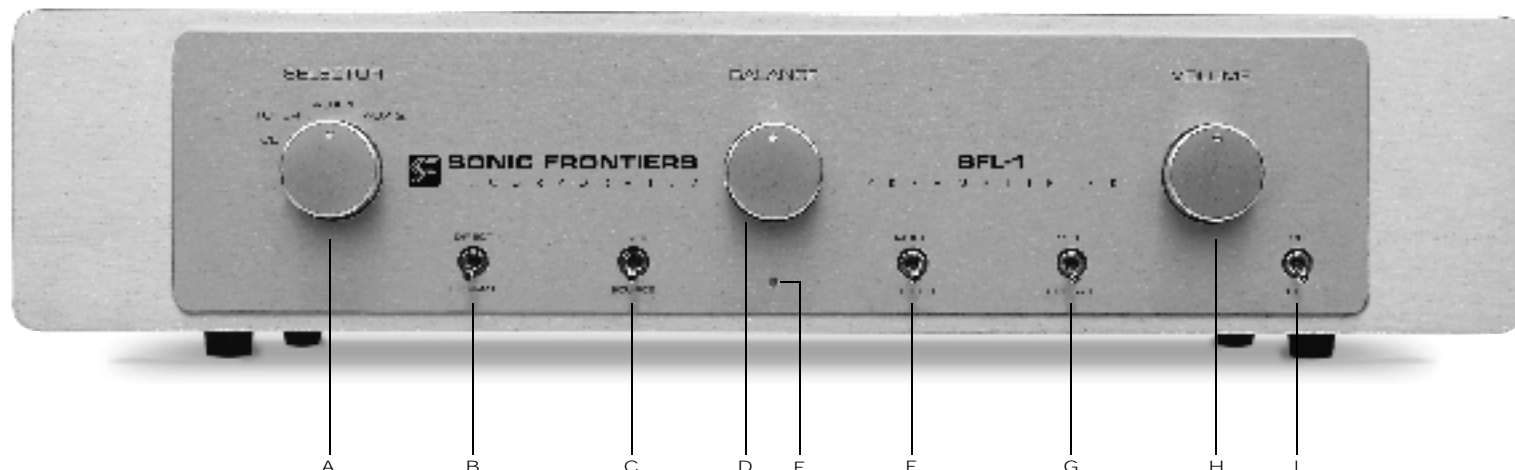


OWNER'S MANUAL

THE SONIC FRONTIERS SFL-1 & SFL-1 SIGNATURE PREAMPLIFIER

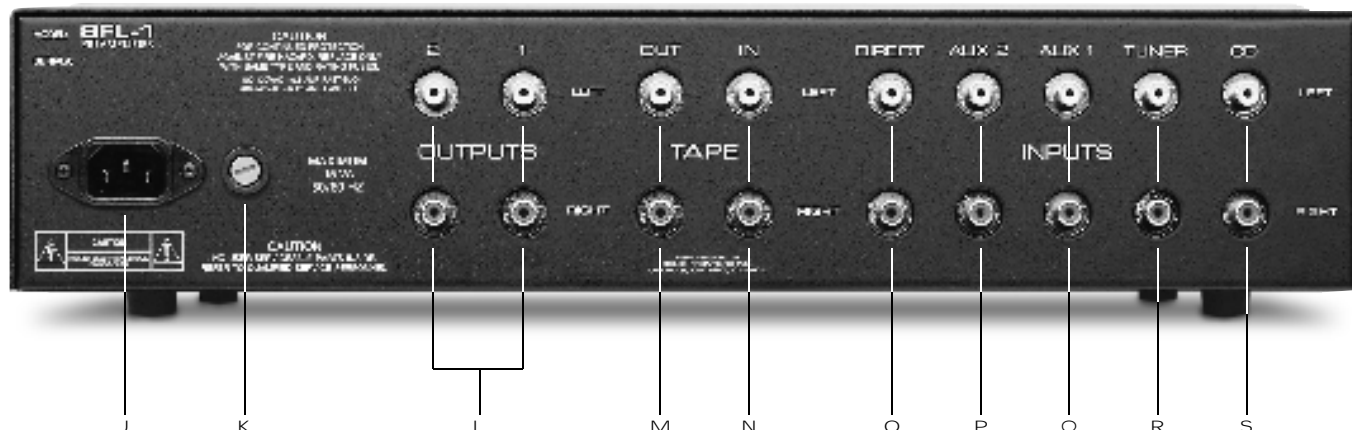


OPERATION, CONNECTIONS AND CONTROL FUNCTIONS



- A - Selector Switch - This knob is turned to select an Input (P) through (S). The Selector Switch is bypassed when the SFL-1 is in the Direct mode as selected by the Direct/Normal Switch (B).
- B - Direct/Normal Switch - When in the DIRECT position, this toggle switch selects the Direct Input (O) from a preferred source, allowing the source signal to bypass all unnecessary control functions. The signal is only affected by the Mute (G), the Volume Control (H), and the gain stage of the SFL-1. When in the NORMAL position, all regular functions are in use and the source is chosen through use of the Selector Switch (A).
- C - Tape/Source Switch - When in the SOURCE position, this toggle switch routes the signal from the Inputs (P) through (S) - as selected by the Selector Switch (A) - to the Tape Outputs (M). Recording is only possible when the toggle is in the SOURCE position. In the TAPE position, only the Tape Input jacks (N) are operational, and the tape is then handled as a selected source.
- D - Balance Control - This knob controls the relative balance of the left and right channels to compensate for any discrepancies caused by speaker placement, source imbalance, etc. The Balance Control is bypassed when the SFL-1 is in the Direct mode as selected by the Direct/Normal Switch (B).
- E - Power Indicator LED - This LED lights when the Preamplifier is receiving power from an AC source. It will flash at one second intervals during warmup delay and muting. After a 45 second warmup delay, the LED glows steadily green, the relay circuit is no longer muted, and the preamplifier is ready for operation.
- F - Mono/Stereo Switch - When in the MONO position, this switch combines the left and right signals to produce a mono signal, which is useful for system troubleshooting when problems are suspected. When in the STEREO position, normal left and right channel signals are processed.
