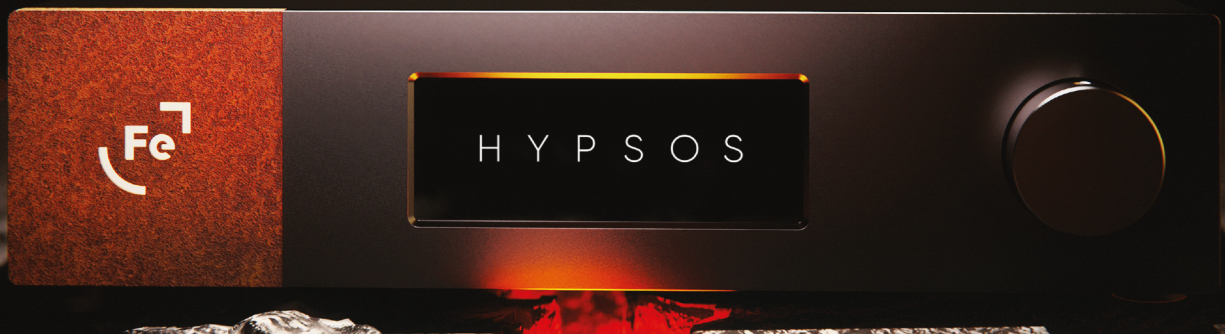


HYPSONS by **Ferrum**

user's manual



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user's manual



INTRODUCTION

Thank you for choosing HYPSSOS by Ferrum!

HYPSSOS is a hybrid power system and combines the best features of both linear and switching power supplies. HYPSSOS can power many brands with a simple revolution of a knob. This software based operation is unique to HYPSSOS and an industry first! Apart from the ease of operation HYPSSOS makes use of a smart combination of existing power sensing techniques, which again sets it apart from the pack. With the HYPSSOS power supply your audio system will be taken to the next level!

Owner's Manual Ver. 1.5 / Firmware v1.3.X April 2022

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1. IMPORTANT SAFETY INFO

WARNING: To reduce the risk of fire, electric shock or enclosure discoloration, be sure that the apparatus shall not be exposed to dripping or splashing and that no objects filled with liquids, such as vases, shall be placed near or on the apparatus.

IMPORTANT NOTE: Always switch off and mute devices when connecting or disconnecting the Hypsos power supply.

Do not allow any objects to get into the enclosure. If the unit is exposed to moisture, or a foreign object gets into the enclosure, immediately disconnect the power cord from the wall outlet. Take the unit to a qualified service person for inspection and necessary repairs.

Read all the instructions before connecting or operating the component. Keep this manual so you can refer to these safety instructions. Heed all warnings and safety information in these instructions. Follow all operating instructions.

Unplug this product from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.

When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.

Do not place the unit on a bed, sofa, rug, carpet, or similar surface that could block the heatsink airflow. If the component is placed in a bookcase or cabinet, there must be ventilation of the cabinet to allow proper cooling. Keep the HYPPOS away from radiators, kettles, heat registers, stoves, or any other appliance that produces heat.

Connect the HYPPOS to the power outlet only with an earthed IEC power supply cable or an exact equivalent in a mains socket with protected earthing connection.

The safest and primary method of isolating the device from the mains supply is to disconnect the mains plug. Ensure that the mains plug remains accessible at all times.

Unplug HYPPOS during lightning storms or when unused for long periods of time.

Do not attempt to defeat grounding and/or polarization provisions. Do not route the power cord where it will be crushed, pinched, bent at severe angles, exposed to heat, or damaged in any way. Pay particular attention to the power cord at the plug and where it exits the back of the unit.

Immediately unplug and stop using the component and have it inspected and/or serviced by a qualified service agency if:

- The power supply cord or plugs have been damaged.
- Objects have fallen or liquid has been spilled into the unit.
- The unit has been exposed to rain.
- The unit shows signs of improper operation.

- The unit has been dropped or damaged in any way.
- When the product exhibits a distinct change in performance. This indicates a need for service.

When replacement parts are required after the warranty period, be sure the service technician has used replacement parts specified by the manufacturer or have the same specification as the original part. Unauthorized substitutions may result in fire, electric shock, or other hazards. Upon completion of any service or repairs to this product, ask the service technician to perform safety checks to determine that the product is in proper operating condition.

In households with small children, an adult should provide supervision until the child is capable of following all the rules essential for the safe operation of the unit.

Only use DC cables specified by the manufacturer.

2. BOX CONTENT

- HYPsOS hybrid PSU
- AC power cord
- DC power cord with 5.5/2.5 mm or 5.5/2.1 mm DC jack
- Spare fuse (see paragraph "7. Fuse replacement")
- Quick Guide

3. DEVICE FEATURES

- **Regulated output voltage level in 5-30V range, current up to 6A, power up to 80W**
- **Hybrid Power System (HyPSos) Design** - linear/switching hybrid design to get the advantages from both techniques - low ripple and noise as well as fast transient response and high efficiency
- **Volume adjustment (Sweet Spot Tuning)** - Possibility to fine tune the output voltage for the best sound
- **4T Sensing Design (4TSD)** - ensuring the exact voltage level precisely at the point of the powered device DC input terminal - special cable design and feedback to ensure flat voltage at every moment
- **Easy setup procedure** - using pre-configured settings from the list of supported devices or setting custom parameters manually
- **Advanced Automation** - Compatibility with Apple TV Remote, Trigger in/out connector; possibility to automate power-up of the devices with standby mode even without dedicated trigger connection
- **Custom made audio grade power transformer with double shielding**
- **Double input AC filter**
- **Automatic Transformer Voltage Adjust (ATVA) and Electronic Output Voltage Polarity Switch**
- **Tamper-safe design - impossible to accidentally change the electrical settings (voltage, etc.)**
- **Overvoltage, current limit and short protection**
- **Compatibility and the best performance with all worldwide mains voltage parameters**
- **Each unit is unique thanks to corten plate on the front**

4. GETTING STARTED

4.1. Front Panel Overview

- A. Ferrum logo - brightness of logo can be changed in the menu.
- B. OLED displays.
- C. Encoder knob - this encoder is both a knob and a button. Works as an on/off switch in standby mode and allows you to navigate in the Hypsos menu.

