

BRYSTON

2.5BsST²
OWNER'S MANUAL

IMPORTANT SAFETY INSTRUCTIONS



The lightning flash with arrowhead symbol within an equilateral triangle, is intended to alert the user to the presence of un-insulated "dangerous voltage " within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used use caution when moving the cart/apparatus combination to avoid injury from tip-over.
13. Unplug this apparatus during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.



WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPARATUS TO RAIN OR MOISTURE.

DO NOT EXPOSE THIS EQUIPMENT TO DRIPPING OR SPLASHING AND ENSURE THAT NO OBJECTS FILLED WITH LIQUIDS, SUCH AS VASES, ARE PLACED ON THE EQUIPMENT.

TO COMPLETELY DISCONNECT THIS EQUIPMENT FROM THE AC MAINS, DISCONNECT THE POWER SUPPLY CORD PLUG FROM THE AC RECEPTACLE.

THE MAINS PLUG OF THE POWER SUPPLY CORD SHALL REMAIN READILY OPERABLE.

BRYSTON LIMITED WARRANTY

Bryston analog audio products are warranted to be free from manufacturing defects for twenty (20) years from the original date of manufacture. The warranty includes parts and labour.

Bryston Digital products and cables are warranted for five years from the original date of manufacture. The warranty includes parts and labour.

Bryston products having motorized moving parts, excluding motorized volume controls, are warranted for three years from the original date of manufacture. The warranty includes parts and labour.

Bryston will remedy the problem by repair or replacement, as we deem necessary, to restore the product to full performance. Bryston will pay return shipping costs for the full length of the specific product's warranty.

In the event of a defect or malfunction, contact Bryston's repair centers for return authorization. Products must be returned using original packaging material only. Packing material may be purchased from Bryston if necessary. This warranty is considered void if the defect, malfunction or failure of the product or any component part was caused by damage (not resulting from a defect or malfunction) or abuse while in the possession of the customer. Tampering by persons other than factory authorized service personnel or failure to fully comply with Bryston operating instructions voids the warranty. This warranty gives you specific legal rights and you may also have other rights which may vary from province to province and country to country.

As of 2006-02-22 Bryston will only warranty Bryston products purchased through authorized Bryston dealers. Bryston products with a date code of 0608 or higher (date code format is "yyww", where "yy" is the two least significant digits of the year and "ww" is the week of the year) must be accompanied by a copy of the bill-of-sale from a Bryston authorized dealer to qualify for warranty service. The warranty is transferable from the original owner to a subsequent owner as long as a copy of the bill-of-sale from the original authorized Bryston dealer accompanies the re-sale. The copy of the bill of sale to any subsequent owner need ONLY include the Name of the Bryston Authorized Dealer and the Model and Serial number of the Bryston product. The warranty will only be honored in the country of the original purchase unless otherwise pre-authorized by Bryston.

BRYSTON SERVICE in CANADA:

Postal address: **PO. BOX 2170, Stn. Main
PETERBOROUGH, ONTARIO
CANADA K9J 7Y4**

Courier address: **677 NEAL DRIVE
PETERBOROUGH, ONTARIO
CANADA K9J 6X7**

PHONE: 705-742-5325
FAX: 705-742-0882
E-mail: cdnser@bryston.com

BRYSTON SERVICE in the USA:

**79 COVENTRY ST., Suite 5
NEWPORT, VERMONT
U.S.A. 05855-2100**

PHONE: 802-334-1201
FAX: 802-334-6658
E-mail: usaser@bryston.com

BRYSTON SERVICE outside Canada and the USA:

contact your local distributor or

CHECK OUR WEB SITE: www.bryston.com
E-MAIL BRYSTON DIRECTLY: cdnser@bryston.com
FAX BRYSTON DIRECTLY: 01-705-742-0882
PHONE BRYSTON DIRECTLY: 01-705-742-5325

TABLE of CONTENTS

Safety Instructions, Warranty and Contact Information	Opposite
General Information	Page 1
Introduction	
2.5BSST ² Description	
Power Conditioners	
LED Status Indicators	
Remote Power Control	Page 2
Rear Panel Legends	Page 3
Front Panel Legend	Page 4
Technical Specifications	
Exterior Dimensions & Installation Recommendations	Back Page

INTRODUCTION:

Thank you for choosing the Bryston 2.5BsST². We welcome any suggestions you may have, or comments regarding the operation of your amplifier. We consider you, our customer, to be Bryston's most important resource, and your opinion is very much appreciated. No warranty card is necessary to initiate your coverage. Refer to the back page for detailed warranty information. Please save the original box and all packing materials. Always use the original packing materials when shipping or moving the 2.5BsST².

