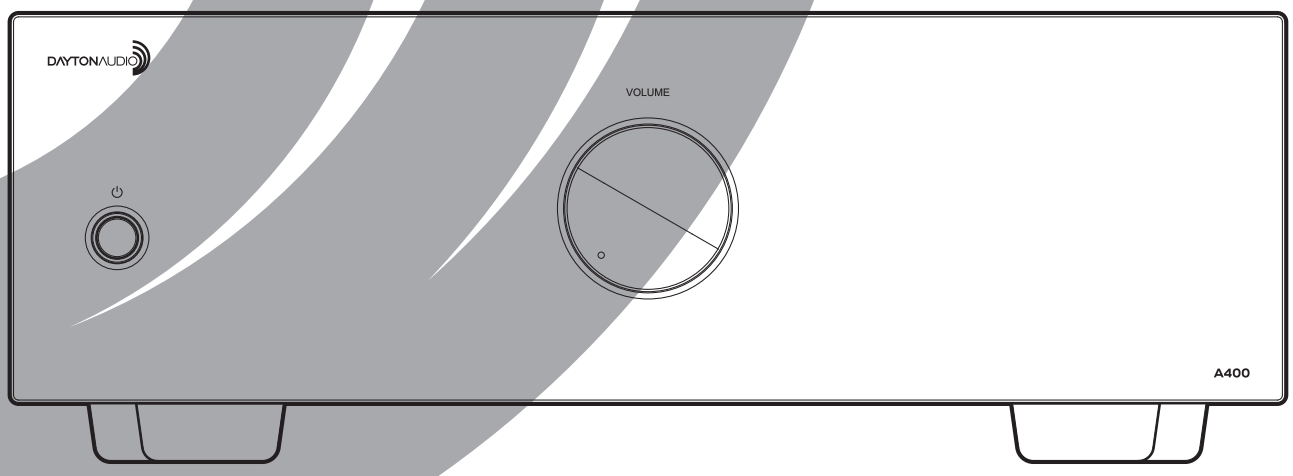
# A400

Product Manual



# Contents

# Welcome

Thank you for purchasing the Dayton Audio A400 Amplifier. This amplifier has been designed to provide nothing but pure Class A/B output power for use with your favorite speakers. Capable of stereo and bridged configuration the A400 can easily integrate into any setup with built-in Auto-ON and external 12V trigger modes. We hope you enjoy listening to your new A400 as much as we have enjoyed designing it.

# Features

- 160 watts per channel into 8Ω, 20-20kHz at 0.1% THD with 2 channels driven
- 300 watts per channel into 4Ω, 20-20kHz at 0.1% THD with 2 channels driven
- High-current Class A/B amplifier design
- Balanced (XLR) and unbalanced (RCA) inputs for each channel with dedicated thru outputs
- Full range frequency response 20-20kHz
- Large front volume knob for easy level control
- Auto-ON and 12V remote trigger modes or complete control and integration
- Front panel indicator can be turned off for use in low light environments
- Rack mount installation kit included
- Rear-panel dual voltage switch (115 and 230 volts)

# What's in the Box

- A400 Amplifier
- Rack Mounting Kit
- Power Cable
- This Manual

# Installing the Amplifier

## Unpacking

Please unpack your amplifier and carefully examine it for any potential damage that may have happened during shipping. In case you do discover any damage, it is important to promptly inform the shipping company.

While Dayton Audio is available and willing to assist as necessary, only the recipient can initiate a claim for any shipping related damage, If the product shows visible signs of damage upon arrival, be sure to retain the shipping carton for the shipper's inspection.

We strongly advise you to keep all the packing materials, as they may be useful in the event you need to transport the unit in the future. Never attempt to ship the unit without the original factory carton and the accompanying packing materials.

