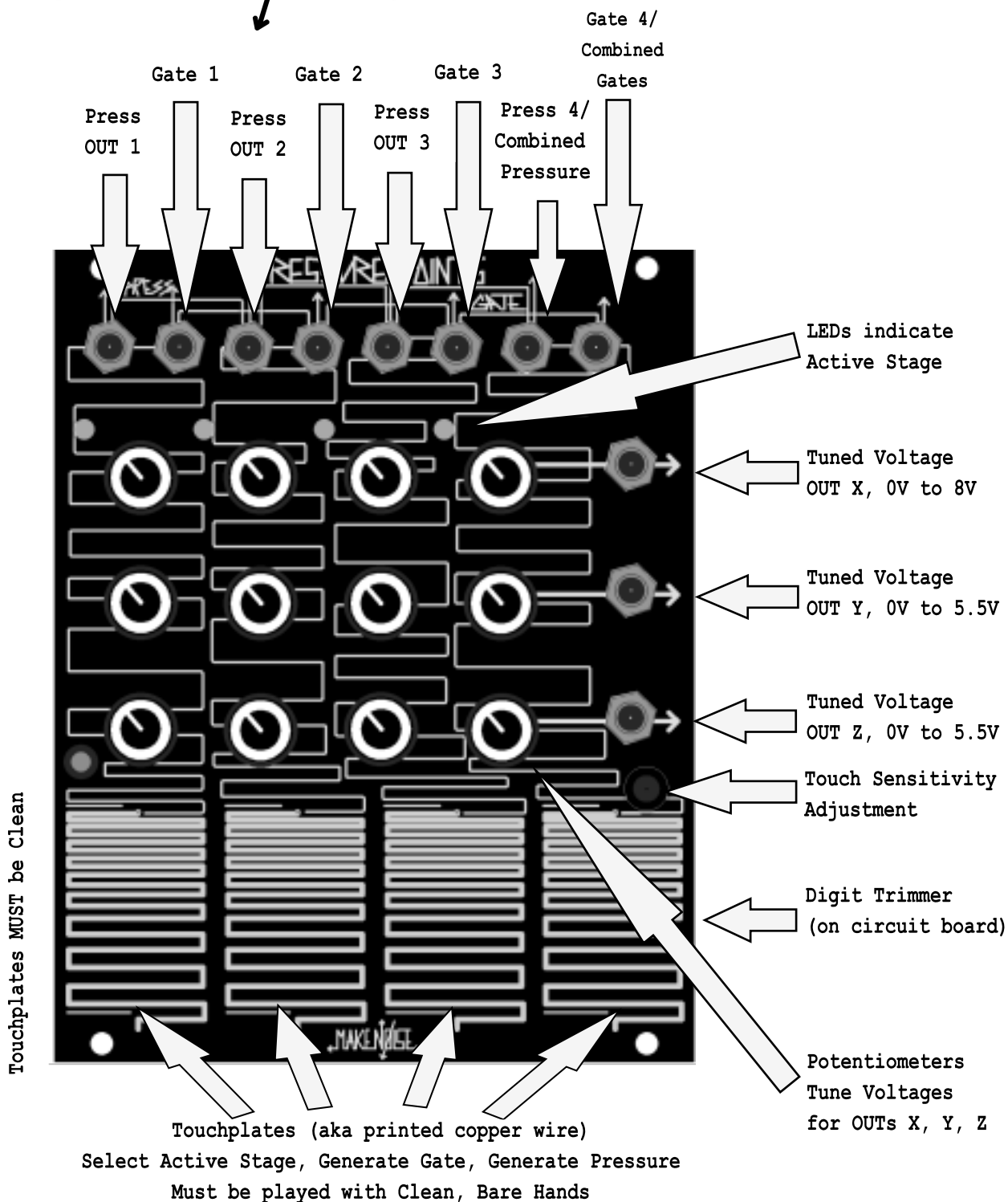


# Pressure Points



Pressure Points is a controller in which 1 of 4 sets of 3 tuned voltages are selected by touching the corresponding printed copper wire at the bottom of the instrument. Touching Pressure Points, you become part of the circuit, generating a gate signal (Gate OUT), a control signal proportional to the amount of pressure applied (Press OUT) and activating the corresponding Stage. The Tuned Voltages for the activated Stage appear at their respective X, Y and Z OUTs. In this way, Pressure Points is like an analog sequencer that is played by hand. 2 pots allow the circuit to be adjusted for desired playing response. Up to 4 of these modules may be CHAINED together to create controllers of varying size and complexity. The Gate and Press OUTS are normalized to their respective Combined BUS which is output at the last Gate or Press OUT in the CHAIN.

#### Installation:

The Make Noise Pressure Points is an analog electronic control signal generator requiring 20mA of +12V regulated power and properly formatted distribution receptacle to operate. It is designed to be used within the euro format modular synthesizer system. Go to [http://www.doepfer.de/a100\\_man/a100t\\_e.htm](http://www.doepfer.de/a100_man/a100t_e.htm) for the details of this format.