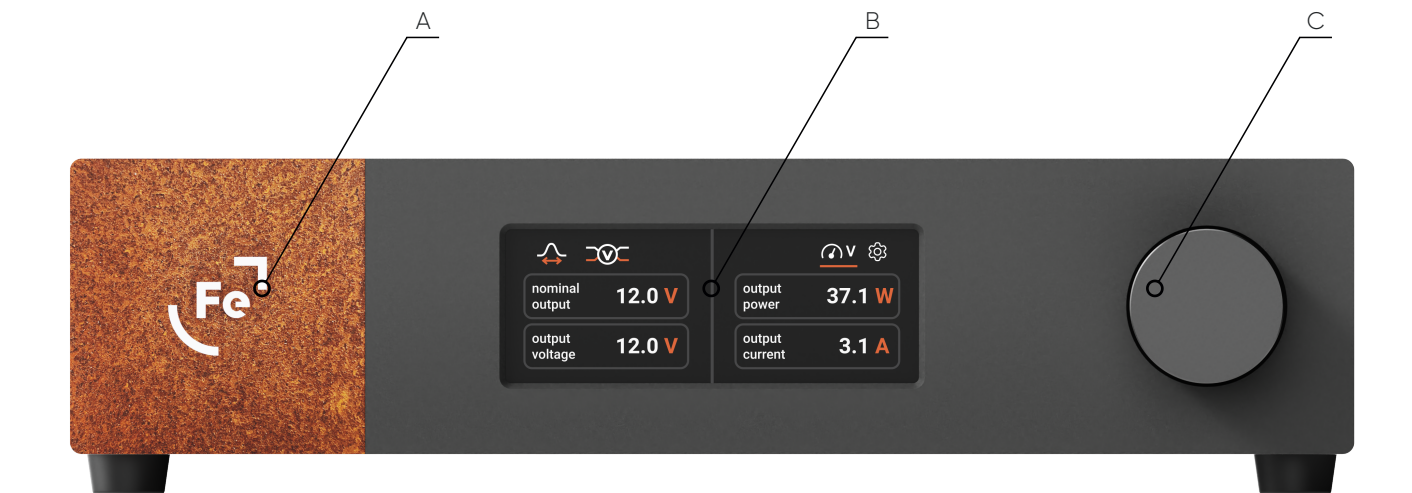


Figure 1.

4.2. Back Panel Overview

- A. DC output - here you connect the DC cable. The DC output socket is marked with a red dot. The same dot is also marked on DC cable. To connect the cable properly both dots must be aligned. To disconnect the DC cable, pull the metal ring on the plug in the opposite direction to the device and then pull the cable out of the socket.
- B. Trigger I/O socket.
- C. Micro-USB port.
- D. Main power switch.
- E. Fuse.
- F. Mains IEC connector. Place mains power cord at this connector.

