

AQUATIC AV[®]

products with a watertight reputation

AQ-AD300.2-MICRO 2 CHANNEL WATERPROOF AMPLIFIER for Harley-Davidson[®] Motorcycles

USER / INSTALLATION MANUAL



**PLEASE READ THIS INSTRUCTION MANUAL BEFORE
INSTALLATION AND OPERATION**

1 Getting Started	3
1.1 Important Information.....	3
1.2 Contents.....	3
2 Installation	4
2.1 Installation Precautions.....	4
2.1.1 Positioning the Amplifier.....	4
2.1.2 Cutting Cables.....	4
2.2 Connecting the Amplifier.....	4
2.2.1 Connecting Inputs with Low-Level (RCA) Cables.....	4
2.2.2 Connecting Inputs with High-Level (Speaker) Cables.....	4
2.2.3 Connecting Speakers.....	5
2.2.4 Connecting Speaker/Subwoofer in Bridged Mode.....	5
2.2.5 Connecting the Remote (Ignition) Wire.....	6
2.2.6 Connecting the Battery.....	6
2.3 Testing the System.....	6
3 Setting Amplifier Controls	6
3.1 Setting the Gain Control.....	6
3.2 Cross-Over Mode Switch (Filter).....	6
3.3 Cross-Over Frequency Control (Freq).....	7
3.3.1 High Pass Filter Mode.....	7
3.3.2 Low Pass Filter Mode.....	7
3.3.3 Full Range Mode.....	7
3.4 Boost.....	7
4 Troubleshooting	8
5 Specifications & Dimensions	9
5.1 Specifications.....	9
5.2 Dimensions.....	9
6 Warranty Information	9

Congratulations on your purchase of an Aquatic AV AQ-AD300.2-MICRO amplifier. It has been designed, engineered and manufactured to bring you the highest level of performance and quality, and will afford you years of listening pleasure.

1.1 Important Information

Check your battery and electrical system

Low battery conditions and/or poor electrical systems need to be diagnosed and corrected prior to installation of your amplifier. Old batteries may be good enough to start your engine, but may NOT be adequate to power a high output audio system. Running your amplifier in a low-voltage situation may cause premature distortion, fuse blowout, and system shutdown.

Working safely with your battery

Disconnect the negative battery terminal before doing any electrical work. Always disconnect the negative (-) battery terminal first, followed by the positive (+) terminal. When reconnecting terminals, connect the positive (+) terminal first followed by the negative (-) terminal. This can minimize the chance of sparks and voltage spikes, and is a good general practice when dealing with any DC electrical system.

Ensure proper power and ground connections

Never connect or disconnect the control cables while the amplifier(s) is powered on.

Always disconnect your battery before working with your electrical system, and keep it disconnected until you are ready to test the audio system.

Cover all exposed wires to avoid short circuits.

Make your power and ground connections properly, failure to do so can cause damage to the amplifier.

Grounding

Inadequate grounds are number one cause of problem installations.

The ground wire and power wire are equally important; if either one of them become damaged it could result in damage to the amplifier.

1.2 Contents

When first unpacking your new amplifier please check first that the package contains all of the items below. If something is missing, contact the store where you purchased the product.

- AQ-AD300.2-MICRO Amplifier
- User/Installation Manual
- RCA male-to-male Adaptor (x2)
- Wiring Harness
- High-Level Input Adaptor

2.1 Installation Precautions

2.1.1 Positioning the Amplifier

The AQ-AD300.2-MICRO amplifier dissipates high levels of heat. As a result we suggest keeping the amplifier in a well-ventilated area. We don't suggest keeping the amplifier in enclosed areas.

⚠ Do not install the amplifier on top of, or above, the stereo installed in your Harley-Davidson Motorcycle faring as this could result in over heating of either the amplifier, the stereo, or both.

2.1.2 Cutting Cables

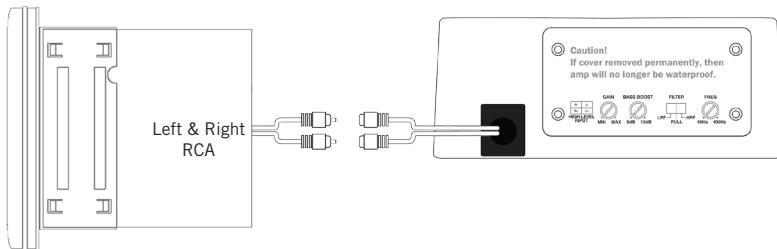
Always route wires and cables safely, avoid sharp edges and burns along the way. Always check the length of a wire before cutting.

