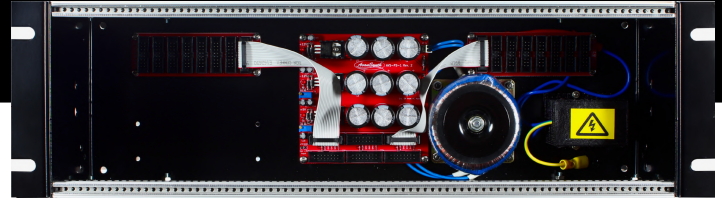


The

AvonSynth

User Guide

AVS-CASE-1 Synthesizer Case



Thank you for purchasing from AvonSynth

Congratulations on your purchase of a brand new AvonSynth AVS-CASE-1 84HP Modular Synthesizer Case. We trust that it will both serve and inspire you as you create beautiful music with it for years to come.

In order to get the most out of your case, please ensure that you read this User Guide in its entirety so that you fully understand all of its functionality, and that you follow all necessary safety directions during use.

Included in the Box

1 x 84HP Modular Synthesizer Case
(available with silver or black rails)



1 x IEC style power cord



Installation

Step 1: With your case unplugged, solidly mount it to a standard 19" rack or position it in your performance area.

Step 2: With no modules yet inserted, test your power connection by plugging in a standard IEC type power cable into the corresponding socket on the rear of the unit, connecting that to a 230VAC power outlet. Set the rear switch to the 'on' position. If mains power is successfully reaching the power switch, it will illuminate. If the red '+12V', '-12V', and '+5V' LEDs on the main board of the unit are lit, power is connected correctly.

Step 3: With the power switched off, populate the unit with Eurorack compatible synthesizer modules. Triple check the polarity of the power connectors before connecting the power cords to your power supply. Ensure that the -12v line marked on the back of the modules connect to the same end of the flat-cable that also connect to the -12v line on the power supply.

Step 4: Power up your system and start patching!

Features & Specifications

- Eurorack modular synthesizer case, compatible with standard 19" rack units.
- 84HP wide, and 100mm deep.
- Current capability rating of 1000mA. For further details on current, see page 3.
- PSU Ripple amplitude as low as 0.4mV on each rail loaded, and unloaded.
- Precision-tuned linear regulated power supply with toroidal transformer for low noise.
- Solid steel construction, with high quality lipped rails, and stainless steel threaded inserts.
- 18 PCB-mounted 16-pin power ports, expandable to 25 if required.
- Voltage of rails tunable with precision multi-turn trimmer potentiometers.
- Modular design with a range of symmetrical mounting holes for connecting units together and other customizations.

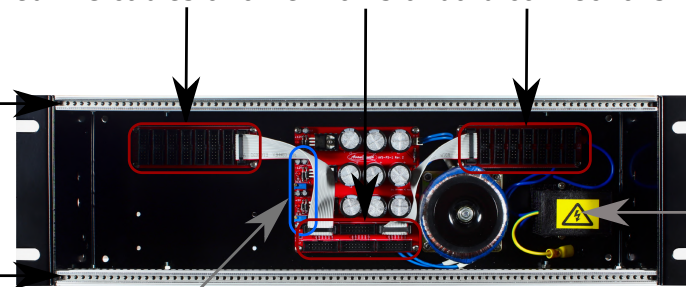
Description of Functionality

Module Power Ports

These 18 shrouded IDC connectors provide +12V, -12V, and +5V power rails to the attached Eurorack compatible modules. All modules should come with a 16pin to 10pin, or a 16pin to 16pin power cable. Take extra care of the cable orientation when plugging in non-AvonSynth modules, as some manufacturers have been known to supply incorrectly wired IDC cables or other non-standard connections.

Threaded Rails

Affix your modules to these rails, while placing a small nylon spacer between the screws' heads and the modules to avoid marking them. Earlier models with Schroff rails require 10mm M3 machine screws, while current models with AvonSynth rails are compatible with 6mm, 8mm, and 10mm screws.



Calibration Potentiometers

These come pre-tuned from the factory, but if necessary, the levels of the three voltage rails can be fine-tuned using these multi-turn trimmer potentiometers.

Rack Ears

Use these to mount your case to a standard 19" rack.

Mains Power

Dangerous high voltage connections are housed behind this plastic cover. This should never be removed except by a qualified electrician.

Power Connection

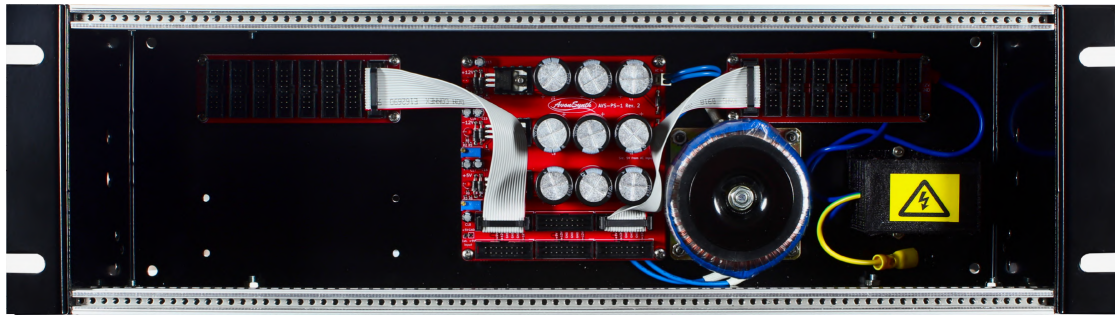
Use this rear socket to plug the case into a 230V AC outlet, using a standard IEC power cable. A fuse is fitted inside this socket. If the fuse is blown, please ask qualified personnel to replace it.