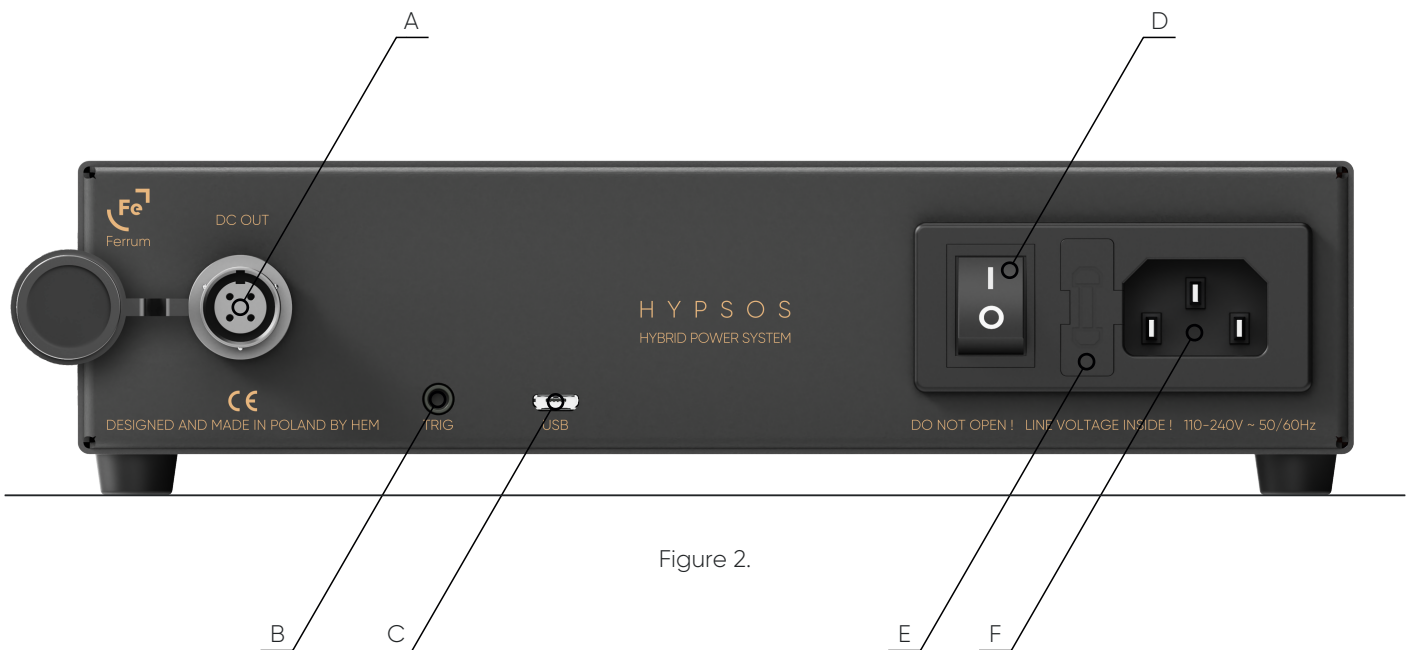
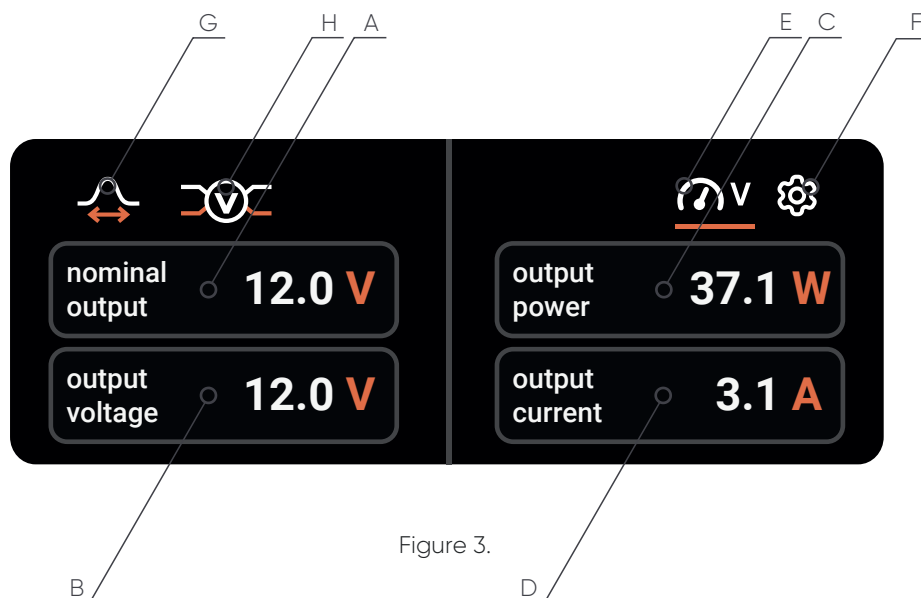


Figure 2.

4.3. Main Screen

- A. Nominal voltage value set during the process of selecting a device from the list or during manual configuration.
- B. Measured voltage at the DC HYPSONS output. Small deviations in measurement up to 0.2V are possible.
- C. Current power consumption of the device powered by the HYPSONS.
- D. Currently measured output current on the DC HYPSONS output.
- E. Voltage adjustment (Sweet Spot Tuning) - this feature can also be set up in the menu.
- F. Menu.
- G. Spread Spectrum Mode icon - when grayed out SSM is not active.
- H. 4T Sensing Design icon - when grayed out 4TSD is not active.



4.4. Connecting the HYPSSOS

DC output location and connecting DC and AC mains cable.

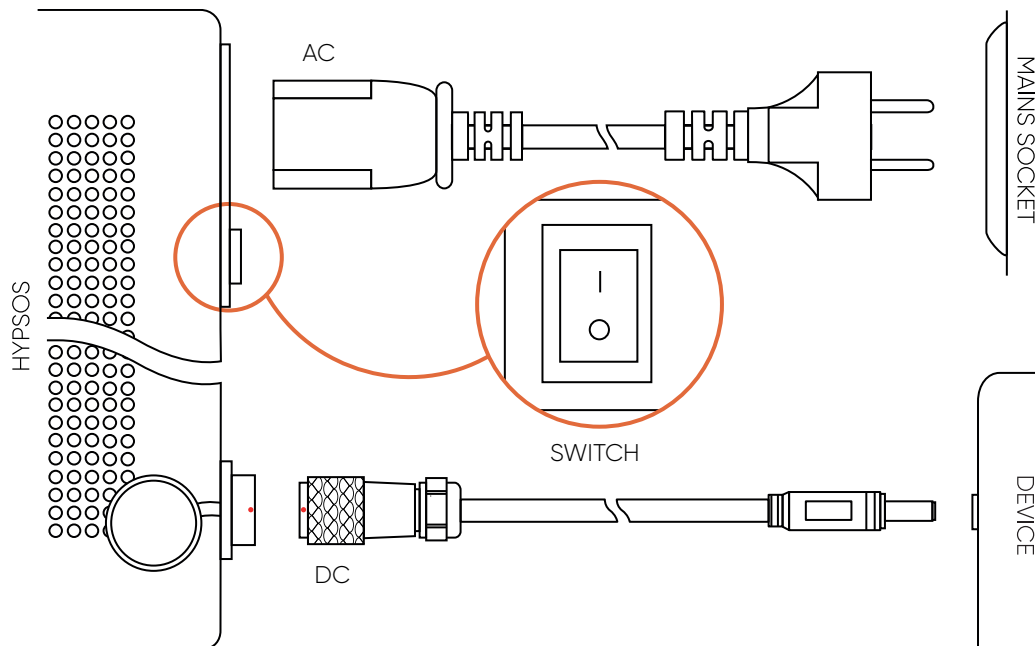


Figure 4.

