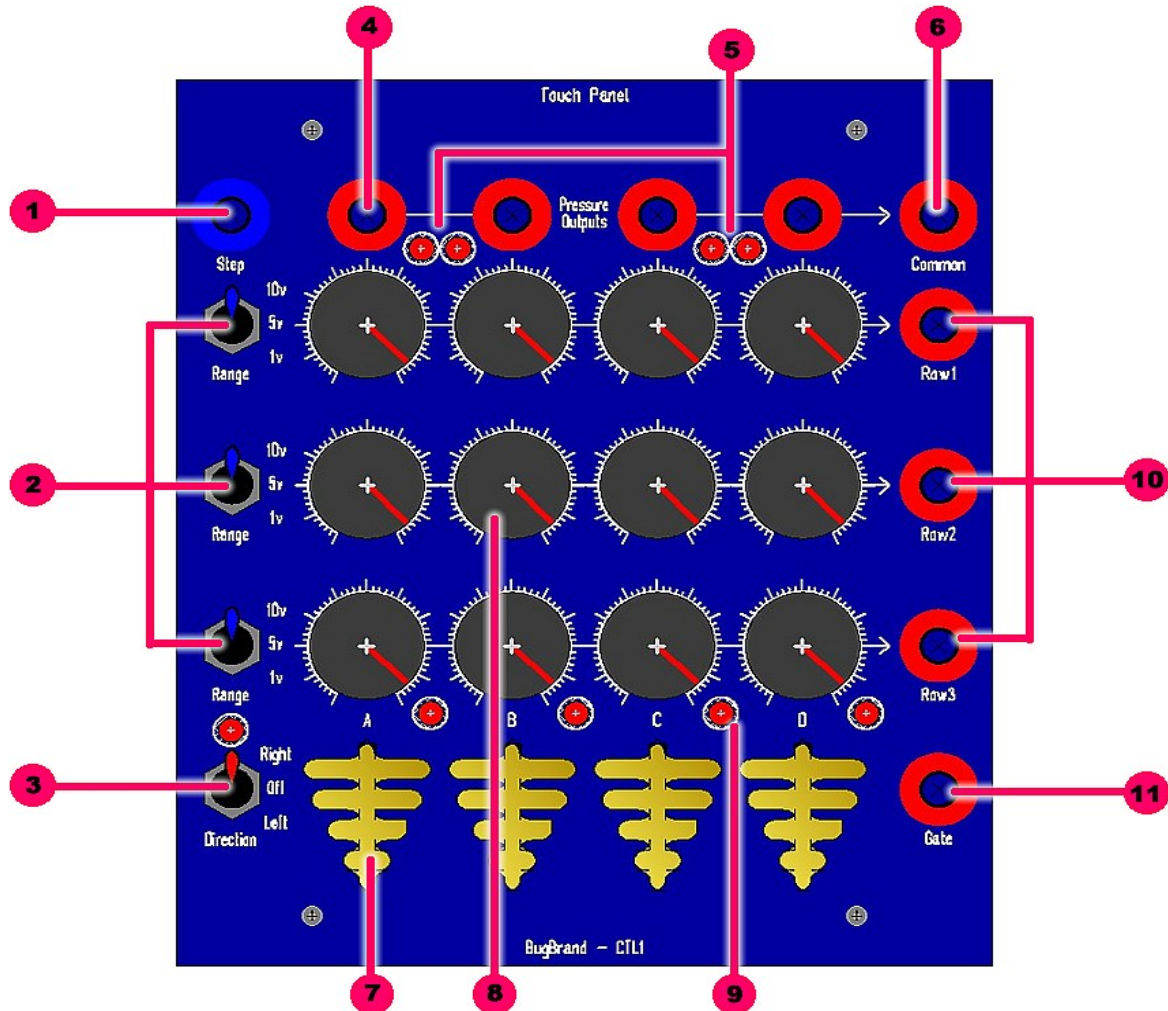


CTL1 - Touch Panel

Rev1 - Jan2010

Overview

The CTL1 Touch Panel combines a 4-Key Touch Controller with 3 rows of a 4-Stage Preset Sequencer. The Touch Pads generate individual CV Pressure Outputs, plus a Common Pressure and Common Gate. The active step of the Preset Sequencer is selected either by using the Touch Pads and Step Input.