To install, find 20HP of space in your euro-rack synthesizer system, plug the 16pin power cable into the euro-rack style power distribution board, minding the polarity so that the RED stripe on the cable is oriented to the NEGATIVE 12 volt supply line. This is USUALLY at the bottom. Please refer to your case manufacturers' specifications for location of the negative supply.

Because it needs only a single supply voltage, Pressure Points may be powered by a wall wart, using a Barrel Jack to 10-PIN IDC cable converter. Both wall wart and cable converter are available where ever Pressure Points are sold. Operating from a single supply eases the construction of DIY enclosures by eliminating the need for AC mains connection, and simplifying power distribution. PLEASE contact Make Noise with any questions regarding Powering of Pressure Points. Make Noise implies and accepts NO responsibility for harm to person or apparatus caused through the construction and/ or operation of a DIY enclosure and/ or power solution for Pressure Points.

#### Limited WARRANTY:

Make Noise warrants this product to be free of defects in materials Or Construction for a period of two Years from the date of manufacture. Malfunction resulting from wrong power supply voltages, backwards power cable connection, abuse of the product or any other causes determined by Make Noise to be the fault of the user, are not covered by this warranty, and normal service rates will apply. During the warranty period, any defective products will be repaired or replaced, at the option of Make Noise, on a return-to-Make Noise basis, With the customer paying the transit cost to Make Noise. Please contact Make Noise for Return To Manufacturer Authorization. Make Noise implies and accepts no responsibility for harm to person or apparatus caused through operation of this product.

Please contact [tony@makenoisemusic.com](mailto:tony@makenoisemusic.com) with any questions, needs & comments...

otherwise go MAKE NOISE.<http://www.makenoisemusic.com>

**PLAYing** the Pressure Points requires the development of a technique, and CLEAN, BARE Hands. Touching the upper-most portion of the touchplate with as little of your finger as needed to activate the circuit, will generate a Gate and select the corresponding Stage. The 3 Tuned Voltages, as set by the column of 3 Potentiometers above the touchplate, appear at their respective X, Y and Z OUTs. Laying more of your finger down on the touchplate, and pressing harder, will generate a pressure control voltage proportional to amount flesh mashed into the copper of the touchplate. Pressing harder, more of your flesh comes into contact with a sensitive point in the circuit, hence the name Pressure Points. Set the Touch Sensitivity Adjustment Potentiometer further CW so that you may slide effortlessly and quickly from stage to stage, or set it more CCW when you want greater control over the Press Control Signal. If you cannot obtain the desired response, you might need to adjust the internal Digit Trimmer to compensate for size & moisture of your digits as well as playing technique and style of installation (vertical, horizontal, angled). This requires a trimmer tool or jeweler's screwdriver, and access to the module from the right side, where the Digit Trimmer is located on the circuit board. Please turn the power for Pressure Points OFF while adjusting the trimmer. Default setting for Digit Trimmer is 40% CW. Setting more CW will increase sensitivity for smaller and/ or dryer fingers, or for Vertical installations. Due to the complex nature of the human finger, you will need to experiment with settings to achieve the best playing response, keeping in mind that the Touch-Sensitivity Adjust will also affect.

**CHAINing** Pressure Points requires the 10 PIN CHAIN Cable, which is available where ever Pressure Points is sold, and the proper setting of jumpers on the modules to be CHAINED. Refer to the drawing on opposing page. All modules in the CHAIN will need to be connected to the power supply via their supplied power cables. Touch Sensitivity is set per module.