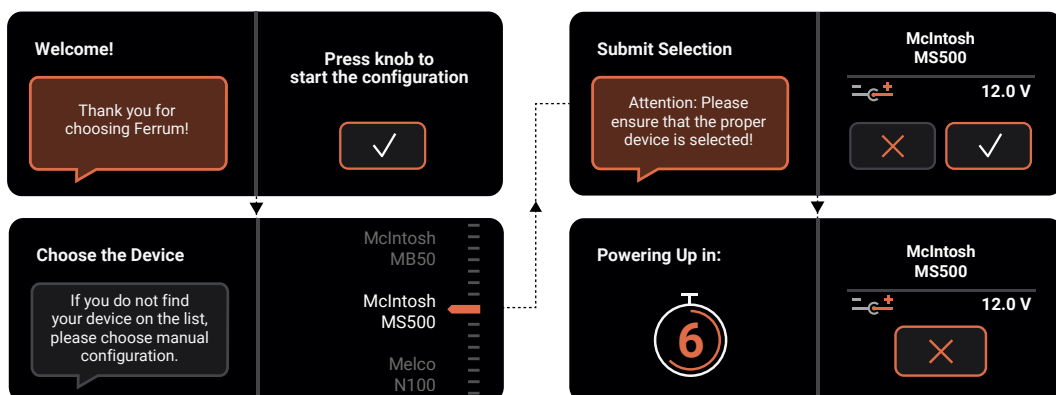
4.5. Turning on your HYPSSOS for the first time

Make sure that all cables are correctly connected to the HYPSSOS and powered device (Fig. 4). Then use the main switch to start the HYPSSOS (Fig.2D).

The first time you start the HYPSSOS, it needs to be configured to properly power other devices.

After start-up press the knob and HYPSSOS will display a list of devices, which have already configured presets.

Selecting a device from the list



If you see your device in the list, select it and confirm by pressing the dial. HYPoSOS will show you a summary of the preset and ask you to approve the settings. It is a good idea to check if the voltage and polarity that HYPoSOS proposes are correct for the device you want to power.

Once the settings have been approved, a timer will appear on the screen counting down the time to apply the voltage to the HYPoSOS output – you still have 9 seconds to change the settings if necessary. To stop the countdown and return to the settings, press the knob.

After 9 seconds, the previously set voltage is applied to the DC HYPoSOS output.

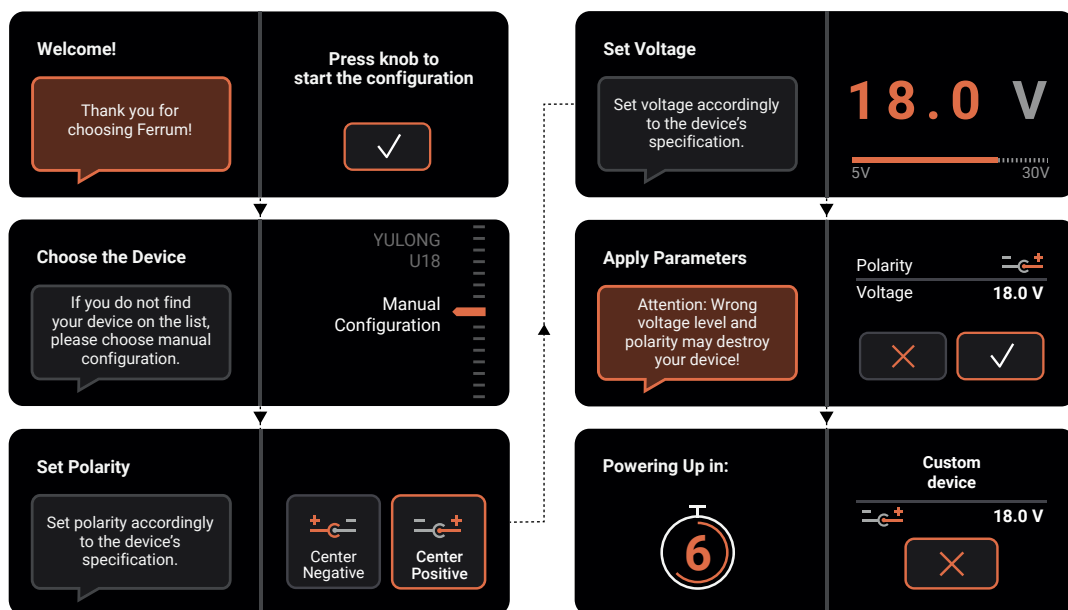
Done!

Note: The list of available devices can be updated by updating the firmware. Let us know if you want us to add a device that is not on the list.

Note: All presets included in Hypsos are suggested settings only. Before accepting a setting from a preset, the user must verify that it is correct for the device they wish to power with Hypsos. If there is a parameter mismatch between a preset and the device you are powering, do not use the preset and report it to us.

Ferrum refuses every liability for damage to equipment due to an incorrect connected DC output voltage or wrong polarity.

Manual configuration



If the device you want to power is not in the list, select "Manual configuration" and confirm by pressing the dial. The first window allows you to select the appropriate polarity for your device. You can choose between two options: the middle pin of the power plug is the positive pole or the middle pin of the power plug is the negative pole.

