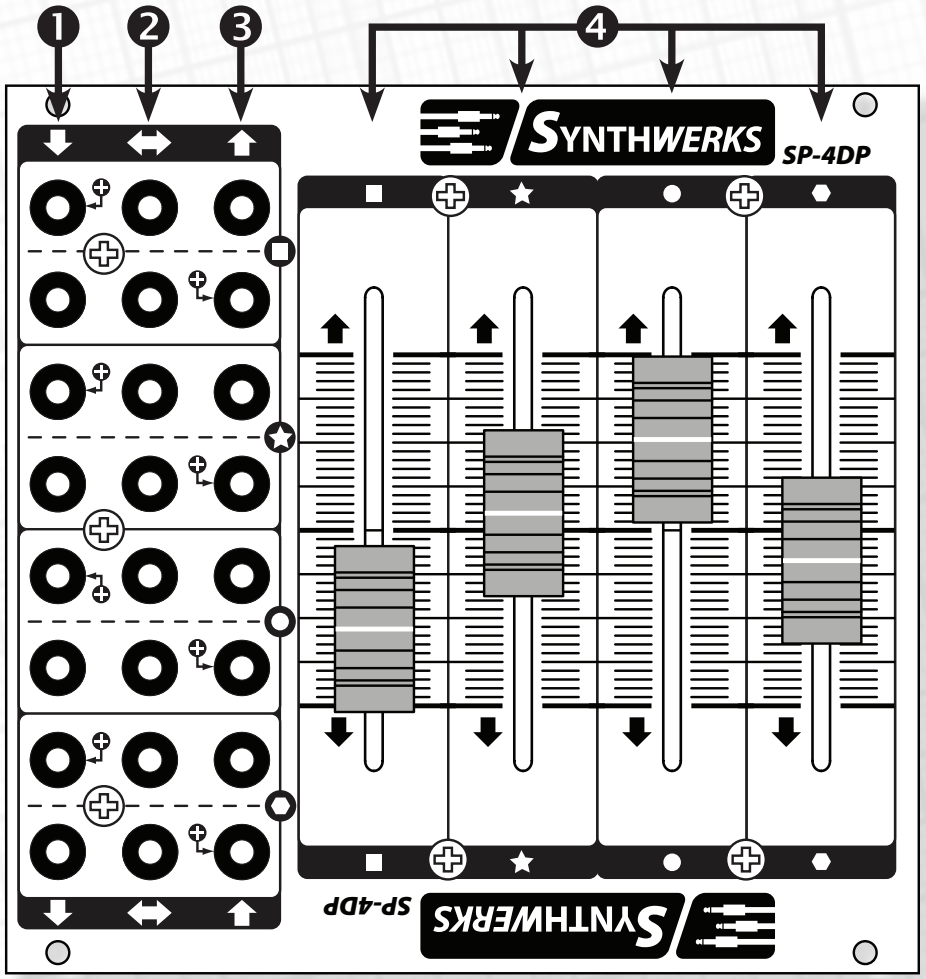
SYNTHWERKS

SP-4DP Quad Dual Slide Pot Eurorack Module

The **SP-4DP** is another release in **Synth*werks***' growing series of performance modules. This module provides the user with 4 high quality, medium throw (60mm), fast acting dual slide pots with all taps available for patching. The **SP-4DP** is an active module. Each half of the 4 dual slide pots is normalized to a DV voltage, internally selectable to either 0V-5V or 0V-10V ranges (approximately). The module can pass both AC and DC signals with output levels proportional to the position of the sliders. The Jacks and slide pots are mounted to a 26 HP rotatable panel. The panel graphics are so that the panel can be rotated to choose if the jacks are to the left or to the right of the slider themselves, thus keeping the patch cables out of the way.

Front panel Controls and Connections



There are typically FOUR main ways to use the **SP-4DP** module. Each of the four slide pots in the SP-4DP are dual slide pots whose halves are electronically separate from each other, so each slider can do any TWO of these functions at the same time, to two different signal paths - eight signals can be controlled at once. The first type of function is to alternately send one signal (audio or CV) to two different destinations - this is called a **Pan-pot** function. The second type is to fade between two sources (audio or CV), sending the "mix" to one destination - this is a **Segue** function. The third type is to control the level of one signal (audio or CV) passing through the **SP-4DP** - This is an **Attenuation** function. The forth type is to generate DC control voltages and output them - the **DC control voltage output** function.