- G - Mute/Operate Switch - When in the MUTE position, this toggle switch cuts off the signal to the SFL-1 Outputs (L), muting the system (the LED (E) flashes as a reminder). When in the OPERATE mode, the Outputs (L) are electrically connected, allowing the signal to be passed to the next component (i.e. a power amplifier or electronic crossover).
- H - Volume Control - This knob allows variable control over the SFL-1 output level. Turn it clockwise to increase the volume.
- I - Power Switch - When in the ON position, this switch allows the SFL-1 to receive power, rendering the SFL-1 operational, as indicated by the Power Indicator LED (E). When in the OFF position, the SFL-1 is not receiving power and is not operational.

Back view of the Signature version with Kimber jacks.



J - Detachable Power Cord Socket - Plug the Detachable Power Cord into this socket (see Figure 1). The SFL-1 is factory set for the correct operating voltage for the area in which it is sold (see shipping box for voltage setting). If a different operating voltage is required, please contact an authorized Sonic Frontiers dealer, distributor or the factory directly.

K - AC Line Fuse - This is the AC fuse socket. The fuse may be accessed with a small flat-bladed screwdriver by turning the fuse cap a 1/2 turn counterclockwise to unlock a spring that ejects the fuse holder out. The unit is factory installed with "fast-blo" .5 Amp 250V (0.25" x 1.25") for 100-120V use or .25 Amp 250V (0.25" x 1.25") for 200-240V use.

L - Sets 1 & 2 of Left and Right RCA Single-Ended Main Outputs - These outputs should be used when connecting to the single-ended RCA inputs on other units, such as a power amplifier or crossover unit; connect left channel to left channel and right channel to right channel. The two sets of outputs allow for easier biamping and greater flexibility over a single set of output jacks when dealing with components such as electronic crossovers, powered subwoofers, etc.