After selecting the appropriate polarity, confirm your choice by pressing the dial.

In the next window, select the voltage appropriate for powering your device. You can choose between 5V and 30V. Confirm your choice of voltage by pressing the dial.

Above parameters should be set according to the recommendations of the manufacturer of the device you want to power! Ferrum refuses every liability for damage to equipment due to an incorrect connected DC output voltage or wrong polarity.

The HYPSONS will now show a summary of the settings and ask you to confirm them.

Once the settings have been approved, a timer will appear on the screen counting down the time to apply the voltage to the HYPSONS output - you still have 9 seconds to change the settings if necessary. To stop the countdown and return to the settings, press the knob.

After 9 seconds, the previously set voltage is applied to the DC HYPSONS output.

Done!

5. MENU

5.1. Navigation

To open the menu select Menu icon (Fig. 3F) on the main screen and confirm by pushing a knob.

Use the knob to navigate through the menu.

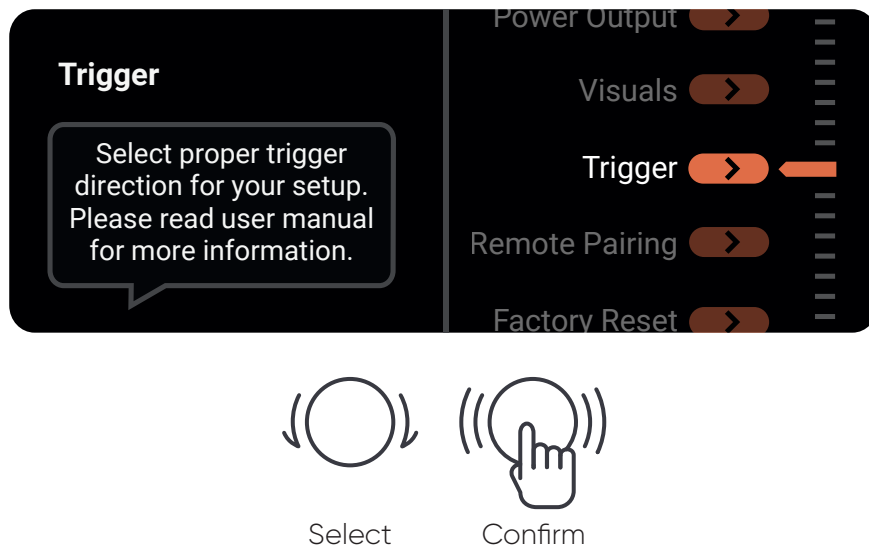


Figure 5.

To go back to the previous screen select "Back".

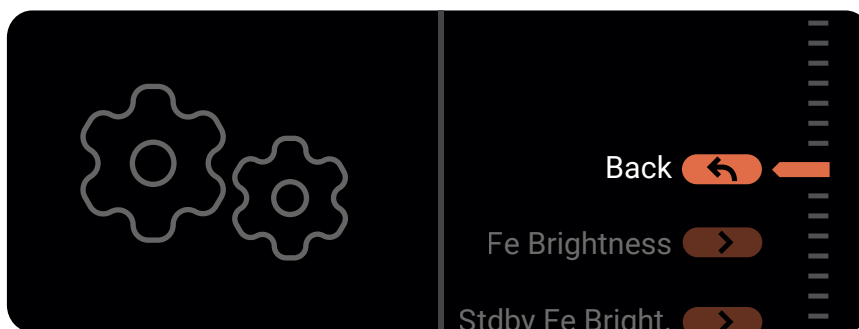






Figure 6.

Icons:

-  - Means action. When you enter this item it will take you to another screen.
-  - Indicates the information that is displayed on the left screen.
-  - This will take you to previous screen.
-  - Shows the currently set parameter value.

5.2. Menu Structure

1. Power Output

1.1. Current device

Display the parameters of the currently powered device.

1.2. Reconfigure

This feature allows you to go through the initial setup process of selecting a HYPSONS powered device from the list or manual configuration.

1.3. Voltage Adj.

This function can also be set from the home screen (check Fig. 3E).

Allows you to fine-tune the output voltage to get the best sound on a device powered by HYPSONS. The range in which the voltage can be adjusted will be different for different devices. Some allow you to use a larger range. The standard "Voltage Adjustment" range is 95% to 105% of nominal voltage for safety reasons.

WARNING!

Please use this function with caution!

Once you have decided to find your sweet spot, you must confirm the start of the procedure.

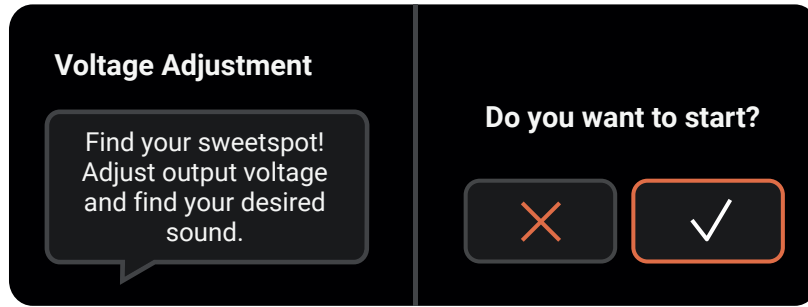


Figure 7.

In the next step you can modify the voltage level. Now you have the option to increase or decrease the DC voltage.