Controls

- 1. Step Input** - Any voltage over c. +1.5v will clock the Preset Seq stage selection [dependent on Direction Switch]. While a gate / clock signal may typically be used, any waveform that rises above 1.5v will work.
- 2. Row Range Switches (1 - 3)** - Individual range selection switches for the three Rows - 10v, 5v, 1v. (Voltage levels are preset on the rear of the module)
- 3. Direction Switch** - Activates the Preset Seq clocking and selects left or right shifting of the active stage.
- 4. Individual Pressure CV Outputs (A - D)** - Key Pressure voltage outputs for the four individual keys. Output range is 0v (inactive) to +10v maximum. (Pressure response is preset on the rear of the module)
- 5. Individual Pressure LEDs (A - D)** - Indication of the Pressure voltage outputs.
- 6. Common Pressure CV Output** - Summed output of all four Key Pressure voltages (0-10v range)
- 7. Touch Pads (A - D)** - In general the keys respond in a monophonic way (ie. Press one key at a time). When pressing a key the selected stage is 'held' (ie. Clocking is deactivated)
- 8. Preset Dials** - Three rows and four stages to set Row Output voltages. Only one stage is active at any time, but the three rows are independent.
- 9. Stage Active LEDs (A - D)** - Showing the active Preset stage.
- 10. Individual Row CV Outputs (1 - 3)** - Outputs for the three rows with range governed by the individual range switches.
- 11. Gate Output** - The gate output goes high (+5v) whenever any touch pad is pressed. When not pressed the gate output is 0v.

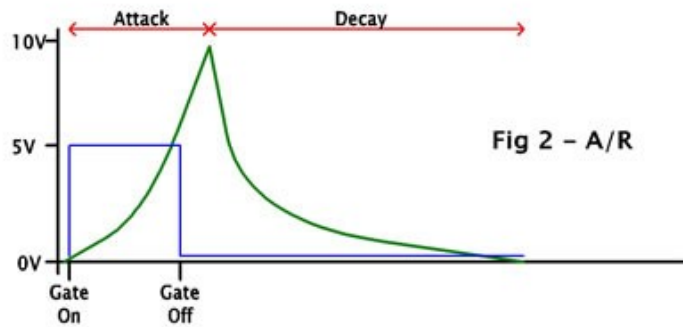
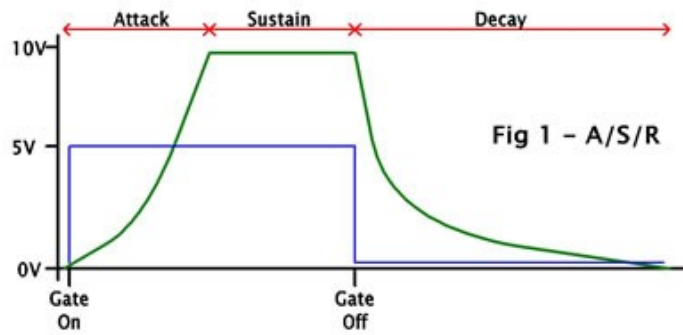
Adjustments:

1. **Key Response** - The touch pads are set to a general level of response on shipment, but this may prove too sensitive or not sensitive enough for individual users. By using a small flat-head screwdriver you can adjust the sensitivity with the trimmer located at the bottom left of the PCB. Adjust slightly and re-test the response - settings will generally be around the middle of the trimmer's range. Once adjusted this should not require further trimming.
2. **Range Voltages** - The precise 1v/5v/10v range settings can be made with the three multiturn trimmers near the centre of the PCB. A voltmeter is useful for setting these accurately, but they have been adjusted before shipment and should be fine already. To adjust, connect the voltmeter to one of the outputs, select a stage (manual key press) and turn the corresponding Preset dial up to full. Set the row's Range switch to 1v to start with and adjust the respective trimmer until the output voltage is measured as an accurate 1v. Switch the Range switch and adjust the other settings as required.

Specifications

Current Draw: +ve 35mA, -ve 15mA (max.)

Module Width: 3 Frac-width (4.5")



Adjustment Procedure

There is one multi-turn trimmer in the circuit, but this should not need to be altered in general use. Please read the notes carefully performing any adjustments. The trimmer adjusts the triggering bias and incorrect setting can mean the envelope either does not trigger or stays permanently on.

To test correct setting (without oscilloscope) - set Range to Mid and Mode to Loop, Attack and Decay to around 2 o'clock with no modulation or gate input. In this setting the Indicator LED should pulse On / Off at a relatively quick rate.

If the LED stays permanently lit then the trimmer should be slowly turned anti-clockwise until pulsing begins. If the LED stays permanently unlit then the trimmer should be slowly turned clockwise.