M-Left and Right RCA Single-Ended Tape Output - This output connects to the single-ended RCA input of a tape deck; left channel to left channel and right channel to right channel. These outputs are not operational when the Direct/Normal Switch (B) is in the DIRECT mode, or when the Tape/Source Switch (C) is in the TAPE mode.

N -Left and Right RCA Single-Ended Tape Input - This input accepts a single-ended RCA input connection from a tape source; left channel to left channel and right channel to right channel.

O-Left and Right RCA Single-Ended Direct Input - This input accepts a single-ended RCA input connection from a preferred line level source to achieve the highest possible sonic performance, bypassing unnecessary control functions; left channel to left channel and right channel to right channel. This input is selected by placing the Direct/Normal Switch (B) in the DIRECT position.

P- Left and Right RCA Single-Ended Auxiliary 2 Input - This input accepts a single-ended RCA input connection from any line level signal source; left channel to left channel and right channel to right channel. It is selected via the Source Selector Switch (A).

Q-Left and Right RCA Single-Ended Auxiliary 1 Input - This input accepts a single-ended RCA input connection from any line level signal source; left channel to left channel and right channel to right channel. It is selected via the Source Selector Switch (A).

R-Left and Right RCA Single-Ended Tuner Input - This input accepts a single-ended RCA connection from a tuner source; left channel to left channel and right channel to right channel. It is selected via the Source Selector Switch (A).

S-Left and Right RCA Single-Ended CD Input - This input accepts a single-ended RCA connection from a Compact Disc Player or Digital-to-Analogue Converter; left channel to left channel and right channel to right channel. It is selected via the Source Selector Switch (A).

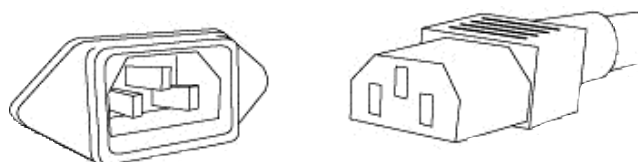


Figure 1 - Align socket pins to corresponding holes and push together firmly.

INSERTION OF THE TUBE

The SFL-1 comes with a 12AT7A (Ei) tube and the Signature model with a CV4024/M8162 tube, individually boxed and bagged along with a cotton glove, screwdriver, and screws for fastening the SFL-1 cover. If desired, replacement of the tube may be done to suit the listener's preference. The following tube types will work under the same technical parameters as the supplied tube and require no circuitry modification to function:

- 6201 • ECC81

Please read and follow these instructions carefully for initial tube insertion or tube replacement.

1. Be sure that the AC DETACHABLE POWER CORD IS DISCONNECTED from the SFL-1 before removing the chassis cover.
2. Using the screwdriver supplied, remove the cover of the SFL-1. For your convenience, only two of the screws are installed at the factory.
3. When handling the tube, it is recommended that the cotton gloves provided be worn to prevent skin oils from depositing on the glass surface and possibly causing the tube to become prematurely "gassy", thereby shortening the tube's useful operating life.
4. Take the tube and inspect the pins, noting the larger space between two of the pins. This space will align with the same larger space between two of the pin holes on the socket. Insert the tube into the tube socket, making sure all pins and pin holes are aligned (see Figure 2). Do not force the tube into the socket. "Rock" the tube gently while pushing slowly until the tube is firmly seated.

The SFL-1 Signature comes with a Pearl™ Tube Cooler, for extended life of the CV4024/M8162 tube. Install the cooler at this point by placing the metal sinks around the glass envelope of the tube, keeping the bottom edge away from the top surface of the tube socket. Next install the 2 rubber "O"-rings, spacing them evenly 1/3 from the bottom and 1/3 from the top to clamp the cooler firmly around the tube.