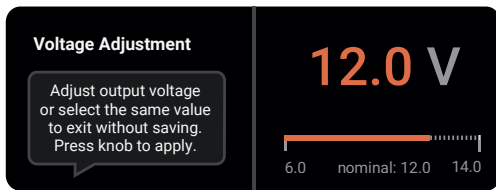


Figure 8.

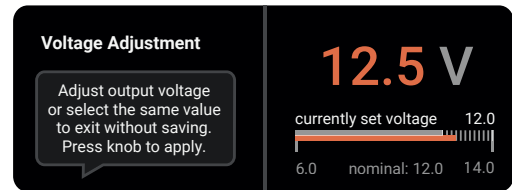


Figure 9.

Confirm the voltage level by pressing the knob. After 4 seconds, the newly set voltage will appear on the DC output.

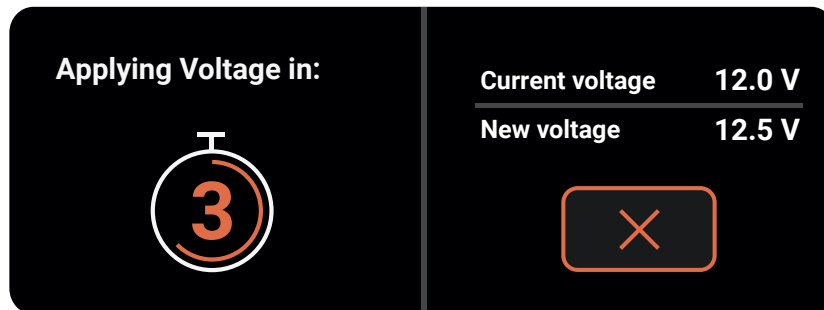


Figure 10.

You can interrupt the countdown by pressing the knob.

When the timer has finished the countdown simply push the knob to go back to the main screen.

Note: Ferrum will not be held liable for damage to the device being powered when the voltage level you set will damage it.

1.4. Power in Standby ON/OFF

When turned on, the HYPSSOS will continue to provide DC, even if it is in Standby mode. To return to the previous screen press the knob.

1.5. 4 Terminal Sensing ON/OFF

Possibility to turn on or off 4TSD (4 Terminal Sensing Design) - this technology results in more clarity and resolution, where without the sound will be more weighted. To return to the previous screen press the knob.

1.6. Spread Spectrum Mode ON/OFF

When turned on, switching frequency modulation is activated in the HYPSSOS power switching circuit. This might influence the reproduction of high frequencies in some devices. To return to the previous screen press the knob.

2. Visuals

2.1. Fe Brightness

Allows you to change the light intensity of the Ferrum logo when the HYPSSOS is turned on. There are 10 brightness levels to choose from or you can turn off the backlit completely.

2.2. Standby Fe Brightness

Allows you to change the light intensity of the Ferrum logo when the HYPSSOS is in standby. There are 5 brightness levels to choose from or you can turn off the backlit completely.

2.3. Display Brightness

Allows you to change the display luminosity. There are 10 brightness levels to choose from.

2.4. Display Auto Off

Allows you to select the time after which the display will be switched off. You can select from: disabled, 3s, 5s, 10s, 15s, 30s, 45s, 60s, 90s. The default is 60s.

2.5. Auto Return

Allows you to select the return time after which the display will go back to the main screen. You can select from: disabled, 3s, 5s, 10s, 15s, 30s, 45s, 60s, 90s. The default is 60s.

3. Trigger

3.1. Input

When selected, the Trigger input wakes up HYPSSOS. This option might be selected when you want to turn on your system by external device like amplifier.

3.2. Output

When this option is selected, the Trigger output wakes up the external device. This option can be used when you want to wake up an external device, such as DAC, by turning on the HYPSSOS.

4. Remote Pairing

Pairing procedure - Apple remote

Procedure can be done in two ways:

1. The Apple remote can be paired exclusively with HYPSSOS.
2. The Apple remote can be paired with currently paired devices and with HYPSSOS.

If you want to pair the Apple remote exclusively with HYPSONS - Enter the "Remote pairing" procedure, then press and hold Menu and Select buttons over 5 seconds while pointing the remote control towards HYPSONS.

If you simply want to pair your Apple HYPSONS remote control, but want it to remember another device you've paired earlier - Enter the "Remote pairing" procedure, then press and hold the Menu and Next buttons over 5 seconds while pointing the remote control towards the HYPSONS.

If you want to interrupt the remote pairing process, press the knob.

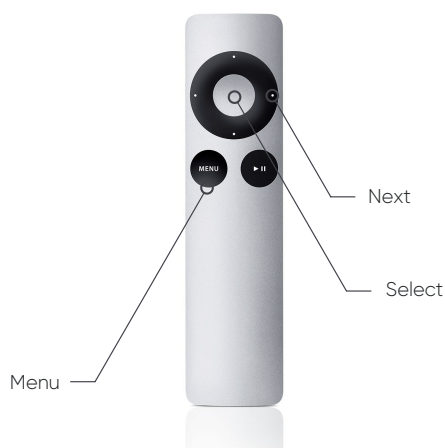


Figure 11.

5. Factory Reset

Allows you to restore Hyspos to its factory settings. This process is irreversible!