## Additional Materials

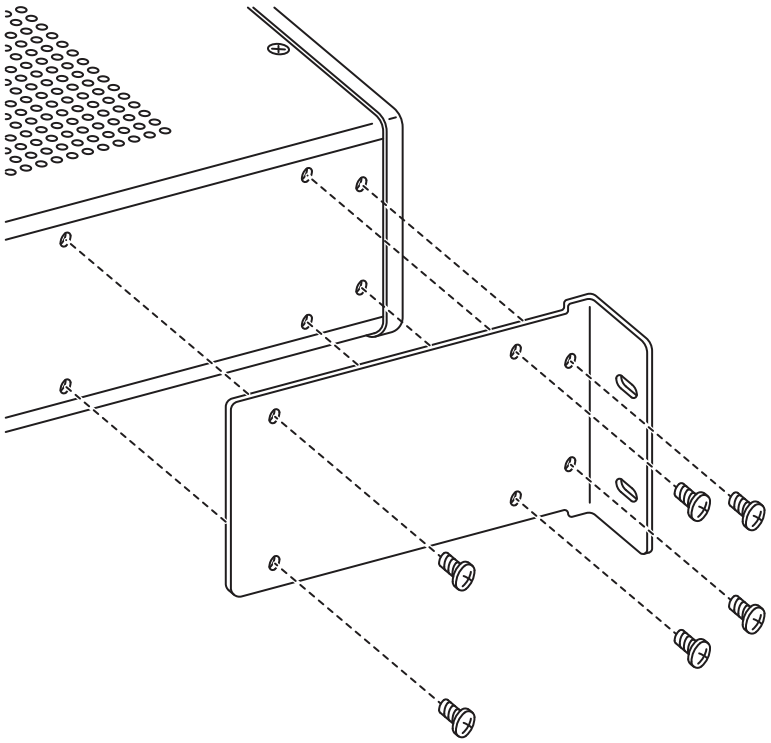
For installation, the following materials might be required and are not supplied in the package

- Input cables
- Output cables
- Phillips screwdriver
- Rack or stable surface for mounting the amplifier

## Installing the Amplifier

**CAUTION:** Disconnect the A400 from any power source before beginning installation.

The A400 can be installed in any standard 19" rack enclosure or on a stable surface or shelf. For rack installation please use the included rack mounting kit.

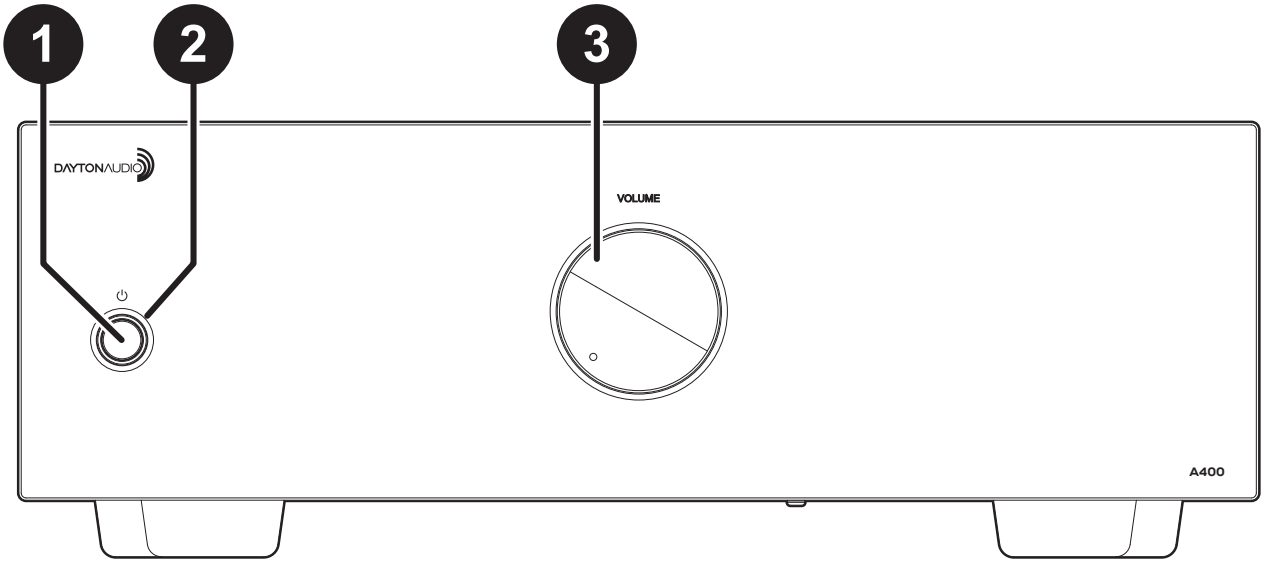


## Proper Cooling

Anytime the A400 is in use, there should be a minimum of 2" of clearance on the top and sides of the amplifier. When installed in an equipment rack leave 2 open rackspaces above the amplifier to increase airflow in and around the amplifier. (Do not close the open rackspace with panels as this will reduce airflow.)

