MISTRAL 900/1500
STEREO POWER AMPLIFIER

www.altoproaudio.com
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English
CAUTION

RISK OF ELECTRIC SHOCK
DO NOT OPEN

TO REDUCE THE RISK OF ELECTRIC SHOCK PLEASE DO NOT REMOVE THE COVER OR THE BACK PANEL OF THIS EQUIPMENT. THERE ARE NO PARTS NEEDED BY USER INSIDE THE EQUIPMENT. FOR SERVICE, PLEASE CONTACT QUALIFIED SERVICE CENTERS.

IMPORTANT SAFETY INSTRUCTION

警告

为了减少电击和火灾的危险，请不要将此设备暴露在潮湿或雨水环境下。

11. 将此设备仅用于带有车架、三脚架或支架的设备。如果使用了设备和车架组合移动时，应小心移动，以避免倾倒。

12. 长期暴露于高噪声环境中可能导致听力损伤。

根据OSHA，暴露于高SPL（声压级）可能对听力造成伤害。应遵守OSHA的噪声暴露规定，以防听力损伤。

<table>
<thead>
<tr>
<th>HOURS X DAY</th>
<th>SPL</th>
<th>EXAMPLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>90</td>
<td>Small gig</td>
</tr>
<tr>
<td>6</td>
<td>92</td>
<td>Train</td>
</tr>
<tr>
<td>4</td>
<td>95</td>
<td>Subway train</td>
</tr>
<tr>
<td>3</td>
<td>97</td>
<td>High level desktop monitors</td>
</tr>
<tr>
<td>2</td>
<td>100</td>
<td>Classic music concert</td>
</tr>
<tr>
<td>1.5</td>
<td>102</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>105</td>
<td></td>
</tr>
<tr>
<td>0.5</td>
<td>110</td>
<td></td>
</tr>
<tr>
<td>0.25 or less</td>
<td>115</td>
<td>Rock concert</td>
</tr>
</tbody>
</table>

根据OSHA，暴露于高SPL在超过这些限度的情况下可能会导致听力损伤。应遵守OSHA的规定以防止高SPL的暴露，以免造成听力损伤。

恒温器应连接到一个有保护接地的交流电源插座。

主电源插座或电源插头应被视为断开装置，并应保持易于操作。

CAUTION

Describes precautions that should be observed to prevent damage to the product.

1. Read this Manual carefully before operation.
2. Keep this Manual in a safe place.
3. Be aware of all warnings reported with this symbol.
4. Keep this Equipment away from water and moisture.
5. Clean it only with dry cloth. Do not use solvent or other chemicals.
6. Do not damp or cover any cooling opening. Install the equipment only in accordance with the Manufacturer's instructions.
7. Power Cords are designed for your safety. Do not remove Ground connections! If the plug does not fit your AC outlet, seek advice from a qualified electrician. Protect the power cord and plug from any physical stress to avoid risk of electric shock. Do not place heavy objects on the power cord. This could cause electric shock or fire.
8. Unplug this equipment when unused for long periods of time or during a storm.
9. Refer all service to qualified service personnel only. Do not perform any servicing other than those instructions contained within the User's Manual.
10. To prevent fire and damage to the product, use only the recommended fuse type as indicated in this manual. Do not short circuit the fuse holder. Before replacing the fuse, make sure that the product is OFF and disconnected from the AC outlet.

According to OSHA, an exposure to high SPL in excess of these limits may result in the loss of heat. To avoid the potential damage of heat, it is recommended that Personnel exposed to equipment capable of generating high SPL use hearing protection while such equipment is under operation.

The apparatus shall be connected to a mains socket outlet with a protective earthing connection.