BRYSTON 2.5BsST² AMPLIFIER DESCRIPTION:

The 2.5BsST² is a dual mono design power amplifier consisting of two totally independent amplifiers with +/-58V power supply modules. The Bryston 2.5BsST² will operate as a STEREO power amplifier or as a bridged single channel power amplifier. Each 2.5BsST² channel provides input switching and connections for balanced (XLR type) or single ended (RCA style) input. Each 2.5BsST² channel provides sensitivity selection for 1 Volt (29dB gain) or 2 Volt input sensitivity (23dB gain). The 2.5BsST² has remote A/C power control using a low volt trigger input. (see Remote Power Control section.)

INSTALLATION SETUP and RECOMMENDATIONS:

Check the label next to the power input connector on the rear of the 2.5BsST² and verify your amplifier complies to your local A/C voltage and frequency requirements.

The 2.5BsST² is a convection cooled amplifier and requires the installation to allow for un-restricted air flow through the heat sinks. We recommend maintaining at least 3 inches of clear space to the sides of the amplifier, and if possible that the 2.5BsST² be on its own dedicated shelf. Install only horizontally with logo up. The 2.5BsST² should not be installed near other heat sources like heating vents or radiators. Equipment mounted above the 2.5BsST² should maintain at least 3 inches of clearance. The 2.5BsST² should not be installed in tight enclosed areas.

(See **2.5BsST² INSTALLATION** for more details)

Bryston recommends that at least 6 inches of space be provided to the rear of the amplifier for properly dressing input, output and power cables. Speaker cables should be as short as possible. Use quality cables of at least 16 gauge . The 2.5BsST² binding posts will accept stripped bare wire, pin connectors, spade lugs or banana plugs. Use gold plated connectors for lowest contact resistance. After all input cables and speaker output connections are correctly made, plug the power cable into the wall outlet. The power on/off switch is located on the front panel and is labeled **2.5BsST²**. Simply depress the switch to turn on and push again to turn off. The 2.5BsST² may also be powered on using a low voltage trigger. (see **Remote Power Control** section.)

POWER CONDITIONERS:

Bryston urges caution in choosing a power conditioner for your audio/video system. Large power amplifiers can draw very substantial current from the wall plug, and many so-called power conditioners can in fact hinder the supply of current by inserting resistances in series with the line cord. However, there are now power conditioners that can reduce or eliminate RF and 'hash' from the AC supply and may actually improve current delivery to your system. This type of power conditioner (exemplified by 'TORUS' Power Conditioners) uses the energy storage in a large toroidal transformer to provide high instantaneous power and reduce the substantial AC output resistance of the wall socket and house wiring. This resistance can be in the range of 0.5 to 1 Ohm and is typically reduced to only a few milliOhms by the Power Conditioner. That in turn considerably reduces Voltage drop in the power line on high current surges and quite substantially increases the stability of the power line improving audio (and video) focus, precision and clarity.

LED STATUS INDICATORS:

The 2.5BsST² uses bi-color LED's with green indicating NORMAL operation, FLASHING RED indicating overload or clipping, and ORANGE (red+green together) indicating thermal shutdown. Upon power-up the 2.5BsST² LED's will remain "RED" until all voltages stabilize, then the unit comes out of mute and the LED's turn GREEN.