The 4 Slide Pot sections

There are four separate slide pots on the SP-4DP. Each slide pot is associated with six jacks (three for each half of the slide pot). Since the panel is rotatable, these sections are shown with small graphic elements - ■, ★, ●, and ⬣ - instead of text. For the examples below, we will be using just the ■ channel. All channels are identical so any info shown below will work for all four sections.

Function 1 - Pan-pot function

Plug the source signal into the ❷⟷ **INPUT/OUTPUT TAP** jack on one section of the six jacks associated with the slider you want to use.. This signal will appear louder at the ❶⬇ **INPUT/OUTPUT TAP** or the ❸ ⬆ **INPUT/OUTPUT TAP** of the same section when the ❹**SLIDER** is moved closer to the same graphic shown above and

below the associated slider. The arrow graphics will work in whatever orientation the panel is in. The ❶⬇ **INPUT/OUTPUT TAP** jack will always have its level highest when the slider is nearest the matching ⬇ graphic next to the ❹**SLIDER**. In the orientation shown in this drawing , this would be with the ❹**SLIDER** at the bottom of the panel. The signal will appear at the ❸ ⬆ **INPUT/OUTPUT TAP** jack at its highest level when the slider is moved closest to the end shown by the ⬆arrow graphic. This would be with the ❹**SLIDER** at the top part of the panel in the orientation shown. These graphics work no matter which way the panel is orientated.

Function 2 - Segue function

Plug two different source signals (audio or CV), one each into the ❶⬇ **INPUT/OUTPUT TAP** and the ❸ ⬆ **INPUT/OUTPUT TAP** jacks. These signals will appear at the ❷⟷**INPUT/OUTPUT TAP** jack with their highest level being when the ❹**SLIDER** is moved closest to the end shown by the arrow graphic. In the orientation shown in this drawing the signal patched into the ❸ ⬆ **INPUT/OUTPUT TAP** jack would be its highest level at the top (⬆) of the slider's position and fade into the signal plugged into the ❶⬇ **INPUT/OUTPUT TAP** jack when at the lowest (⬇) position of the ❹**SLIDER**. For example, if you plugged a sawtooth LFO into the ❶⬇ **INPUT/OUTPUT TAP** and a square wave LFO into the ❸ ⬆ **INPUT/OUTPUT TAP**, the signal appearing at the ❷⟷**INPUT/OUTPUT TAP** jack would fade between sawtooth to square as you moved the slider.

Function 3 - Attenuation function

Since the separate halves of the slide pots are normalized to internal DC voltages, when used in the **Attenuation** function, certain jacks should be used to make sure to turn off the normalized DC voltage, removing it from the output signal (unless you want to segue to DC, and not fade to off, which may be bad for modules expecting only audio signals as inputs). Plug the source signal (audio or CV) into either the ❶⬇ **INPUT/OUTPUT TAP** *OR the* ❸ ⬆ **INPUT/OUTPUT TAP** jacks in each section that have the "**+**" marker next to them. Take the output from the ❷⟷ **INPUT/OUTPUT TAP** jack. The signal's level will vary depending on the slider's position relative to the jack with the matching arrow graphic you chose for an input. For example, if you plugged the input into the ❸ ⬆ **INPUT/OUTPUT TAP** jack with the "**+**" graphic shown of the bottom set of three jacks in each of the two sections for each slider, the level would be its highest level at the top (⬆) of the slider's position. The normalized jacks for each half of each slider have been positioned so that there will be an option to attenuate in either direction by using the one of the ❶⬇ **INPUT/OUTPUT TAP** *OR the* ❸ ⬆ **INPUT/OUTPUT TAP** that have the "**+**" marker next to them for that section.

Function 4 - DC control voltage output function

Although the SP-4DP doesn't care if audio or control voltages are used in any of the above mentioned functions, the **DC Control Voltage** function is built in. To use the **DC Control Voltage** function, all you need to use is the center ❷⟷**INPUT/OUTPUT TAP** jack from each section of the jack. Each slider's two sections are normalized to the internal DC voltage with the units maximum output voltage, for all four sliders, set via the internal **HIGH-LOW** jumper (J26). Each of the two sections of each of the slide pots has opposite jacks normalized, so each slider can produce two opposite CV signals when moved, one going from low to high as the other goes from high to low. The HIGH internal jumper setting, sets the range from 0V to approximately +10V. The LOW setting sets the range from 0V to approximately +5V. It is approximate because of the tolerance of the slide pots used.

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SP-4DB Quad Dual Sided Pot Eurorack Module

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