The mains plug or an appliance coupler is used as the disconnect device, the disconnect device shall remain readily operable.
# IN THIS MANUAL:

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1. INTRODUCTION

Thank you for purchasing the MISTRAL 900/1500. They are the line of high power, low profile, professional Power Amplifiers with advanced features and great reliability. They deliver tremendous power in only two rack spaces, providing high level performance under the most demanding conditions. An automatic speed fan matches cooling capacity with heat requirements. The amplifiers contain two independent channels, with separate AC transformer secondaries, power supplies and protection system. Each channel has independent protective circuitry against open circuit, short circuit, mismatched loads and over temperature and LED indicators for operating/protection, limit, power on and clip. The power outputs employ standard power connectors and all the inputs are electronically balanced.

Enjoy your MISTRAL 900/1500 and make sure to read this Manual carefully before operation.

2. FEATURES

▲ Mountable in a 19" unit (2U), stereo high power amplifier
▲ Fantastic audio quality even with extremely high volume levels
▲ Solid and durable can be mounted into a cabinet
▲ User-controllable clip limiter
▲ 2 × 300 Watt EIAJ on 4 ohms for MISTRAL 900
▲ 2 × 500 Watt EIAJ on 4 ohms for MISTRAL 1500
▲ Stereo (dual-channel) or bridge mono operating modes
▲ Balanced XLR inputs/parallel outputs to ensure noiseless long wiring
▲ Binding post and Neutrik Speak-on connectors for output
▲ Single channel, bridge and bi-amp output wiring possibility
▲ Front panel LED indicators for operating/protection, limit, power on and clip
▲ Accurate gain control
▲ Independent DC and thermal overload protection on each channel automatically protects amplifier and speakers
▲ Over-heat protection for each channel
▲ Manufactured under QS9000, VDA 6.1 certified management system
3. CONTROL ELEMENTS

1. POWER SWITCH
   It switches the amplifier ON and OFF.

2. CLIP LED
   When the signal distortion reaches or surpasses 0.5%, the LED lights up. This means the output level of signal source is too high and it is time to reduce the input level until the LED turns off.

3. OUTPUT LIMITER LED
   When the unit limits the output signal, the LED lights up.

4. OPERATION AND PROTECTION LED
   When there is a preset signal, the yellow LED lights up. When at protection status, the LED turns off.

5. POWER LED
   This LED lights up when the unit is powered on.

6. LEVEL CONTROL (For CH 1 & CH 2)
   Adjust the output signal level to avoid signal distortion.
3. CONTROL ELEMENTS

Rear panel

7. COOLING FAN
This fan secures enough cooling for your amplifier. The fan speed is electronically regulated depending on the temperature of the power devices.

8. IEC SOCKET FOR AC POWER CABLE
Connect the supplied main cord. Do not insert the power cord into the MISTRAL 900/1500 amplifiers and into the AC Outlet until voltage has been correctly set.

9. CIRCUIT BREAKER (Manual reset button)
This is an electronic fuse for protecting the unit from possible damage. When the unit is overloaded or the temperature inside the unit is too high, this push type button will spring out and disconnect the power supply. Push the Breaker down again to restore normal working conditions.

10. OUTPUT CONNECTOR
These connectors have two kinds: Binding post and Neutrik connector. You can choose proper connectors according to practical need. For your safety, please be careful when do connecting work.

11. LIMITER SWITCH
Set the switch at "ON" position, when the output level is above maximum, the clip begins, thus keeping consistent output level for protecting apparatus. If the switch is set at "OFF" position, this clip function doesn't work.

12. BALANCED INPUT CONNECTOR
These connectors connect the input signal of CH 1 and CH 2 separately.

13. BALANCED OUTPUT CONNECTOR
These two output connectors are paralleled inside with input connectors. It enables the unit work under paralleled mode. Please also refer to wiring diagram for paralleled mode.
3. CONTROL ELEMENTS

14 MODE SELECTOR
The MISTRAL 900/1500 power amplifiers present two operating modes:

- **Stereo Mode**
  In this mode, CH 1 and CH 2 operate independently (as a normal stereo amplifier). The CH 1 input signal will be output from the CH 1 output connector, and CH 2 input signal will be output from the CH 2 output connector.