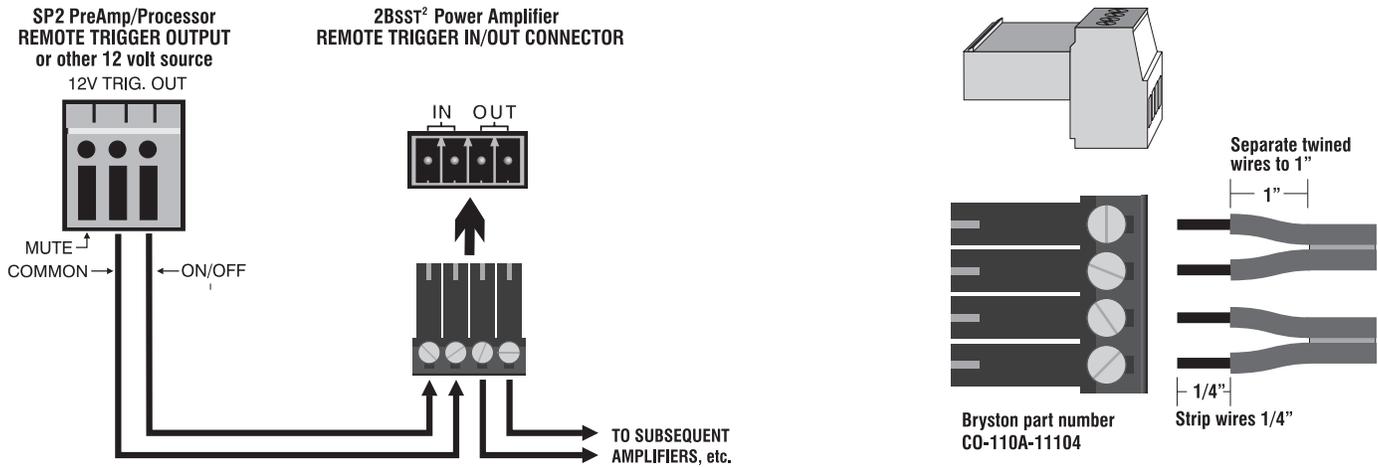
Should the LED indicator flash RED or contain a substantial RED content when program is present, the program INPUT level is too high and the output can no longer accurately follow the input (CLIPPING). This condition may cause speaker damage if it continues. Reduce the input level until the 2.5BsST² flashes RED only on the loudest passages in the program. Substantial clipping indicates the amplifier application will need either a more powerful amplifier or more efficient loudspeakers.

Should the LED's turn ORANGE the 2.5BsST² has shut down due to overheating. The 2.5BsST² will reset itself when the heat sink temperature returns to a safe operating temperature. Thermal shutdown indicates the amplifier is incorrectly installed and a remedy must be found to provide better cooling for the amplifier.

REMOTE POWER CONTROL ~ 12 VOLT TRIGGER CONNECTOR:

The 2.5BSST² may be powered on or off using a 12 volt A/C or D/C voltage by using the rear panel 4 position screw terminal connector. Insert the 12 volt wires into the input labeled 'IN' (polarity is not important). The power amplifier will now power on when a 12 volt trigger voltage is applied or off when removed. This same trigger voltage is available at the connector positions labeled 'OUT' after the 2.5BSST² has completely powered up. This voltage can then be used to power another 12 volt device. This feature allows sequencing of your power amps without large turn-on surges.

IMPORTANT: *the front panel power switch must be OFF in order for the 12 volt trigger feature to work.*



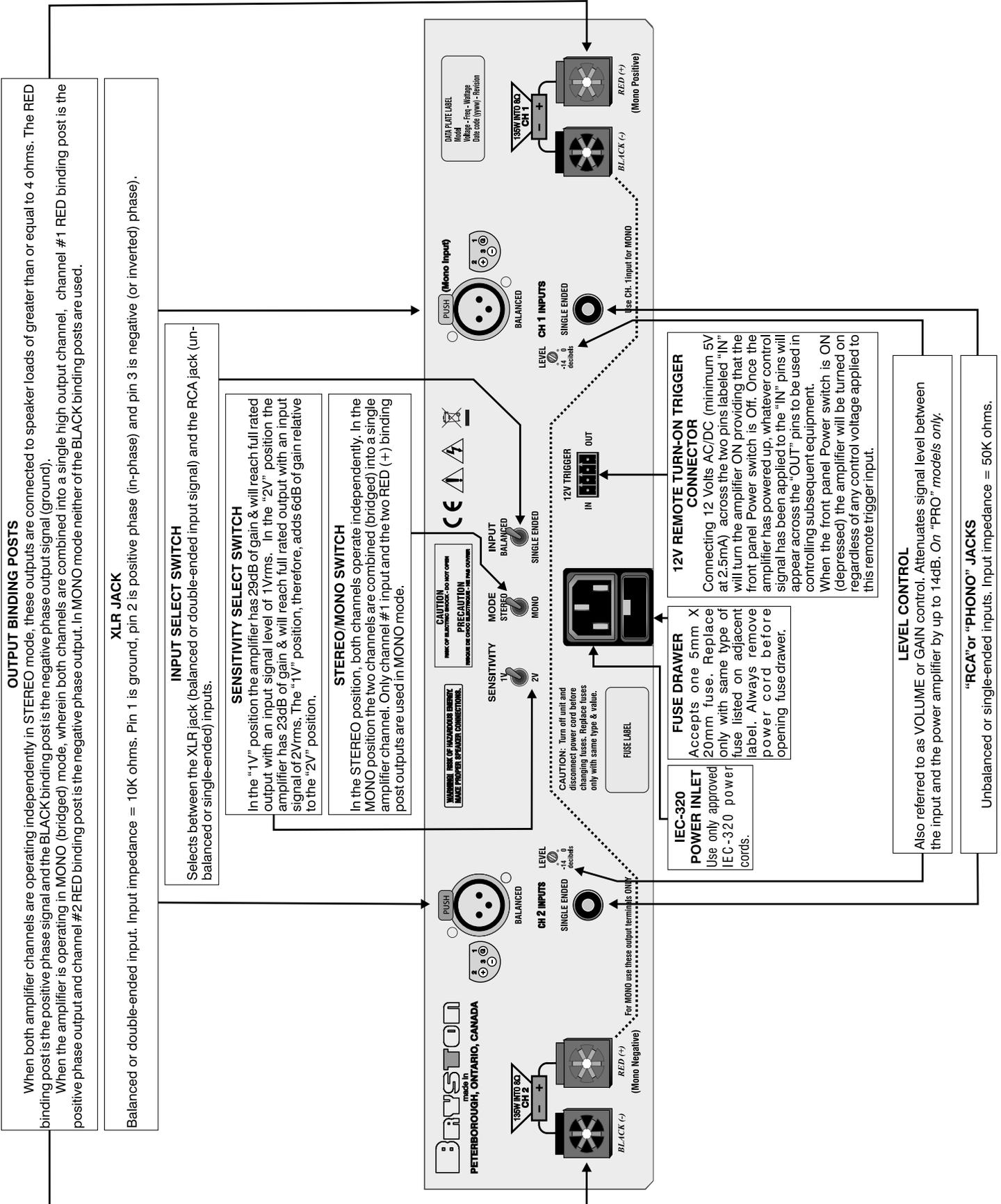
OUTPUT (SPEAKER) WIRING REQUIREMENTS:

Use Class 2 Wiring to connect amplifier to speakers.

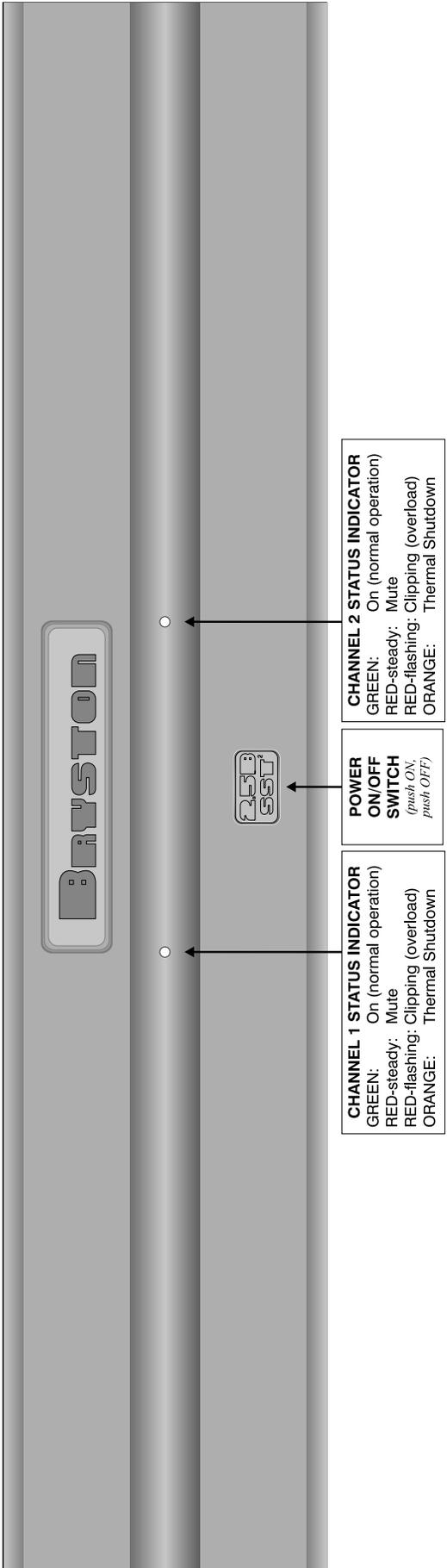
Conductors connected to the speaker output terminals shall be insulated at not less than the requirements of National Electrical Code (NEC) Article 725.179 and shall be installed in accordance with NEC 725.133 and 725.154 for US; and equivalent requirements in Canadian Electrical Code (CEC), Sections 12 and 16 for Canada).

