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› Ferrofish B4000+ Hammond B3 Organ Module User Manual

Ferrofish B4000+

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Model: B4000+

1. INTRODUCTION AND OVERVIEW

The Ferrofish B4000+ combines the legendary Hammond B3 organ sound with modern design and ease of use. This tone module features 9 real drawbars, high-resolution endless potentiometer knobs, a TFT display, and full MIDI control. It delivers the authentic sound of the B3 in a lightweight package.

Based on the processing power of a Sharc DSP and a Cortex 3 ARM, all features of the original B3 have been modeled with high accuracy. This includes 91 tonewheels, leakage, condition, full polyphony, scanner vibrato, tube amplifier emulation with overdrive, and a convincing rotating Leslie speaker simulation. Key clicks and percussion sounds are also reproduced accurately.

The B4000+ supports connection of up to two keyboards via MIDI ports, plus pedal and sustain controllers. An integrated Split Mode allows a single keyboard to be split for upper and lower manual sections. MIDI data is also transferred via USB, allowing recording in a sequencer. The B4000+ can feed an external audio signal into its internal effect section, such as the rotor and reverb effects, for processing.



Figure 1: Front view of the Ferrofisch B4000+ Organ Module, showing drawbars, display, and controls.

2. KEY FEATURES

- **Hardware Features:** 9 drawbars, 6 high-resolution metal dials, TFT color display.
- **Organ Emulation:** 3 full polyphony manuals, Percussion (harmonic, attack, decay), Tonewheel emulation (leakage, condition), Mechanical emulation (keyclick, key contact delay simulation).
- **Analog I/O:** 2 input / 2 output channels.
- **Headphone Output:** 1 dedicated output.
- **MIDI I/O:** 2 x Input.
- **USB 2.0:** 1 port for MIDI to host PC/Mac.
- **Processor:** ARM Cortex M3 and Sharc DSP.
- **Control Inputs:** Expression Pedal Input, Sustain Switch Input.
- **Power Supply:** DC 12 V / 0.5 A.

3. SETUP GUIDE

3.1 Unpacking and Initial Inspection

Carefully remove the B4000+ module from its packaging. Verify that all included components are present: the B4000+ module, power supply, and any documentation. Inspect the unit for any signs of damage during transit.

3.2 Power Connection

Connect the provided DC 12V / 0.5A power supply to the 'DC IN' port on the rear of the B4000+. Plug the power adapter into a suitable electrical outlet. Ensure the power switch is in the 'OFF' position before connecting power.

3.3 Audio Connections

- **Main Audio Output:** Connect the main audio outputs (2/2 Channels) to your mixer, audio interface, or amplifier using appropriate cables.
- **Headphone Output:** For private monitoring, connect headphones to the 3.5mm headphone jack.
- **External Audio Input:** If you wish to process an external audio signal through the B4000+'s effects, connect your audio source to the analog inputs.

3.4 MIDI and USB Connections

- **MIDI Input:** Connect your MIDI keyboard controller(s) to the MIDI IN ports. The B4000+ supports two MIDI inputs for connecting multiple controllers or a dual-manual setup.
- **USB Connection:** Connect the B4000+ to your computer via the USB 2.0 port. This connection facilitates MIDI data transfer to and from your host PC/Mac for recording or control.
- **Expression Pedal:** Connect a compatible expression pedal to the dedicated Expression Pedal Input for real-time control over parameters like volume or Leslie speed.
- **Sustain Switch:** Connect a sustain pedal to the Sustain Switch Input for sustain functionality.

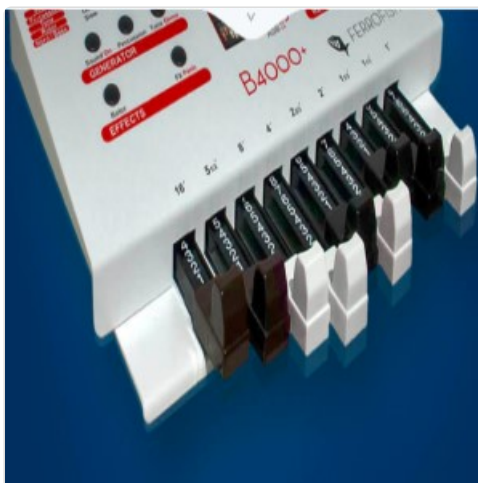


Figure 2: Rear panel of the B4000+ showing various input/output connections.

4. OPERATING INSTRUCTIONS

4.1 Powering On and Basic Navigation

After connecting all necessary cables, switch the power to 'ON'. The TFT color display will illuminate, showing the current settings. Use the high-resolution endless potentiometer knobs and associated buttons to navigate through menus and adjust parameters.

4.2 Using the Drawbars

The 9 physical drawbars control the volume of different harmonic partials, allowing you to shape the organ's tone.

Experiment with various drawbar settings to achieve classic Hammond sounds or create your own unique tones.