5. Replace the cover and fasten it with the screws provided. The SFL-1 is now ready for operation.

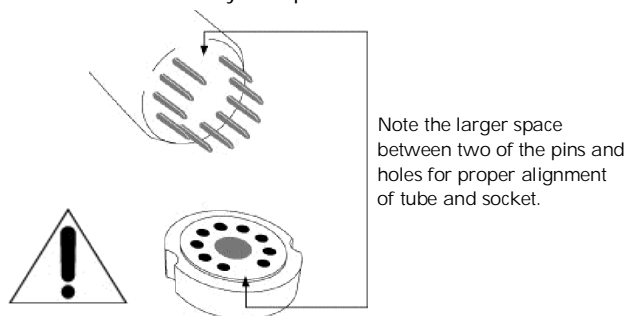


Figure 2 - Tube pin alignment with the socket.

WARNING-DISCONNECT the AC Detachable Power Cord from the SFL-1 and wait 5 minutes before removing the chassis cover.

OPERATION OF THE SFL-1 PREAMPLIFIER

Before plugging in the SFL-1, check to see that the unit is configured for the correct AC line voltage for country of use. The operating AC line voltage is indicated on the side of the shipping box. If the SFL-1 Preamplifier is set incorrectly for the country in which it is to be operated, contact the dealer or distributor in your area. If the unit is configured properly, continue with operation.

Connect the Detachable Power Cord to the SFL-1 chassis (see Figure 1) and plug your SFL-1 into the AC power source.

All remaining connections are made with co-axial cable and RCA connectors to or from other single-ended units.

Connect source units to the Inputs of the SFL-1 (O through S); left channel to left channel and right channel to right channel. It is recommended that the preferred or most listened-to source be connected to the Direct Input (O), to achieve the highest possible sonic performance (see Figure 3).

If a tape or other line level recording device is being implemented, connect the left and right audio output of the unit to the corresponding left and right Tape Input (N) of the SFL-1. Also connect the left and right Tape Outputs (M) on the SFL-1 to the corresponding left and right audio inputs of the recording device (see Figure 3).

Connect Set 1 of the Main Outputs (L) on the SFL-1 to a stereo amplifier or two mono amplifiers; left channel to left channel and right channel to right channel (see Figure 3). Set 2 of the Main Outputs (L) may be used under different situations and in combination with Set 1. These situations include biamping, the use of active crossovers, powered subwoofers and other equipment, all being unique and system dependent. Refer to the instruction manuals provided with the other equipment before using the second set of Outputs.

The SFL-1 Preamplifier is now ready for operation. Power the Preamplifier by placing the Power Switch (I) in the ON position. The Power Indicator LED (E) will flash on and off for approximately 45 seconds. During this time, the signal outputs are muted while the tube is warming up and stabilizing. As soon as the Power Indicator LED stops flashing the SFL-1 is ready to play.

Select a ready source through the Selector Switch (A) or by placing the Direct/Normal Switch (B) in the DIRECT position (if the Direct Inputs (O) are connected to a ready source) to bypass the Selector Switch, Balance Control (D), Tape/Source Switch (C) and the Mono/Stereo Switch (F) for optimum performance.

Balance is adjusted through use of the Balance Control (D); turning it left and right will adjust the left and right levels respectively. The centre "detent" is an indicator for equal or balanced left and right levels.

Volume is adjusted through use of the Volume Control (H). Turning this control clockwise increases the volume level. Be sure the level is sufficiently low when turning the unit ON, or returning to the OPERATE mode after MUTING, to prevent damage to speakers, amplifiers or the SFL-1 itself.

To record from a source, place the Tape/Source Switch (C) in the SOURCE position and commence recording. To play back a tape recording, place the Tape Source Switch in the TAPE position.

Muting the SFL-1 Preamplifier is achieved by placing the Mute/Operate Switch (G) in the MUTE position; the output signal is then cut off. To resume listening place the switch in the OPERATE position.

The mono/stereo function is controlled by Mono/Stereo Switch (F). When this switch is placed in the MONO position the left and right stereo signal is combined and the SFL-1 will send an identical mono signal to the left and right Main Outputs (L). In the STEREO position, normal stereo playback is produced.

TROUBLESHOOTING

If at any time the SFL-1 Preamplifier fails to work properly, consult this checklist:

1. Check that the AC Detachable Power Cord is plugged into the SFL-1 Detachable Power Cord Socket (J) and is connected to a live source of AC power. For instance, if using a power bar, check that the bar is turned on.