Type TR-64 or equivalent conductors, 24 AWG minimum, enclosed in an outer thermoplastic jacket of 0.8mm minimum wall thickness or some suitable equivalent sleeving that complies with the flames tests of CSA 22.2 No. 198.1 shall be acceptable.

2.5BSST² REAR PANEL LEGEND



2.5BSST² FRONT PANEL LEGEND & SPECIFICATIONS



CHANNEL 2 STATUS INDICATOR
 GREEN: On (normal operation)
 RED-steady: Mute
 RED-flashing: Clipping (overload)
 ORANGE: Thermal Shutdown

POWER ON/OFF SWITCH
(push ON, push OFF)

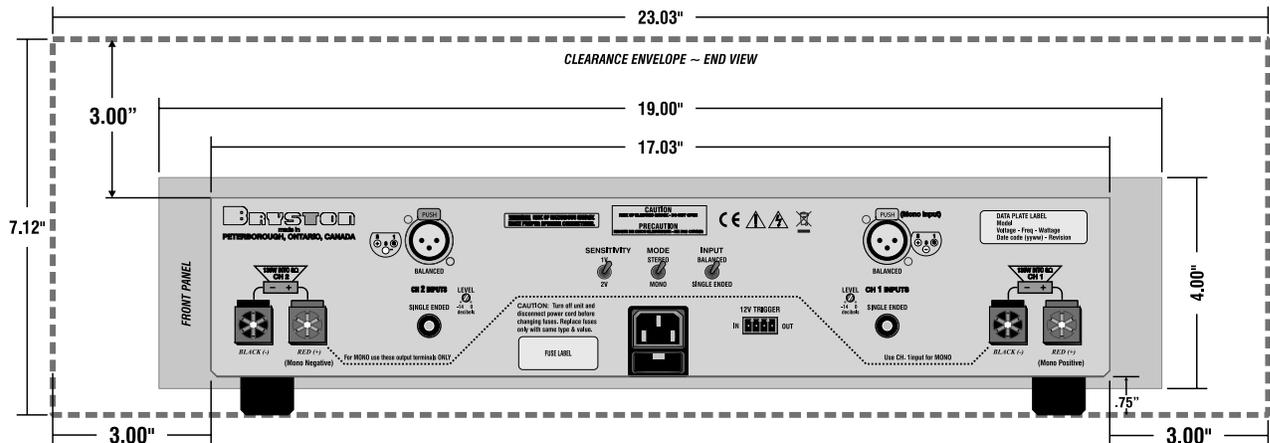
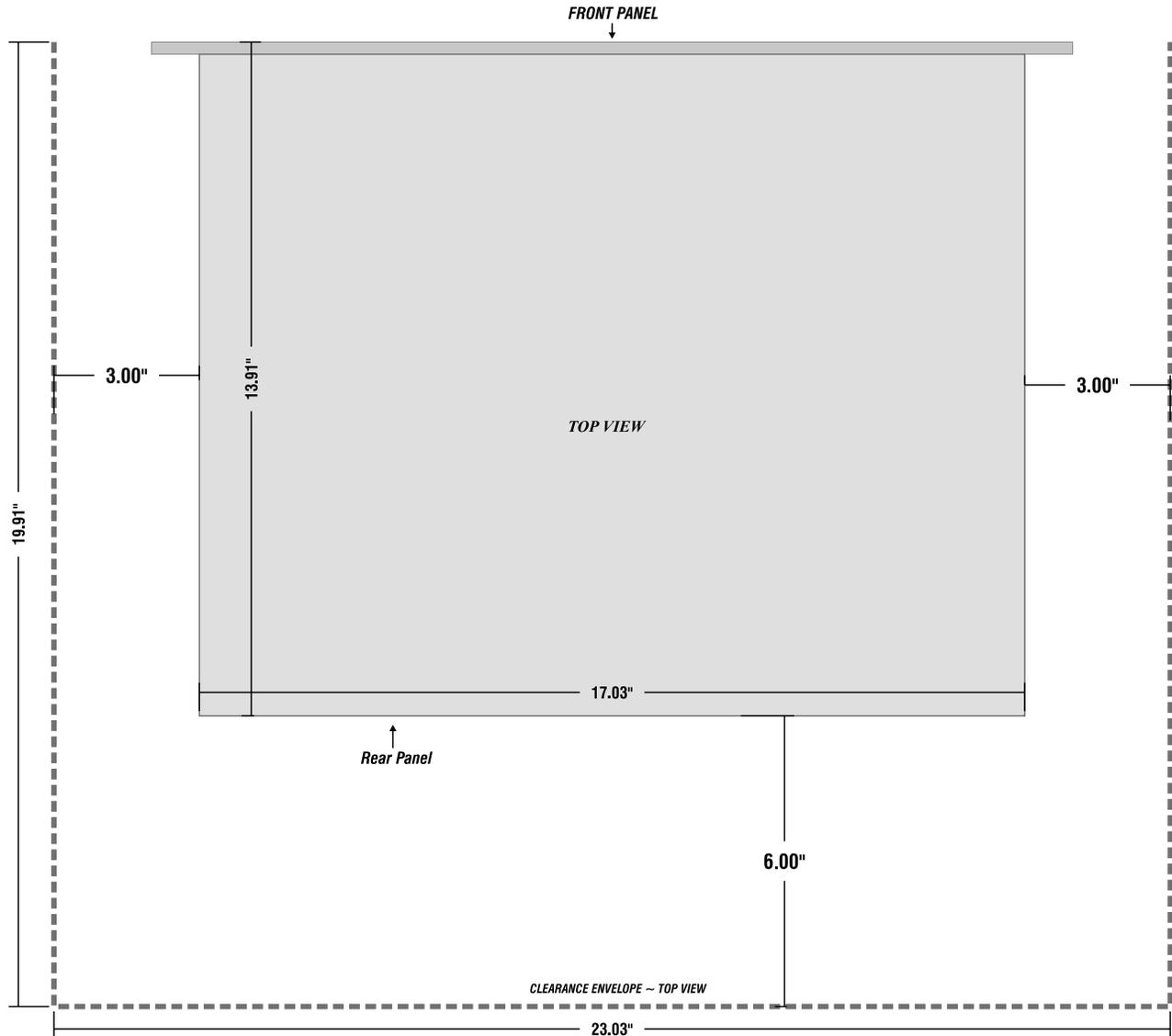
CHANNEL 1 STATUS INDICATOR
 GREEN: On (normal operation)
 RED-steady: Mute
 RED-flashing: Clipping (overload)
 ORANGE: Thermal Shutdown