# Controls and Functions

## Front Panel



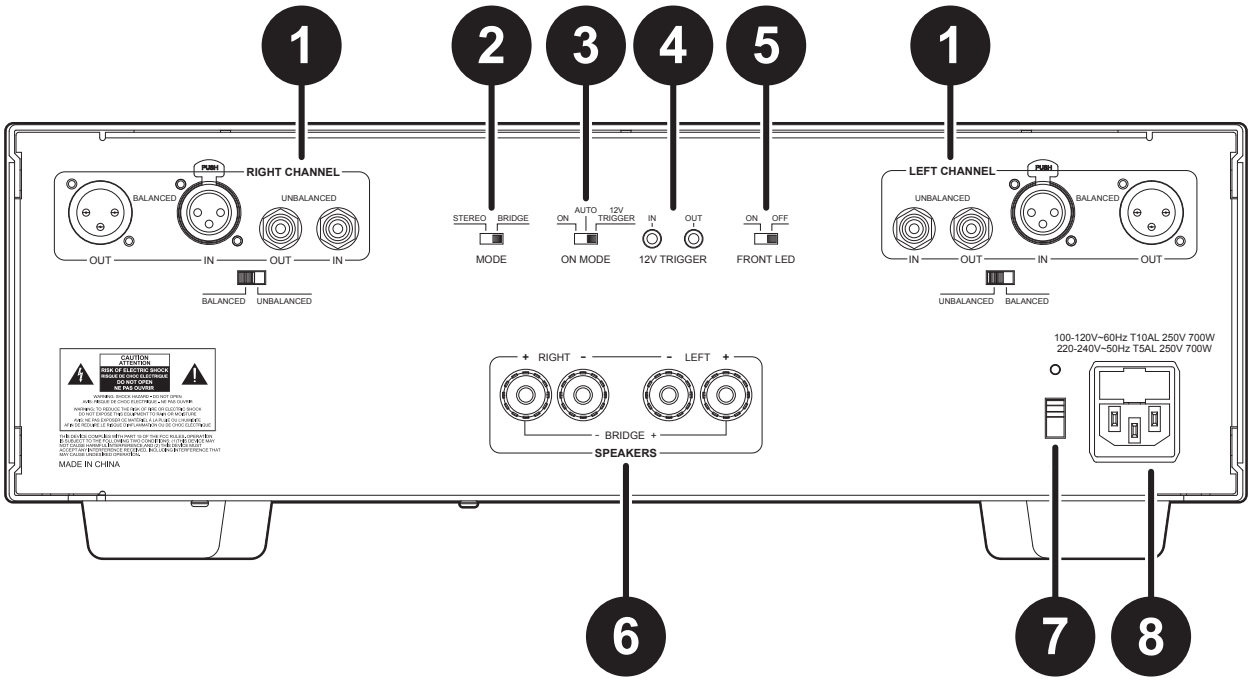

1. **POWER SWITCH**
   Turns the device on and off.

2. **POWER/STANDBY/PROTECTION INDICATOR**
   The ring surrounding the power switch will illuminate blue when the amplifier is on. It will also illuminate red when in standby or to indicate amplifier clipping.

3. **VOLUME CONTROL**
   Turn this to control the output to your speakers. This volume knob does not control the thru outputs.

# Controls and Functions

## Rear Panel




1. **LINE INPUT/ OUTPUT SECTION**

   Connect any audio sources here (pg. 7)

2. **STEREO/BRIDGE MODE SWITCH (pg. 9)**

3. **ON MODE SELECTION (pg. 10)**

4. **12V TRIGGER CONNECTIONS (pg. 10)**

5. **FRONT LED ON/OFF SWITCH**
   The power indicator light on the front can be turned off when the A400 is installed in low light environments like near your TV. This switch will disable all lights on the front of the amplifier including standby and protection indicators

6. **SPEAKER OUTPUTS**
   Using insulated two conductor wire to connect to speakers. The polarity, positive (+), and negative (-) for all speaker and amplifier connections must be consistent so both the left and right speakers are in phase.