2. Ensure that all Input and Output connections are secure for a proper electrical contact.

3. DISCONNECT THE AC POWER CORD from the SFL-1 and check that:

- A "fast-blo" fuse, with a rating of .5 Amp/250 V (.25 Amp/250 V for European and Asian versions), is installed in the cylindrical tube next to the AC power socket.
- The AC power fuse is intact and has not blown. If the fuse has blown the thin metal conductor will have melted and the glass may appear "smoked". If the fuse has blown, replace with a fuse of the same rating (.5 Amp/250V fast-blo for 100 to 120 volt countries and .25 Amp/250V fast-blo for 200 to 240 volt countries).

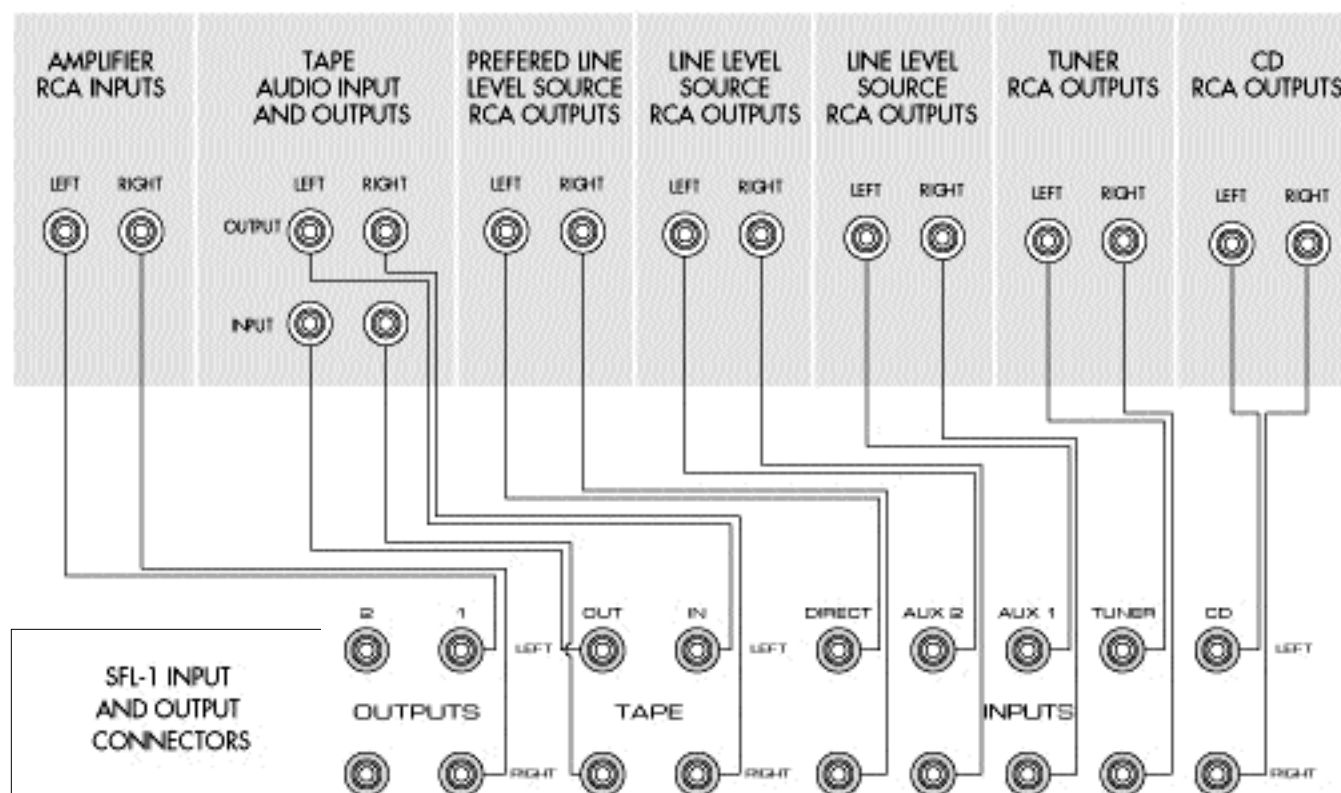
NOTE: Under no circumstances should you replace the AC power fuse with one of a higher current rating! Doing so may cause further damage to the SFL-1 and will also void the warranty. In addition, your continued protection from risk of fire or shock would be seriously compromised.