- **Bridge Mode**
  In this mode, CH 1 input signal will be output from the bridge-mono output connector. On the other hand, the output level control of CH 2 should be turned to the minimum.
4. APPLICATION

The MISTRAL 900/1500 amplifiers provide two operating modes: stereo mode and bridge mode, you can decide each specific operating mode according to your actual application circumstance. Please see following diagram for connecting the power amplifier into your audio system.

- Stereo Mode

In this mode, CH 1 and CH 2 operate independently (as a conventional stereo amplifier). The CH 1 input signal will be output from the CH 1 output connectors, and the CH 2 input signal will be output from the CH 2 output connectors.
4. APPLICATION

- Stereo Mode

Input Connector

Balanced

Stereo Mode
Release this button
4. APPLICATION

- Stereo Mode
You can also operate the paralleled mode via outside wiring, so the signal input from CH 1 or CH 2 will be output from both CH 1 and CH 2 simultaneously. The volume of CH 1 or CH 2 can be controlled separately.

--- Input Connector ---

Balanced

- Stereo Mode
  Release this button

--- Diagram ---
4. APPLICATION

- Stereo Mode

--- Input Connector ---

Balanced

- Stereo Mode
  Release this button
4. APPLICATION

- Stereo Mode

.............. Input Connector ..............

Balanced

Stereo Mode
Release this button
4. APPLICATION

- Stereo Mode

Input Connector

\[\text{Balanced}\]

\[\text{INPUT}\]

\[\text{CH 1} \quad + \quad + \quad \text{CH 2} \quad +\]

\[\text{CH 1} \quad + \quad + \quad \text{CH 2} \quad +\]

\[\text{TIP PIN 2} \quad \text{RING/PIN 3} \quad \text{SLEEVE PIN 1}\]

\[\text{TIP PIN 2} \quad \text{RING/PIN 3} \quad \text{SLEEVE PIN 1}\]

Stereo Mode
Release this button
4. APPLICATION

- Bridge Mode
In this mode, the CH 1 input signal will be output from the bridge output connector. On the other hand, the output level control of CH 2 should be turned down to smallest (turn the volume control at counterclockwise). Only the volume control of CH 1 is used to control the volume of the whole system.