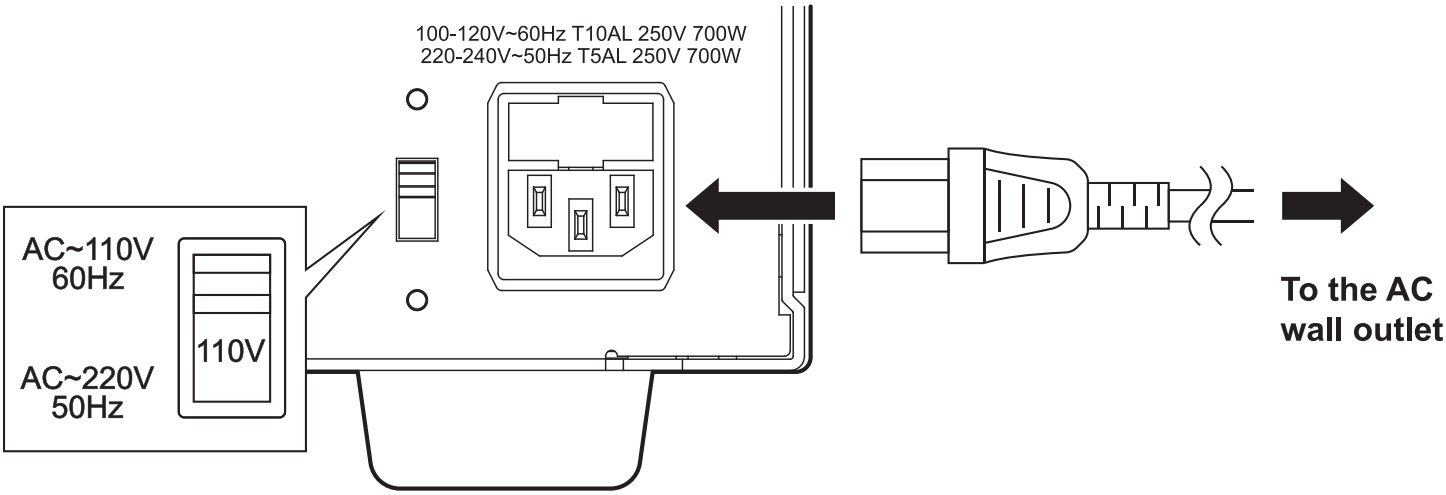
7. **AC VOLTAGE SELECTOR SWITCH**
   The unit is set at the factory for 110V operation. For 220V operation, move the voltage selector switch to the 220V position. When operating at 220V, the internal fuse located in the IEC socket should also be changed. In most 220V applications, a separate power cord will be required and is not included.

8. **AC POWER INPUT**

# Connections

## Connecting to Mains Power

Before connecting the main power cable, make sure that the voltage selector switch is set according to your local voltage. Incorrect setting of the voltage selector switch could cause damage to the amplifier and has a potential risk of fire.



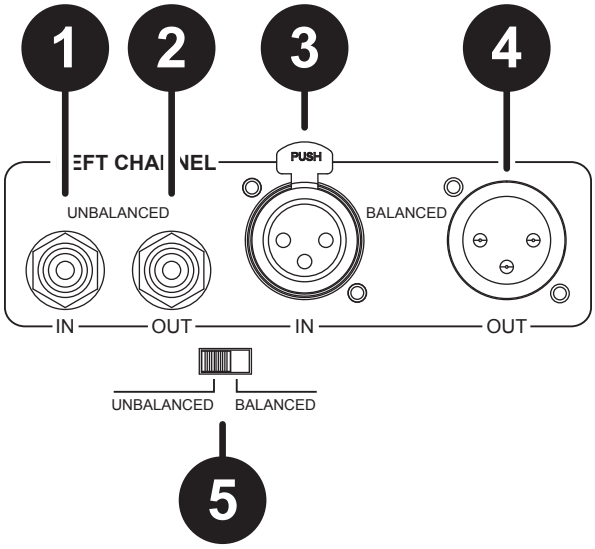

## Power Up Procedure

Follow these steps when powering on the amplifier for the first time.

1. Ensure all connections except for the power cord are disconnected.
2. Press the amplifier's front power button. If the front LED ON/OFF switch is set to ON and proper mains power is provided the amplifier will turn on and the front power indicator will illuminate blue.
3. Turn off the amplifier, turn the volume knob all the way down and make all necessary connections as described **Connections Sources** and **Connecting Outputs (pg. 6-8)**
4. Once all connections have been made, turn on the amplifier.
5. Set all connected audio sources to their optimal level and begin playing audio to the amplifier.
6. Turn the amplifier's volume control up until the desired loudness is achieved.

**NOTE:** Always turn the amplifier on last and off first to avoid accidental output to any connected speakers; potentially damaging the speakers.