4. DISCONNECT THE AC POWER CORD, wait 5 minutes, remove the chassis cover and ensure the tube is plugged firmly into its socket as described in "INSERTION OF THE TUBE".

5. Be sure the rest of the system is functioning properly (i.e. source unit, power amplifiers, cables and connections, etc.).

6. Check that both the front panel Power Indicator LED (E) is lighted (glowing light green). If all of the above troubleshooting steps have been followed and the LED is not lighted (remains dark green), contact your dealer or distributor for assistance.

Figure 3 - Single-Ended RCA Input and Output connections made to the SFL-1 Preamplifier.



SFL-1 PLACEMENT FOR PROPER VENTILATION

Allow at least 4" (15 cm) of clear space above the SFL-1 chassis for proper ventilation, making sure the air vent slots in the chassis cover remain unobstructed. Also, be sure that the SFL-1 Preamplifier is placed on a secure, hard, and level surface.

SAFETY INSTRUCTIONS

1. Ventilation - Although your SFL-1 Preamplifier generates only nominal heat in use, be sure that the ventilation slots in the top cover have at least 4" of unobstructed air space above them.
2. Water and Moisture - This product should not be used near water. To prevent fire or shock hazard, do not expose this product to rain or moisture.
3. Heat - This product should be situated away from heat sources such as radiators, heat registers, stoves, or other appliances which produce heat.
4. Power Sources - This product should be connected to an AC power source of the proper rated voltage. The original shipping containers will stipulate the AC voltage this unit can operate with correctly.
5. Cleaning - A regular dusting with a soft, non-abrasive cloth will generally keep the finish of the faceplate and chassis looking like new. At no time should you allow any liquid to come in contact with the SFL-1 Preamplifier; it may run into the electronic circuitry and cause damage which will not be covered under your warranty.
6. Servicing - Do not open this product. No user serviceable parts inside. Refer servicing to an authorized service technician.
7. Non-Use Periods - The power cord of this product should be unplugged from the outlet when left unused for an extended period of time.
8. Do not remove the SFL-1 chassis cover while the unit is "on", or connected to an AC power source. Cover screws could fall through the ventilation slots and cause electrical damage to the SFL-1.

PACKING MATERIALS

We recommend that you retain all of the packing material and shipping boxes for your SFL-1 Preamplifier. They are custom designed to prevent shipping damage from occurring. Sonic Frontiers, Inc. will accept no responsibility for any damage occurring to an SFL-1 Preamplifier that is shipped in packing material other than the original Sonic Frontiers packing material.

DISCLAIMER OF LIABILITY

Under no circumstances does Sonic Frontiers, Inc. assume liability or responsibility for injury or damages sustained in the use or operation of this equipment or for damages to any other equipment connected to it.

Sonic Frontiers, Inc. reserves the right to make design changes or improvements without the obligation to revise prior versions. All specifications are subject to change without notice.

LIMITED FIVE YEAR WARRANTY

Sonic Frontiers, Inc. warrants to the purchaser that each SFL-1 Preamplifier is free of manufacturing defects for a period of five (5) years from the date of purchase. This five (5) year limited non-transferable warranty excludes all vacuum tubes, which we warrant for a period of twelve (12) months. To receive this warranty, the original purchaser must complete and mail to Sonic Frontiers, within thirty (30) days from the date of purchase, the enclosed Warranty Registration Card. Sonic Frontiers, Inc. will then validate the warranty to the original purchaser. This warranty is subject to the following conditions and limitations:

1. Warranty applies only to the original purchaser.
2. This warranty is void and inapplicable if the product has been handled other than in accordance with the instructions in this Owner's Manual, abused or misused, damaged by accident or neglect or in being transported, or the defect is due to the product being tampered with, modified or repaired by anyone other than Sonic Frontiers, Inc. or an authorized Sonic Frontiers repair depot.
3. Warranty does not cover normal maintenance.
4. Sonic Frontiers, Inc. shall not be responsible in any way for consequential or indirect damages or liabilities resulting from the use and operation of the product covered herein or resulting from any breach of this warranty or any implied warranty relating to said product.