------------- Input Connector -------------

Balanced
4. APPLICATION

- Bridge Mode

-------- Input Connector --------

Balanced

Bridge Mode
Press this button
## 5. TECHNICAL SPECIFICATIONS

<table>
<thead>
<tr>
<th>TYPE</th>
<th>MISTRAL 900</th>
<th>MISTRAL 1500</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stereo Mode - 6 ohms EIAJ</td>
<td>250W x 2</td>
<td>540W x 2</td>
</tr>
<tr>
<td>Stereo Mode - 4 ohms RMS</td>
<td>170W x 2</td>
<td>330W x 2</td>
</tr>
<tr>
<td>Stereo Mode - 8 ohms EIAJ</td>
<td>170W x 2</td>
<td>330W x 2</td>
</tr>
<tr>
<td>Stereo Mode - 11 ohms RMS</td>
<td>195W x 2</td>
<td>250W x 2</td>
</tr>
<tr>
<td>Bridge Mode - 8 ohms EIAJ</td>
<td>500W x 1</td>
<td>1000W x 1</td>
</tr>
<tr>
<td>Bridge Mode - 8 ohms RMS</td>
<td>340W x 1</td>
<td>800W x 1</td>
</tr>
<tr>
<td>Distortion (SMFTE-M)</td>
<td>&lt;0.05%</td>
<td></td>
</tr>
<tr>
<td>Frequency Response</td>
<td>20 Hz - 20 kHz ± 1 dB, ±3 dB points: 10 Hz - 60 kHz</td>
<td></td>
</tr>
<tr>
<td>Damping Factor, 1 kHz and below</td>
<td>&gt;30C at 8 ohms</td>
<td></td>
</tr>
<tr>
<td>Signal to Noise, 20 Hz - 20 kHz</td>
<td>102 dB</td>
<td></td>
</tr>
<tr>
<td>Voltage Gain</td>
<td>40 x (32 dB)</td>
<td></td>
</tr>
<tr>
<td>Input Sensitivity (3 ohms)</td>
<td>1 Vrms</td>
<td></td>
</tr>
<tr>
<td>Input Clipping</td>
<td>10 Vrms (±2 dB)</td>
<td></td>
</tr>
<tr>
<td>Input Impedance</td>
<td>10K ohms unbalanced, 20K ohms balanced: 5.5 (36 dB)</td>
<td></td>
</tr>
<tr>
<td>Controls</td>
<td>FRONT AIR SWITCH, CH1 &amp; CH2 GAIN KNOBS, REAR: LIMITER, BRIDGE SELECTOR</td>
<td></td>
</tr>
<tr>
<td>Indicators (1 per channel)</td>
<td>Power-On: Blue LED, Operation/Protection: Dual Color (Yellow LED), Limit: Yellow LED, Clip: Red LED</td>
<td></td>
</tr>
<tr>
<td>Connectors, each channel</td>
<td>Input: Active balanced XLR, Parallel Output: XLR, Output: NFPRF K Spakon and Binding posts</td>
<td></td>
</tr>
<tr>
<td>Cooling</td>
<td>Continuously variable-speed fan, rear-to-front air flow</td>
<td></td>
</tr>
<tr>
<td>Load Protection</td>
<td>On/off muting, DC-fault load grounding relay, internal fault fuses</td>
<td></td>
</tr>
<tr>
<td>Power Requirements</td>
<td>200-240 V (100-120 V ac) 50/60 Hz</td>
<td></td>
</tr>
<tr>
<td>Dimensions</td>
<td>19&quot; (48.3 cm) rack mounting, 3.5&quot; (8.8 cm) tall (12 rack spaces), 15.9&quot; (40 cm) deep (rack mounting to rear support ears)</td>
<td></td>
</tr>
<tr>
<td>Net Weight</td>
<td>11 Kg</td>
<td>13 Kg</td>
</tr>
</tbody>
</table>
6. WARRANTY

1. WARRANTY REGISTRATION CARD
   To obtain Warranty Service, the buyer should first fill out and return the enclosed Warranty Registration Card within 10 days of the Purchase Date. All the information presented in this Warranty Registration Card gives the manufacturer a better understanding of the sales status, so as to provide a more effective and efficient after-sales warranty service. Please fill out all the information carefully and genuinely, miswriting or absence of this card will void your warranty service.

2. RETURN NOTICE
   2.1 In case of return for any warranty service, please make sure that the product is well packed in its original shipping carton, and it can protect your unit from any other extra damage.
   2.2 Please provide a copy of your sales receipt or other proof of purchase with the returned machine, and give detail information about your return address and contact telephone number.
   2.3 A brief description of the defect will be appreciated.
   2.4 Please prepay all the costs involved in the return shipping, handling and insurance.

3. TERMS AND CONDITIONS
   3.1 LTO warrants that this product will be free from any defects in materials and/or workmanship for a period of 1 year from the purchase date if you have completed the Warranty Registration Card in time.
   3.2 The warranty service is only available to the original consumer, who purchased this product directly from the retail dealer, and it can not be transferred.
   3.3 During the warranty service, LTO may repair or replace this product at its own option at no charge to you for parts or for labor in accordance with the right side of this limited warranty.
   3.4 This warranty does not apply to the damages to this product that occurred as the following conditions:
      • Instead of operating in accordance with the user’s manual thoroughly, any abuse or misuse of this product.
      • Normal tear and wear.
      • The product has been altered or modified in any way.
      • Damage which may have been caused either directly or indirectly by another product / force / etc.
      • Abnormal service or repairing by anyone other than the qualified personnel or technician.
   And in such cases, all the expenses will be charged to the buyer.
   3.5 In no event shall LTO be liable for any incidental or consequential damages. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above exclusion or limitation may not apply to you.
   3.6 This warranty gives you the specific rights, and these rights are compatible with the state laws, you may also have other statutory rights that may vary from state to state.