# Connecting Sources




1. Unbalanced RCA Input
2. Unbalanced RCA Output
3. Balanced XLR Input
4. Balanced XLR Output
5. Balanced/Unbalanced Selection Switch

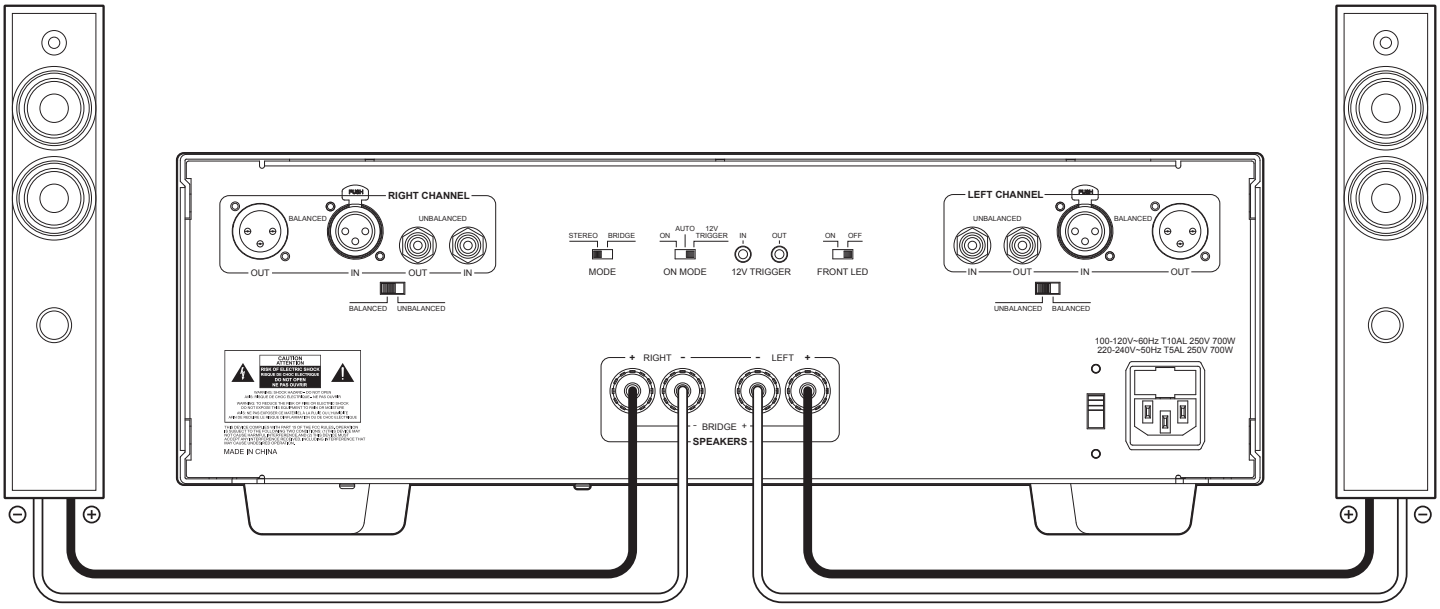
Each input section on the amplifier can accept balanced (XLR) or unbalanced (RCA) line level signals. Using high quality cables will ensure the best possible transmission from your connected devices.

Selection between balanced and unbalanced inputs can be performed on a per channel basis to allow for different connections to different channels.

The balanced and unbalanced outputs will pass audio from their respective inputs. They are not affected by the input selection switch or the front volume control.

# Connecting Outputs

## Stereo Operation

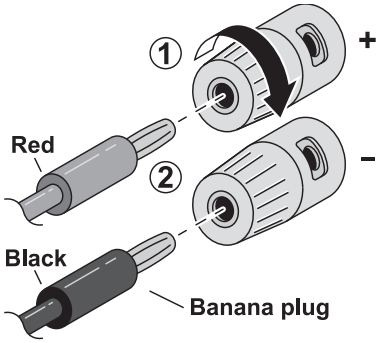



In stereo operation, the A400 can power speakers with a minimum impedance of 4Ω. Using high quality two conductor speaker wire connect your speakers to the binding posts on the rear of the unit.

Connect the A400's left speaker terminals marked "L-" and "L+" to the corresponding "-" and "+" terminals on your left speaker. Repeat the same process for the right channel.