2.2 Connecting the Amplifier

Use only cables and the supplied accessories discussed in this manual. Failure do so may cause damage to the amplifier. The cable for speakers can ONLY be used for connecting the amplifier to the speakers. The cable for power can ONLY be used for connecting the amplifier to the battery.

2.2.1 Connecting Inputs with Low-Level (RCA) Cables (recommended)

1. Connect your source unit's RCA outputs (left and right) to the amplifier's left and right RCA input cables.



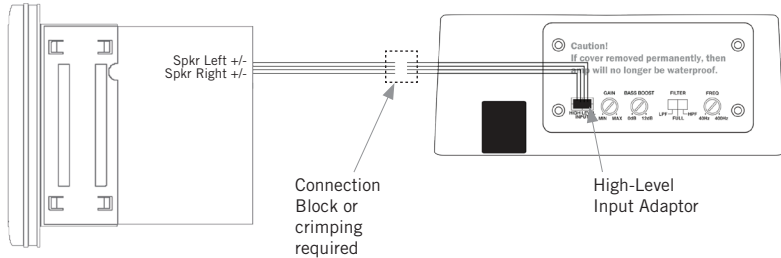
2.2.2 Connecting Inputs with High-Level (Speaker) Cables

⚠ Using High-Level signal inputs requires the removal of the control panel cover and will significantly reduce the amplifiers ingress performance for both water and dust. This will also void warranty cover.

We recommend using Low-Level (RCA) input connections, as detailed in 3.2.1 above, however, should RCA outputs not be available from your stereo the AQ-AD300.2-MICRO allows for signal input using your stereo's speaker output cables.

1. Open the control panel cover by removing the four screws securing the cover and connect the supplied High-Level Input Adaptor.

2. Connect your stereo's speaker output cables (front left +/- and front right +/-) to the corresponding High-Level Input Adaptor cables (FL+, FL-, FR+ and FR-) using either a connection block or by securely crimping the cables together.



2.2.3 Connecting Speakers

1. Verify the impedance of the speakers is 2 Ohms or above.
2. Install the desired speakers if not already installed.
3. Route and connect the speaker wires from each speaker of your system to the corresponding speaker output terminal on the amplifiers wiring harness. Failure to connect properly may damage your speakers.

2.2.4 Connecting Speakers in Bridged Mode

Bridged mode allows for the two output channels to be combined into a single channel with the maximum power output of 300W RMS. This is typically used to drive a subwoofer but can be used to drive a single full-range speaker (in mono).

1. Verify the impedance of the speaker/subwoofer is 4 Ohms or above.
2. Install the desired speaker/subwoofer if not already installed.
3. Route and connect the Left(+) and Right(-) cables from the amplifier wiring harness to the input terminals on the speaker/subwoofer as follows:

Amplifier Left(+) output (grey cable): connect to Speaker/Subwoofer (+) input terminal

Amplifier Right(-) output (white/black): connect to Speaker/Subwoofer (-) input terminal

4. The Left(-) and Right(+) cables (grey/black and white respectively) from the amplifier should then be individually covered up or sealed off to avoid shorting the circuit and damaging the amplifier.

Failure to connect properly may damage your speaker/subwoofer.

2.2.5 Connecting the Remote (Ignition) Wire

1. Connect the blue Remote cable from the amplifier wiring harness to the blue Remote or Ignition terminal on the stereo. Alternatively, you can also connect the blue remote wire to the vehicles ignition switch.

2.2.6 Connecting the Battery

1. Route and connect the power wire from the positive (+) battery terminal to the main amplifier terminal.
2. Route and connect the ground wire from chassis ground to the amplifier terminal.
3. Verify power cables and audio cables are not making contact as they can cause interference.

2.3 Testing the System

You have completed the connection, now it's time to check that the power supply is correct with everything working as one system.

1. Install the fuse into the in-line fuse holder on the power side.
2. Verify the amplifier powers up and the speakers function properly. If they do not, proceed directly to Troubleshooting section.