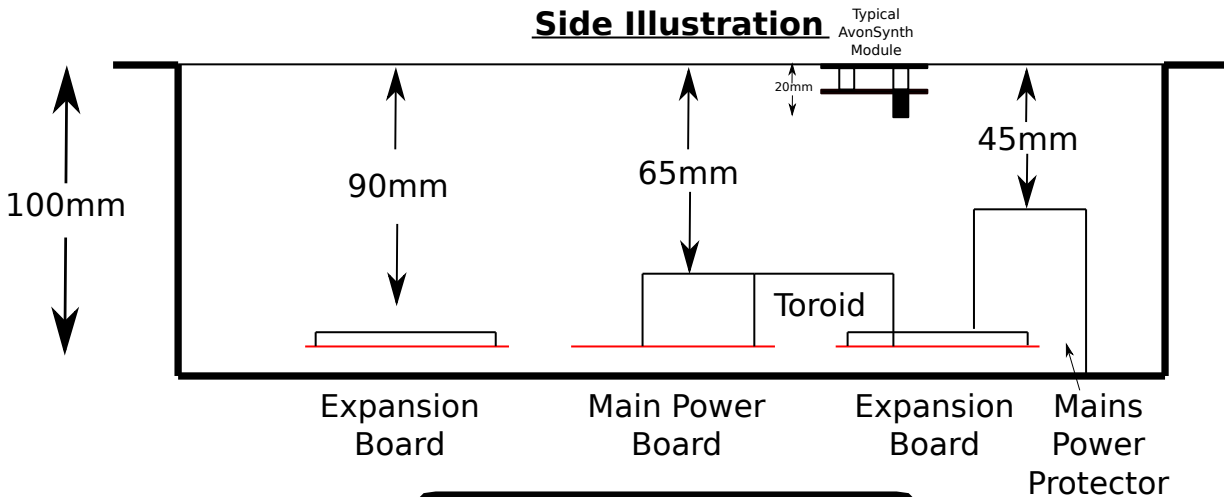
Depths at Different Points

AvonSynth modules are generally 20mm deep, and can all be mounted anywhere in the case. However, if you have deeper modules from other manufacturers, please refer to the below diagram to ensure that your modules will fit, and to ensure best placement.

Front View



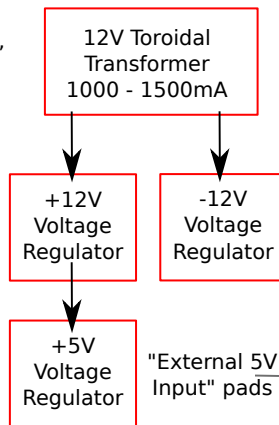
Side Illustration



Current Supply Considerations

While the overall power supply is rated at 1000mA total due to the current supply ability of the toroidal transformer, actual current capabilities with ideal noise characteristics are somewhat more complicated. As per the power flow diagram on the right, the 5V rail is derived from the 12V rail, meaning that the 1000mA rating is *shared* between the rails, rather than added up.

Given that the average rack of AvonSynth modules uses between 200 and 250mA on the +/- 12V rails and just 15mA on the 5V rail, There is approximately double the needed capacity available. However, some very power hungry modules made by other manufacturers could push the current limits, and unfortunately through testing we have found that a number of manufacturers drastically under-report the actual current requirements of their modules.



"Source 5V from AC Input" Jumper

In order to mitigate this issue, we have included the ability to attach an external 5V "wall-wart" PSU in parallel to the +/-12V rails. This provides extra current for digital modules that are power-hungry on the 5V rail, thereby relieving pressure on the +12V rail on the built-in PSU, and isolating the noisy digital rail from the analogue +/- 12V rails. In order to implement this, **make sure to remove the 'Source 5V from AC Input' jumper first.** Then, a barrel connector can be soldered to the 'External 5V Input' pads, taking care to match the '5V' and 'GND' labels correctly. The barrel connector can then be mounted to the case in one of the provided mounting holes, and an external 5V 'wall-wart' PSU can be plugged in.

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AVS-CASE-1

Synthesizer Case

Please use this case in accordance with the following safety guidelines in order to maximize the life of the product and ensure warranty from AvonSynth.



Keep water and other conductive liquids and materials away from this case. It is not water proof, or even water resistant. Exposure to these can cause short-circuits that can render the equipment unusable.



Be sure to keep this equipment in an environment with an ambient temperature above -20°C and below $+50^{\circ}\text{C}$. Excessively hot or cold temperatures can be damaging to the electronic circuits used.



Equipment with exposed circuit-boards are delicate. Take the utmost care when handling and transporting this equipment, making sure not to subject it to excessive forces. Ensure that the case is packaged safely while being transported and that the original packing materials are used when sending the case anywhere by post.



This piece of equipment contains dangerous, potentially lethal voltages. Do not under any circumstances tamper with the transformer, or remove the protective plastic high-voltage cover. Should the unit need servicing, refer all work to qualified electrical service personnel.

This product is covered by AvonSynth's warranty for one year from the manufacturing date. Within this timeframe, any manufacturing defect will be repaired or replaced by AvonSynth. Damage caused to the product due to not following the safety precautions above, unauthorized modification of the hardware, or misuse such as subjecting the unit to reverse or excessive voltages, or higher than rated current draw will void this warranty.

If you have any concerns about your AvonSynth hardware, please get in touch via info@AvonSynth.com to discuss any issues. We will do our best to assist you in getting your hardware operating correctly, and if necessary, we will provide an RMA (Return Merchandise Authorization) to send back the unit for inspection. Any postal costs incurred in this process will be the responsibility of the customer. Please do not send back merchandise before receiving this authorization.