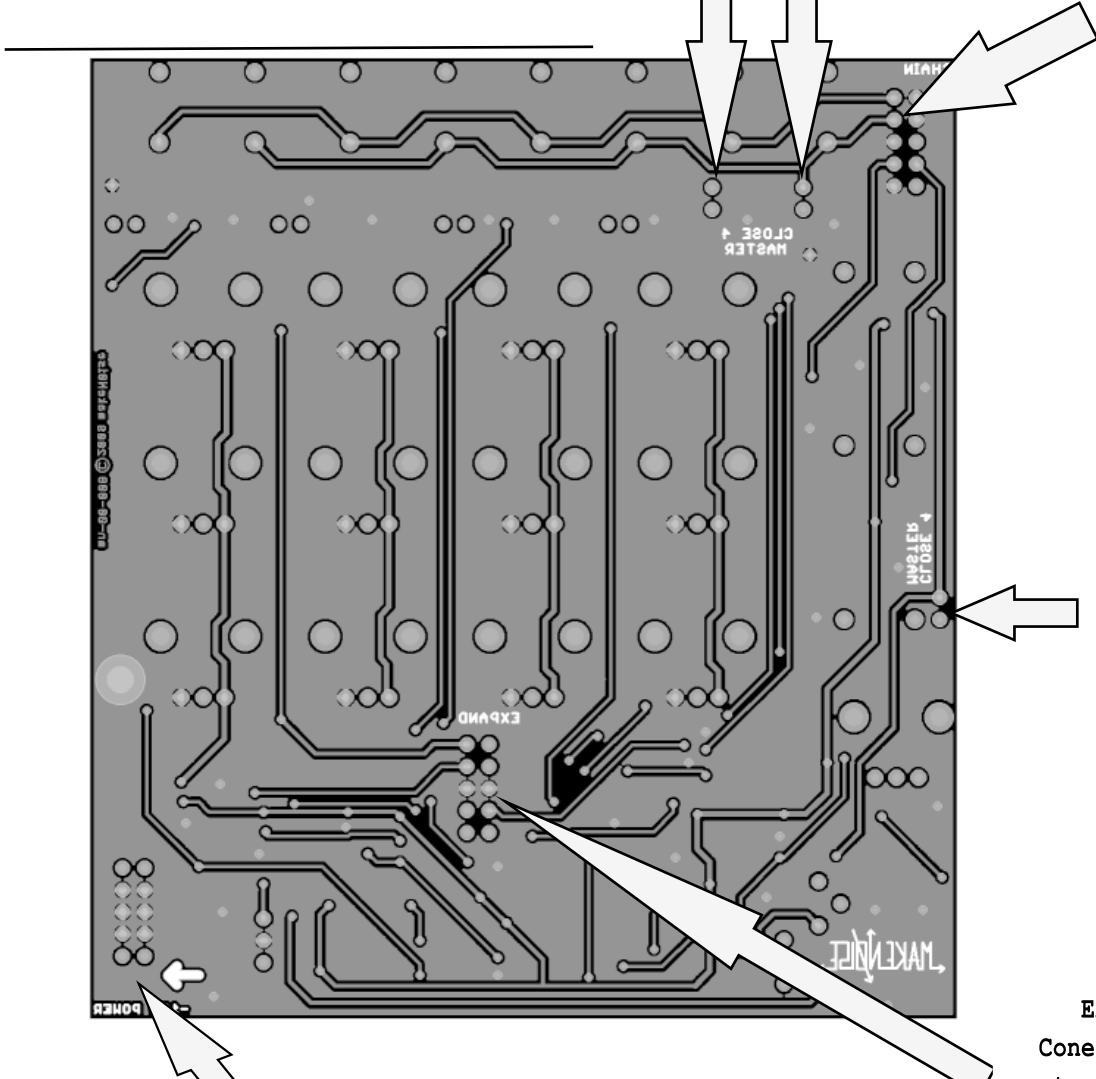
**CARE** for Pressure Points keeping it clean using a soft, dry cloth such as the 3M Microfiber Lens Cleaning Cloth. If needed, use a gentle, non-abrasive cleaner, such as Parsley Plus applied to the soft cloth, wiped on and wiped off. Periodically clean the playing surface with the supplied Anti-Tarnish cloth. Additional Anti-Tarnish cloth may be purchased from at a nominal cost.

#### **TIPS & Tricks:**

- The Top row of Tuned Voltages range 0 to +8V, and may therefore be used to generate gate signals where full CW is Gate ON and full CCW is Gate OFF.
- Process the Pressure Control Signal with a slew limiter and attenuator on Channels 1 or 4 of MATHS to achieve larger then life modulations.
- To achieve a "Latched," "Toggled" or "Switching" control signal, use two stages of Pressure Points, where one has a Tuned Voltage set to 0V (toggled OFF), and the other has a Tuned Voltage set to the desired ON state (+8V, or Full CW, for example). Touch one stage to turn ON, and the other to turn OFF.
- Use Pressure Points for Preset Storage where you have 4 presets of 3 variables in a patch, the variables being set by Tuned Voltages X, Y and Z. Additional variation is Preset by applying the independent Press and/ or Gate signals from each stage to different patch points. If the Gate is not need to initiate an event, apply it to a patch point via an Attenuator and use as a touch controlled momentary modulation.

To CHAIN, set the jumpers on the backside of the module, so that only the last Pressure Points in the CHAIN will have CHAIN Jumpers in place. This will be the MASTER Module. A single Pressure Points is it's own MASTER.

**CHAIN connection**  
 using 10 PIN CHAIN Cable  
 Connect 2 to 4 Pressure Points  
 last in CHAIN will be MASTER and have  
 CHAIN Jumpers in place  
 All others have CHAIN jumpers removed



**Power Connection**  
 -12V to bottom  
 as indicated on  
 circuit board

**Expansion Port**  
 Conect 10-PIN cable  
 to Points expander  
 Otherwise, EXPAND Jumpers  
 installed connecting  
 Pin 1 & 3, 2 & 4  
 7 & 9, 8 & 10

An expansion port on the backside will allow for sequential control via the forthcoming Points Expander, bringing all of the typical functionalities of the analog sequencer to this system. With no expansion installed, the EXPAND Jumpers must remain in place.

The Pressure Points operates from a single supply, needing only +12V and Ground connected, and may thus be powered with a wall-wart. Pressure Points will, of course, operate perfectly powered from the dual supplies found in euro rack format cases from Doepfer, MonoRocket, MW.