Setting Amplifier Controls

3.1 Setting the Gain Level

1. Begin by setting the Gain to the minimum value (counter-clockwise).
2. Set gain to 1/3 of the way (approx. 10pm position).
3. Turn on the stereo and verify the amplifier is also turned on. The LED on the amplifier will illuminate green.
4. Set all tones (bass, treble) and equalization controls (balance, fade) on the source unit to "flat" or "0," and turn off any "loud" or "loudness" setting.
5. Slowly increase the gain control until you hear a slight distortion of the audio playback. This will be your usable range.

3.2 Cross-Over Mode Switch (Filter)

This Filter switch allows a specific range of frequencies to be filtered out. Typically, tweeters require filtering of low range frequencies while subwoofers require a filtering of mid to high range frequencies.

1. HPF (High Pass Filter) is best for driving mid and high range speakers or tweeters.
2. LPF (Low Pass Filter) is best for driving subwoofers or low range speakers only.
3. FULL is best suited for driving full range speakers.

3.3 Cross-Over Frequency Control (Freq)

3.3.1 High Pass Filter Mode

The Frequency control knob is used to set the frequency at which the electronic cross-over operates.

When the Cross-Over Filter switch is set to HPF (High Pass Filter) the adjustable frequency range is 40Hz-400Hz.

When in the minimum position (turned fully counter-clockwise) all frequencies less than 40Hz will be filtered from the output signal and all frequencies above 40Hz will be heard from the speakers.

When in the maximum position (turned fully clockwise) all frequencies less than 400Hz will be filtered from the output signal and all frequencies above 400Hz will be heard from the speakers.

The volume will be lower when the frequency is getting close to the minimum position.

3.3.2 Low Pass Filter Mode

When the Cross-Over Filter switch is set to LPF (Low Pass Filter) the adjustable frequency range is 40Hz-400Hz.

When in the minimum position (turned fully counter-clockwise) all frequencies less than 40Hz will be filtered from the output signal and all frequencies above 40Hz will be heard from the speakers.

When in the maximum position (turned fully clockwise) all frequencies less than 400Hz will be filtered from the output signal and all frequencies above 400Hz will be heard from the speakers.

The volume will be lower when the frequency is getting close to the minimum position.

3.3.3 Full Range Mode

When the Cross-Over Filter switch is set to FULL no frequencies will be filtered and the speakers will output all frequencies.

3.4 Boost

The Boost setting allows for additional Bass Boost to be added to the output signal. The boost is applied to 85Hz frequency and allows for 0-12dB of boost.