4.3 Organ Emulation Settings

- **Tonewheel Emulation:** Access the menu to adjust parameters like tonewheel leakage and condition, which simulate the characteristics of vintage organs.
- **Percussion:** Configure percussion settings including harmonic content, attack, and decay.
- **Mechanical Emulation:** Adjust key click and key contact delay simulations to add realism to your playing.

4.4 Effects and Modulation

- **Scanner Vibrato:** Engage and adjust the scanner vibrato effect for classic modulation.
- **Tube Amplifier Emulation:** Utilize the built-in tube amplifier emulation, including overdrive, to add warmth and grit to the sound.
- **Rotating Leslie Speaker Simulation:** Control the speed and characteristics of the rotating Leslie speaker effect. This can often be controlled via an expression pedal or MIDI controller.
- **Reverb:** Apply and adjust the integrated reverb effect to add spatial depth to your sound.

4.5 MIDI Functionality

- **Split Mode:** If using a single keyboard, activate Split Mode to assign different manual sections (upper/lower) to specific key ranges.
- **MIDI Control:** The B4000+ responds to standard MIDI messages for controlling various parameters. Refer to the online MIDI implementation chart for detailed information.
- **USB MIDI:** When connected to a computer via USB, the B4000+ acts as a MIDI interface, allowing you to record MIDI data from your connected keyboards into a DAW.

4.6 External Audio Processing

Route an external audio signal into the B4000+'s analog inputs to process it through the internal effects section, such as the rotor and reverb. This allows for creative sound design beyond the organ tones.

5. MAINTENANCE

5.1 Cleaning

To clean the B4000+, use a soft, dry cloth. For stubborn dirt, a slightly damp cloth with mild soap can be used, ensuring no liquid enters the unit. Avoid abrasive cleaners or solvents.

5.2 Software Updates

Periodically check the Ferrofisch website for firmware updates. Keeping your B4000+ firmware up-to-date ensures optimal performance and access to new features or bug fixes. Follow the instructions provided with the update package carefully.

5.3 Storage

When not in use, store the B4000+ in a dry, dust-free environment, away from extreme temperatures and direct sunlight. If transporting, use appropriate protective casing.

6. TROUBLESHOOTING

6.1 No Sound Output

- Check all audio cable connections to your mixer/amplifier.

- Ensure the B4000+ is powered on and the volume is not set to minimum.
- Verify that your mixer/amplifier is powered on and its input levels are correctly set.
- If using headphones, ensure they are properly connected and the headphone volume is up.

6.2 MIDI Controller Issues

- Ensure your MIDI controller is connected to the correct MIDI IN port on the B4000+.
- Verify that your MIDI controller is transmitting on the correct MIDI channel(s) that the B4000+ is configured to receive.
- If an expression pedal is responding incorrectly (e.g., backwards), check the B4000+'s settings for expression pedal polarity or calibration. Some controllers may require specific settings.

6.3 Unexpected Sound Characteristics

- If percussion sounds are too prominent, even at minimum settings, check the percussion parameters in the B4000+'s menu. Adjusting EQ on your monitoring system might also help.
- If presets are not saving or are lost, ensure you are following the correct save procedure. Consider checking for and installing the latest firmware update, as this can resolve such issues.

6.4 USB MIDI Connectivity

- Ensure the USB cable is securely connected to both the B4000+ and your computer.
- Check your computer's device manager (Windows) or Audio MIDI Setup (macOS) to confirm the B4000+ is recognized as a MIDI device.
- Verify that your DAW or software is configured to use the B4000+ as a MIDI input device.

7. SPECIFICATIONS

Feature	Detail
Brand	Ferrofish
Model Name	B4000+
Model Number	B4000+
Color	Royal Blue
Number of Keys (Emulated)	91 Tonewheels
Skill Level	All
Special Features	Headphone Jack, 9 Drawbars, TFT Color Display
Supported Software	Standard MIDI Software
Connectivity Technology	USB, MIDI
Power Source	Corded Electric (DC 12 V / 0.5 A)
Headphones Jack	3.5mm Jack
Item Dimensions (L x W x H)	16 x 4 x 11 inches
Item Weight	4.9 Pounds

Processor	ARM Cortex M3 and Sharc DSP
MIDI I/O	2 x Input
Analog I/O	2/2 Channels
Included Components	Keyboard (implied for control), 9 Drawbars, Pedal and Sustain Controllers (inputs)

8. WARRANTY AND SUPPORT

8.1 Warranty Information

The Ferrofisch B4000+ comes with a full 2-year manufacturer warranty. Please retain your proof of purchase for warranty claims. The warranty covers defects in materials and workmanship under normal use.

8.2 Technical Support

For technical assistance, troubleshooting beyond this manual, or warranty service, please contact Ferrofisch customer support. Visit the official Ferrofisch website for contact information, FAQs, and the latest drivers or firmware updates.

It is recommended to consult the official Ferrofisch website for the most up-to-date MIDI implementation chart and factory preset lists, as these may be updated periodically.