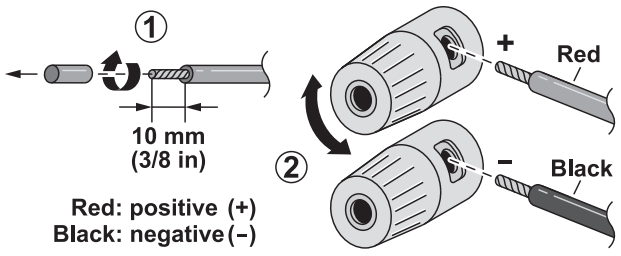
## Connecting Banana Plug Cables

1. Tighten the knob.
2. Insert the banana plug terminated cable into the end of the corresponding terminal.



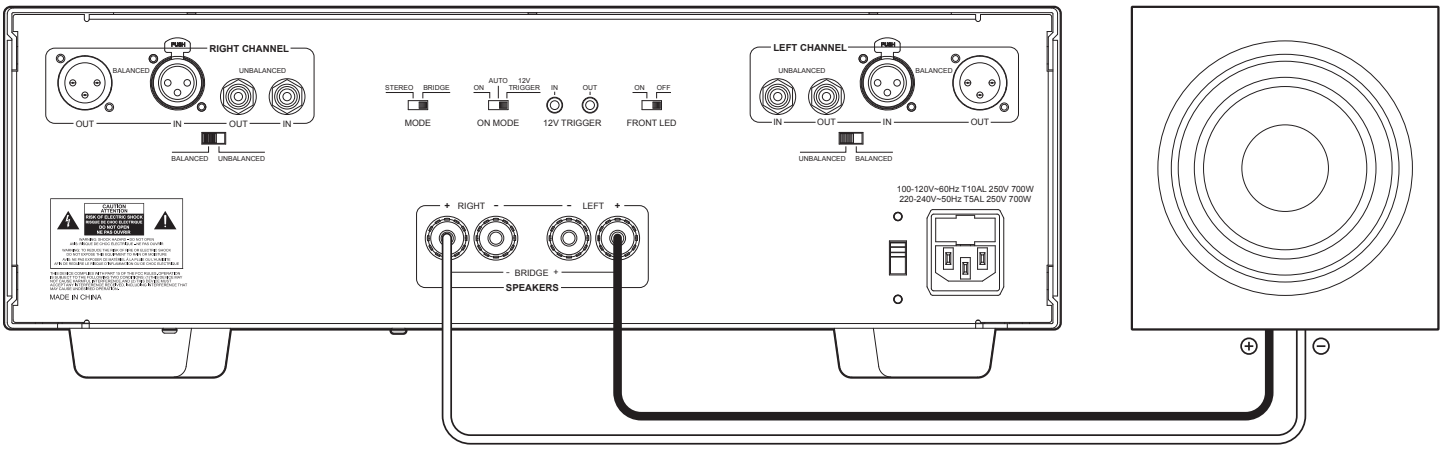

## Connecting Speaker Wires

1. Strip about 3/8" of insulation from the end of each speaker wire and twist the bare wires of the cable together.
2. Unscrew the knob before inserting the bare wire into the hole in the side of each terminal before tightening the knob to secure the wire.



# Connecting Outputs

## Bridged Operation




In bridged mode, the A400 can power a speaker with a minimum impedance of 8Ω. Using high quality two conductor speaker wire, connect a speaker to the bridged output binding posts on the rear of the unit. Observe the proper polarity of the bridged outputs.

The bridged output will only bass audio from the left channel input. The A400 is not designed to sum the two input channels to mono.

# Rear Panel Controls

The A400 has three different modes for turning the amplifier on and off. **AUTO ON** will automatically detect audio on the inputs and place the amplifier is standby when not in use, **12V TRIGGER** which will turn the amplifier on and off when an external device sends a dedicated control signal to the amplifier, and **ON** which is the normal operation.

## Auto On

For ultimate control in any installation, the A400 has an auto sensing function that can turn off the amplifier when not in use and turn it back on when audio is detected. The A400's standby mode is indicated by a red power indicator. To use auto sensing, set the ON MODE switch to AUTO; for normal operation, set it to ON.

The A400 will enter standby after fifteen minutes of silence and will turn back on when music is played again. Once audio is sensed, the power indicator light will change back to blue to indicate that the amplifier is on.

## Remote Trigger

The **12V TRIGGER** mode functions similar to the **AUTO ON** mode except that on and standby are controlled by a 12V signal received on the **12V IN** connection on the rear of the amplifier. When a 12V signal is present, the A400 will be active and enter standby when the signal is disabled.

All connections should be made with 3.5mm unbalanced cables.