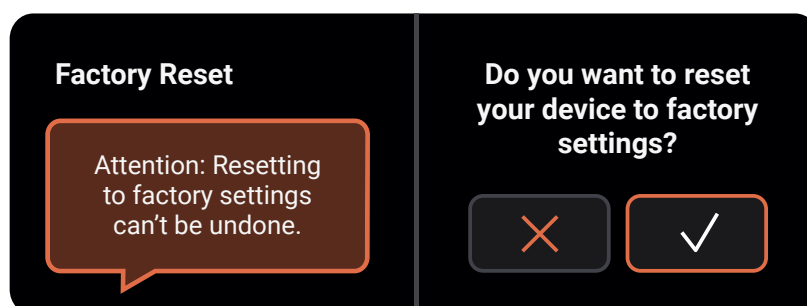


Figure 12.

The cross mark will take you back to the menu. Select the tick mark to start the Hyspos reset process.

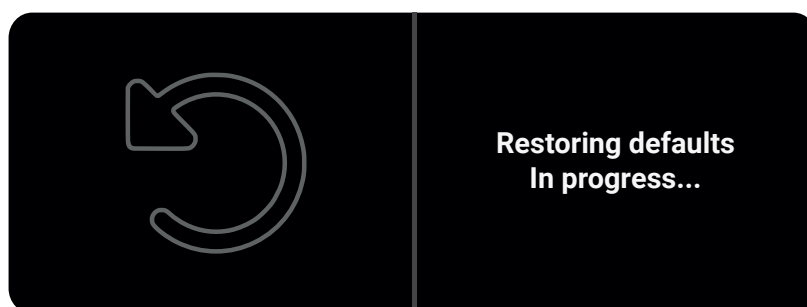


Figure 13.

6. Information

6.1. Contact

Here you will find information how to contact us.

6.2. Firmware

Shows currently installed firmware version. Pressing the knob will start USB firmware update mode.

Note: For more information on the firmware upgrade process, see paragraph "6. Firmware Update".

6.3. About product

Some information about motherboard version, motherboard serial number etc.

6.4. Licenses

Licenses used to create Hypsos software.

6. FIRMWARE UPDATE

Check our website to see if new firmware is available. We recommend using the latest firmware version to ensure the best performance of Hypsos.

You can check your currently installed firmware in the "Information" tab in Hypsos menu or in the Ferrum HYPPOS Firmware Loader app.

Note: Ferrum HYPPOS Updater application is available for Windows and macOS platforms.

FIRMWARE UPDATE PROCESS FOR VERSION OLDER THAN 1.2.0

1. Please download the Ferrum HYPPOS Updater app from this website: ferrum.audio/support and install it on your computer.
2. Turn off the HYPPOS by using the main ON/OFF switch (Fig. 2D) then disconnect HYPPOS DC output cable.
3. Connect HYPPOS via USB cable to your computer.
4. Press the knob and when holding turn on HYPPOS using the main ON/OFF switch.
5. Open HYPPOS Updater app and open firmware file for HYPPOS - firmware file is available on our website here: ferrum.audio/support
6. Click on the "Flash device" button - the process of update will begin.
7. When the update process is complete, turn off the HYPPOS using the main ON/OFF switch (Fig. 2D), wait 5 seconds and you're done. You can use the HYPPOS again.

FIRMWARE UPDATE PROCESS FOR VERSION 1.2.0 AND HIGHER

1. Please download the HYPPOS Updater app from this website: ferrum.audio/support and install it on your computer.
2. Connect HYPPOS via USB cable to your computer.
3. In Hypsos menu find "Information" tab and select it by pushing the knob. Then find "Firmware" tab.

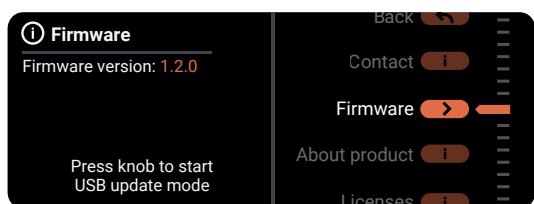


Figure 14.

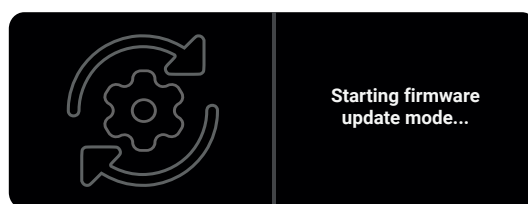


Figure 15.

4. Open HYPPOS Updater app and open firmware file for HYPPOS - firmware file is available on our website here: ferrum.audio/support
5. Click on the "Flash device" button - the process of update will begin.
6. Once the firmware update process is complete, click on the "Close" button, then Hypsos will automatically reset.

7. FUSE REPLACEMENT

Fuse is located in the neighbourhood of AC mains socket (Fig. 2E).

To replace the fuse you can use a flat screwdriver to remove the plastic enclosure where fuse is hidden.

Check if the thin wire inside the fuse is intact. If it's not intact, use a spare fuse for replacement. Spare fuse is hidden inside the fuse enclosure (Fig. 16.).