During this period, Sonic Frontiers, Inc. will repair or replace any defective components free of charge. A Return Authorization Number (RA Number) is required before any product is returned to our factory for any reason. This number must be visible on the exterior of the shipping container(s) for Sonic Frontiers to accept the return.

Units shipped to us without a Return Authorization Number or without a visible RA Number on the exterior of the shipping container(s) will be returned to the sender, freight collect.

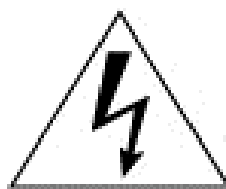
Units to be repaired by Sonic Frontiers, Inc. must be sent shipping and insurance prepaid by the original purchaser in the original packing material. A returned product should be accompanied by a written description of the defect. Repaired units will be returned by Sonic Frontiers, Inc. shipping and insurance prepaid.

All other warranties or conditions either written or implied are void.

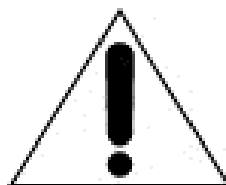
Note: In foreign markets (anywhere outside of Canada and the USA), the warranty is supplied by the authorized International Distributor. Exact terms and conditions may vary.

SFL-1 & SFL-1 SIGNATURE TECHNICAL SPECIFICATIONS

Frequency Response (100K load)	2 Hz to 100 kHz ± 0.5 dB > 200 kHz -0.3 dB
THD & N (@ 1 V output)	< 0.1% from 20 Hz to 20 kHz typically < 0.05% @ 1 kHz
Gain	20 dB @ 1 kHz
Noise	180 μ V unweighted (volume control @ 12 o'clock) -85 dB below @ 2 Volt R.M.S. output
Intermodulation Distortion	< 0.3%, @ 2 V output
Input Impedance	45 K ohms (Direct input) 90 K ohms (Normal inputs)
Output Impedance	320 ohms @ 1 kHz Minimum Recommended Load Impedance 10 K ohms
Output Voltage	Maximum 25 V R.M.S.
Maximum Input (wise)	2.5 V R.M.S. (Volume control fully clock- wise)
Stereo Separation	60 dB @ 1 kHz (Crosstalk)
Power Requirements	20 VA 160 mA A.C./120V A.C. 20 VA 80 mA A.C./240V A.C.
Fuse Requirements (2)	0.5 Amp 250 V fast-blo (100 V to 120 V Countries) 0.25 Amp 250 V fast-blo (200 V to 240 V Countries)
Tube Complement	1 - 12AT7A (Ei) 1 - CV4024/M8162 (Signature Version)
Dimensions	19" Wide x 11.5" Deep x 4.5" High (48 cm x 29.25 cm x 11.5 cm)
Weight	22 lbs (10 kg) - unpacked
Warranty	5 years parts and labour 1 year on the tubes



This symbol is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



This symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

We at Sonic Frontiers are sure that you will derive many years of listening pleasure with your new SFL-1 Preamplifier. This Owner's Manual contains important information regarding the operation and care of the SFL-1. Be sure to read this manual carefully and follow these instructions in order to keep it looking, operating and sounding its best.



BREAKING THE SOUND BARRIER

2790 Brighton Road, Oakville, Ontario, Canada L6H 5T4 Telephone: (905) 829-3838 Facsimile: (905) 829-3033
Sonic Frontiers can be reached from 9:00 a.m. to 6:00 p.m., Eastern Standard Time (E.S.T.), or 24 hours a day by facsimile.