Wiring: 3.5mm mono
Plug: Tip positive

The **12V OUT** connection is not controlled by the A400. It only serves to duplicate the signal received on the **12V IN** connection.

# System Protection

The A400 is equipped with triple failsafe protection to ensure self-protection as well as the protection of other connected devices.

**Self-locking power stage:** if a short on the AC side of the power supply is detected, the DC side of the power supply will meet the bias voltage of the Collector/Emitter junction, disallowing signal amplification to occur.

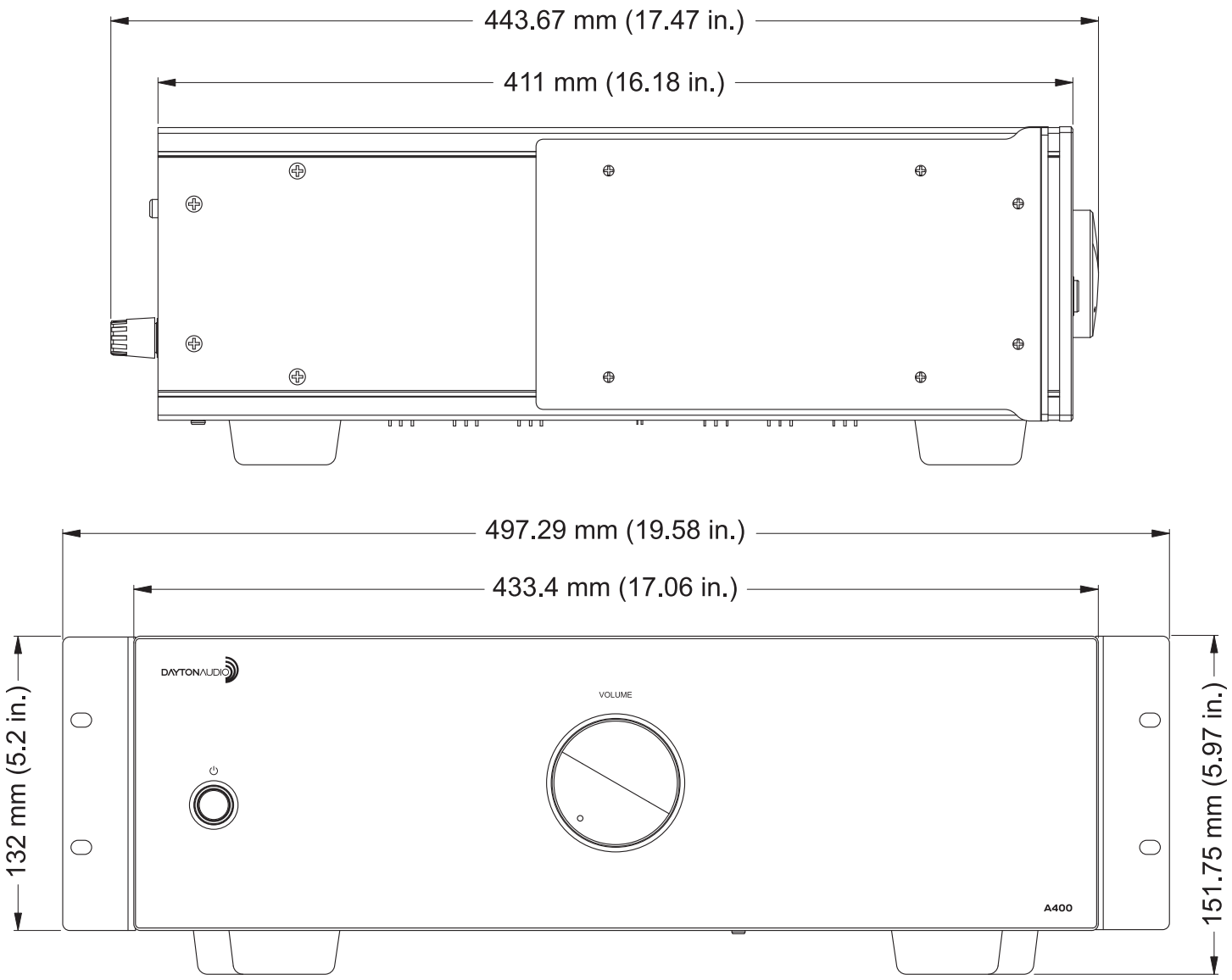
**Temperature monitoring:** Thermistor heat monitoring constantly measures the temperature of the heat sinks. When this protection is tripped, the thermistor will allow current to flow, opening the protection circuit.