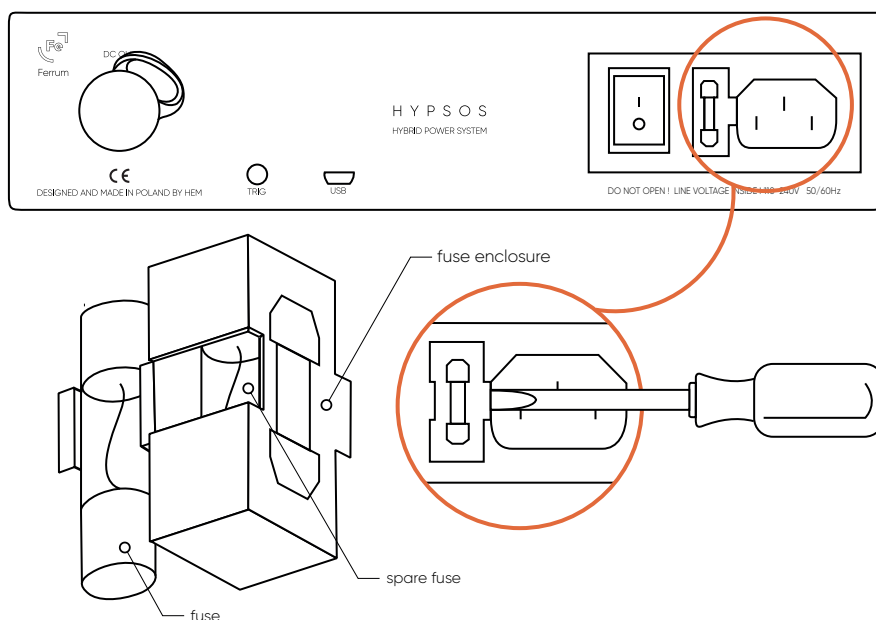


Figure 16.

8. TECHNICAL SPEC

Power Input: Factory configured 110-120 & 220-240Vac/50-60Hz (EU/US Version) or 100Vac/50-60Hz (JP Version)

Output Voltage Range: 5-30V

Max Continuous Output Current (for V_{out} below 13,3V): 6A

Max Continuous Output Current (for V_{out} higher than 13,3V): $I_{out} = 80[W] / DC_{out}[V]$

Maximum Impulse Current: 9A

Maximum Impulse Power: $DC V_{out} * 9A$ (270W for 30V)

Max Continuous Output Power (for V_{out} below 13,3V): $P_{out} = V_{out}[V] * 6[A]$

Max Continuous Output Power (for V_{out} higher than 13,3V): 80W

Dimensions (without knob, feet and connectors): W217,50 mm x L206,50 mm x H50 mm

Net weight: 2,89 kg

Primary winding fuse (external): 5x20mm - 250V 3.15A, slow-blow for Japan version / 250V 2A, slow-blow for Europe, US version

Secondary winding fuse (internal): Littelfuse 154004T, 4A

Power consumption: 230V_{AC}, 50Hz 12V_{DC} out

- Idle - 6VA
- 15W load - 30,7VA
- 60W load - 98VA
- 80W load - 133,9VA

9. WARRANTY

Each individual HYPSSOS undergoes comprehensive quality control and a complete test before shipping.

This PSU is warranted by Ferrum to the owner against defects in workmanship and materials used in manufacture for a period of three years from the date of purchase.

If you suspect that your product is faulty, please contact the place of purchase or you contact Ferrum support. Prior to shipping for warranty services the customer or dealer must obtain an RMA number from Ferrum for warranty services. Units sent without an RMA number will not be accepted.

Proof of purchase in the form of a bill of sale or received invoice, which is evidence that this product is within the warranty period, must be presented to obtain warranty service. This warranty is void and inapplicable if the factory applied Serial Number has been altered or defaced from this product. Faults due to customer misuse, unauthorized modifications or accidents are not covered by this warranty.

Please pack the product very carefully, preferable in the original packing, to be sure no damage can be done during shipment.

Ferrum is not responsible for accessories, items left in the packaging and the box in which the device has arrived for service. Ferrum reserves the right to use a replacement box if necessary.

10. CONTACT FERRUM

In case of questions or suggestions regarding its form or contents, please contact us via our support system available on our website: ferrum.audio/support

11. WARNING

Excessive sound pressure from speakers and headphones can cause hearing loss. In order to use this product safely, avoid prolonged listening at excessive sound pressure levels.

For the customers in the U.S.A.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.

This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications.

You are cautioned that any changes or modifications not expressly approved in this manual could void your authority to operate this equipment.

All interface cables used to connect peripherals must be shielded in order to comply with the limits for a digital device pursuant to Subpart B of Part 15 of FCC Rules.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This product with the CE marking complies with the EMC Directive issued by the Commission of the European Community. Compliance with this directive implies conformity to the following European standards:

Safety

IEC 62368-1:2014 Additionally evaluated to: EN 62368-1:2014, EN 62368-1:2014/A11:2017

EMC

CISPR 32:2015, CISPR 35:2016, IEC 61000-3-3:2013, IEC 61000-3-3:2013/AMD1:2017, IEC 61000-3-2:2018, CISPR 32:2015/AMD1:2019

Additionally evaluated to: EN 55032:2015/A11:2020, EN

55032:2015/A1:2020, EN 55032:2015, EN 55035:2017 AND 47CFR PART 15B, ICES-003 (ISSUE 7)

This product is intended for use in the following Electromagnetic Environments: E1 (residential), E2 (commercial and light industrial), E3 (urban outdoors), E4 (controlled EMC environment, ex. TV studio).

12. INFORMATION ON DISPOSAL FOR USERS OF WASTE ELECTRICAL & ELECTRONIC EQUIPMENT (PRIVATE HOUSEHOLDS).

The Wheelie Bin symbol on the products and/or accompanying documents means that used electrical and electronic products should not be mixed with general household waste. Disposing of this product correctly will help save valuable resources and prevent any potential negative effects on human health and the environment.

To properly dispose harmful substances and recycle the product, the user is obliged to return it at the point of collection of electrical and electronic equipment waste. For more information please contact your local authorities, waste disposal units or retailer.