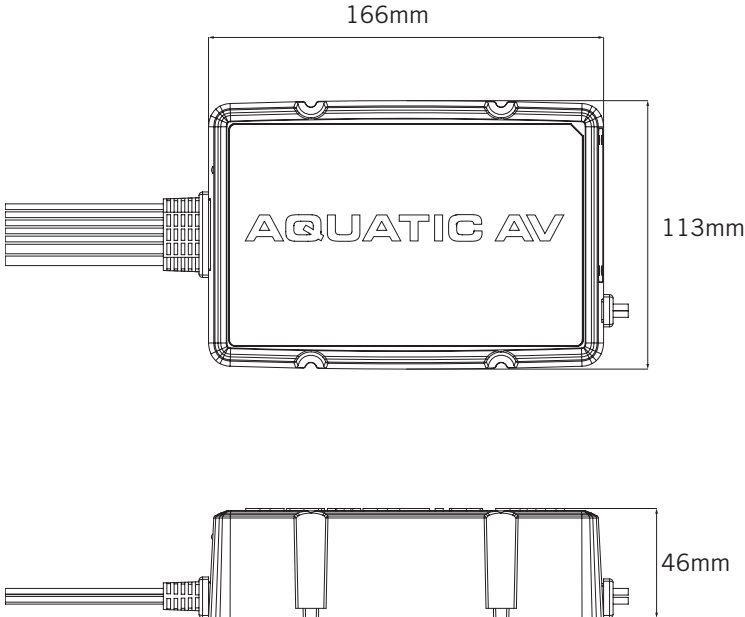
4 Troubleshooting

Problem	Probable Cause	Solution
Amplifier doesn't power up (LED is off).	Power (+) wire is not providing +12V to the amplifier	Check the wire is connected or that it's not making a proper connection. Verify fuses aren't blown. Check continuity on the cables to verify all cables are still making contact.
	Remote wire is not providing +12 V to the amplifier	Check the wiring for remote turn-on wire. Make sure the turn-on source is providing 12V.
	Ground/Power (-) wire is not providing -12V ground to amplifier	Check the wire connected to ground is making proper connection. Verify there is no additional residue. Check continuity on the cables to verify cables are still making contact.
Amplifier powers up, but makes no sound (LED is illuminated red).	Speaker wires are not connected or shorted	Check wiring from the amplifier to each speaker in the system. Make sure the wire terminals are not shorting.
	Input from source unit is not connected properly	Check High or Low Level input wiring from the source unit to the main amplifier
	Source unit has no output	Check source unit is functioning properly all by itself. Refer to the manufacturer's instructions if necessary.
Speaker output sounds low or distorted.	Input gain level is set incorrectly	Set the gain levels using the 'Test and Tune' section of this manual. If already completed this step, lower the gain slightly until the distortion stops
	Low battery condition	Check your battery for proper charge and replace if necessary.
	Overheating	Turn off the system and let it cool. Resume the system and verify all is well. Make sure the amp is not in direct contact with the stereo use mounting bracket. Warning do not use hook and loop fastener and do not place the amp on top of the Harley-Davidson stereo.

5.1 Specifications

Type.....	2 Channel Digital (Class D) Bridgeable Amplifier
Waterproof.....	Yes - IP65
Input Channels.....	Stereo Low-Level (RCA) Input Stereo High-Level (Speaker) Input with Auto-Detect
Output Channels.....	2
Output Impedance (per channel).....	2 Ohm & 4 Ohm stable
Power Output (RMS) @ 4 Ohms.....	100W per channel
Power Output (RMS) @ 2 Ohms.....	150W per channel
Power Output (RMS) - bridged @ 4 Ohms.....	300W
THD.....	<1%
THD (Bridged mode).....	1%
Frequency Response.....	10 - 45kHz
High-Pass/Low-Pass Cross-Over Frequency.....	Configurable from 40Hz - 400Hz
Bass Boost (@ 85Hz).....	Configurable from 0 - 12dB
Overload Protection.....	Yes

5.2 Dimensions



Aquatic AV offers a limited warranty of our products on the following terms:

Length of warranty

2 years on audio systems, electronics, speakers, and accessories (receipt required).

Coverage

This warranty covers only the original purchaser of a Aquatic AV product purchased from an authorized Aquatic AV dealer in the United States. In order to receive service, the purchaser must provide Aquatic AV with a copy of the receipt stating the customer name, dealer name, product purchased and date of purchase.

Defective products

Products found to be defective during the warranty period will be repaired or replaced (with a product deemed to be equivalent) at Aquatic AV's discretion.

What is not covered

Damage caused by accident, abuse, improper operations, theft. Any cost or expense related to the removal or reinstallation of product. Service performed by anyone other than an authorized Aquatic AV service center. Any product with the serial number or tamper labels defaced, altered, or removed. Subsequent damage to other components. Any product not purchased from an authorized Aquatic AV dealer.

Limit on implied warranties

Any implied warranties including warranties of fitness for use and merchantability are limited in duration to the period of the express warranty set forth above. Some states do not allow limitations on the length of an implied warranty, so this limitation may not apply. No person is authorized to assume for Aquatic AV any other liability in connection with the sale of the product.

How to obtain service

You must obtain a return material authorization number (RMA) to return any product to Aquatic AV. You are responsible for shipping charges of returned products to Aquatic AV.

Please record the model and serial number[s] of your equipment in the space provided below as your permanent record and will assist us with your factory warranty coverage. These numbers can be found on the underside of the amplifier.

AQ-AD300.2-MICRO WATERPROOF 2 CHANNEL AMPLIFIER FOR HARLEY-DAVIDSON® MOTORCYCLES



SPECIFICATIONS

Type:	Digital (Class D) Bridgeable Amplifier
Waterproof:	Yes - IP65
Input Channels (Low-Level):	RCA inputs (L & R)
Input Channels (High-Level):	Speaker inputs (L & R) with Auto Detect
Output Channels:	2
Output Impedance (nominal):	2 Ohm & 4 Ohm stable
Power Output (RMS) @ 4 Ohms:	100W per channel
Power Output (RMS) @ 2 Ohms:	150W per channel
Power Output (RMS) - Bridged @ 2 Ohms:	300W
THD:	<1%
THD (Bridged):	1%
Frequency Response:	10Hz - 45kHz
High-Pass/Low-Pass Cross-Over Frequency:	Configurable from 40Hz - 400Hz
Bass Boost (@ 85Hz):	Configurable from 0 - 12dB
Overload Protection:	Yes

DIMENSIONS