**Short circuit protection:** when zero resistance across the output terminals is detected, similar to the self-locking feature, the DC power supply will meet the bias voltage of the Collector/Emitter junction, disallowing signal amplification to occur.

# Troubleshooting

| Problem | Cause | Solution |
|---|---|---|
| The Unit fails to turn on | The power cable is not connected properly | Check to make sure both ends of the power cable are connected properly. |
| | Incorrect voltage selection switch setting | Verify that the voltage selection switch is set according the region and power standard in your country. |
| | Protection circuit has been activated | Turn the amplifier off and check that your speaker wires are not shorting out. If this problem persists please contact Dayton Audio for customer support. |
| | The internal fuse has been tripped | Replace the internal fuse with the proper rating for your region. (p.5) |
| The unit turns off suddenly | There is a short in the connected speaker wire. | Examine the speaker wire for any damage. Do not use any cable that has exposed wire. |
| | Speaker malfunctioning | Disconnect the speakers one at a time to see if the issue is caused by the speakers or the amplifier. If the problem persists with all speakers please contact Dayton Audio customer support. |
| No sound | The amplifier is in standby mode | Verify the proper position of the On Mode Selection Switch. If set to 12V trigger, there must be a signal present on the 12V Trigger Input to activate the amplifier (p.10) |
| | Correct input has not been selected | Verify that the Balanced/Unbalanced Selection Switch is set to the proper input. |
| | Incorrect cable connections | Double check that the device that you are trying to listen to is connected to the correct input. |
| The sound is distorted | The output load is wired incorrectly | Stereo and bridged operation require different wiring configurations for the speaker outputs. Verify that the proper settings are enabled for the desired configuration. (p.8-9) |
| | Impedance of connected speakers is too low | The Amplifier is capable of powering speakers as low as 4Ω in stereo mode and 8Ω in bridged mode. Verify that any connected speakers have impedances higher than this. (p.8-9) |
| | The input signal is too high and is clipping the input of the amplifier | Turn down the level of the source signal until the distortion is no longer present. |
| Low Volume | Volume on the playback device is turned down | Verify that any volume control the connected preamplifier, mixer, or playback device is turned up. |
| The Sound output lacks Bass | The speakers polarity is reversed | Double check the speaker connections, ensuring that the + and - terminals are connected properly on both speakers. (p.9) |

# Dimensions


443.67 mm (17.47 in.)
411 mm (16.18 in.)
497.29 mm (19.58 in.)
433.4 mm (17.06 in.)
132 mm (5.2 in.)
151.75 mm (5.97 in.)
DAYTONAUDIO
VOLUME
A400

# Specifications

**Output Power**

- 8Ω / FTC 20 Hz- 20 kHz / 0.1% THD ..... 158W
- 8Ω / EIA 1 kHz / 0.1%THD ..... 165W
- 4Ω / FTC 20 Hz- 20 kHz / 0.1% THD ..... 300W
- 4Ω / EIA 1 kHz / 0.1%THD ..... 324W
- 8Ω / Bridged 20Hz-20kHz/ 0.01% THD ..... 700W

**Frequency Response** ..... 20 Hz - 20 kHz

**Signal-to-Noise Ratio** ..... 100 dB (A-Weighted)

**Total Gain** ..... 38 dB

**Input Impedance/Sensitivity**

- Unbalanced ..... 470 mV
- Balanced ..... 475 mV

**Channel Separation** ..... -54 dB

**Minimum Speaker Impedance** ..... 4Ω

**Connectors (each channel)**

- Input ..... RCA, XLR
- Output ..... Threaded lug/banana jack

**General**

**Power Requirement**

- USA ..... 110V, 60 Hz
- EC ..... 220V, 50 Hz

**Internal Fuse Rating** ..... 100-120vAC/60Hz, T10A 250V
220-240vAC/50Hz, T5AL 250V

**Power Consumption** ..... 700W

**Idle Power Consumption** ..... 27W

**Standby Power Consumption** ..... 7.0W

**Amplification** ..... Class A/B

**Auto On Voltage** ..... 7 mV

**Dimensions (H X W x D)** ..... 5.97" x 17" x 17.47"

**Weight** ..... 45.2 lbs. (20.52 kg)

All specifications are accurate at the time of printing.
Dayton Audio reserves the right to make improvements without notice.

**5-Year Limited Warranty**
See daytonaudio.com for details

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