2.5BSST² SPECIFICATIONS

- POWER OUTPUT:** 135 watts per channel into 8 ohms
 180 Watts into 4 ohms
 270 Watts into 8 ohms, Bridged (single channel)
 165 Watts/channel into 8 Ohms (1 KHz sine wave at onset of clipping)
 220 Watts/channel into 4 Ohms (1 KHz sine wave at onset of clipping)
- INPUT IMPEDANCE:** Single ended (unbalanced): ≈15KΩ
 Double ended (balanced): ≈+15K/-5KΩ
- SENSITIVITY:** 2v setting 2 Volts in = 100 Watts into 8 ohms (gain 23 dB)
 1v setting 1 Volt in = 100 Watts into 8 ohms (gain 29 dB)
- DISTORTION:** THD+noise: < 0.005% 20Hz to 20kHz at 135 watts/channel into 8 ohms,
 THD+N : < 0.005% 20Hz to 20kHz at 270 watts into 8 ohms(Bridged)
 IMD: < 0.005% 60Hz + 7KHz mixed 4:1
- NOISE:** Measured with input shorted - 20Hz to 20kHz.
 -112dB from full rated output (135W) 20Hz to 22kHz bandpass Filter
 >60 volts per microsecond
- SLEW RATE:** <1 Hz to over 100 kHz
- POWER BANDWIDTH:** Over 500 at 20 Hz, ref. 8 ohms
- DAMPING FACTOR:** Front Panel: "Reg" models: 17.2" x 4"
 Body: 16.9" wide X 3.5" high X 15.1" deep
- DIMENSIONS:** "PRO" models: 19" x 3.5" (2 rack units)
 16.9" w X 3.5" h X 15.1" d
- WEIGHT:** approx. 28 lbs (12.7kg.)
- POWER CONSUMPTION:** @1/8th output power relative to onset of clipping, Load = 4 Ohms: 265 Watts for 120 Vac units, 295 Watts for 240 Vac units
 @ IDLE: 30 Watts max.
 @ STANDBY: 130 mW for 120VAC unit, 190 mW for 240VAC unit

2.5Bsst² INSTALLATION

SUGGESTED MINIMAL CLEARANCE ENVELOPE



There are no user serviceable parts inside the 2.5Bsst². Please refer any servicing to qualified personnel.