

DS18 ION1600.4D

DS18 ION1600.4D 4-Channel Class D Full Range Amplifier Instruction Manual

Model: ION1600.4D

1. INTRODUCTION

This manual provides detailed instructions for the installation, operation, and maintenance of your DS18 ION1600.4D 4-Channel Class D Full Range Amplifier. Please read this manual thoroughly before attempting installation or operation to ensure proper use and to prevent damage to the unit or your vehicle's audio system. Keep this manual for future reference.

2. SAFETY INFORMATION

- Always disconnect the vehicle's battery negative terminal before starting any electrical work.
- Ensure proper grounding. A secure ground connection is crucial for optimal performance and safety.
- Use appropriate wire gauges for power, ground, and speaker connections as specified in this manual.
- Mount the amplifier securely to prevent movement during vehicle operation.
- Avoid mounting the amplifier in areas exposed to direct sunlight, excessive heat, moisture, or dust.
- Do not operate the amplifier if it is damaged or malfunctioning. Refer to the troubleshooting section or contact customer support.
- Professional installation is recommended for complex setups.

3. PRODUCT OVERVIEW AND FEATURES

The DS18 ION1600.4D is a compact, high-efficiency 4-channel Class D amplifier designed to deliver powerful and clear audio performance for your car or motorcycle audio system.

Key Features:

- Compact Design:** Small footprint for versatile installation options.
- Class D Topology:** High efficiency for reduced heat generation and power consumption.
- 4-Channel Output:** Capable of powering multiple speakers or bridging for higher power to fewer channels.
- Selectable Crossover Filters:** High-Pass (HP) and Low-Pass (LP) filters for precise audio tuning.

- **High-Level Input:** Allows connection to factory head units without RCA outputs.
- **Clipping LED Indicator:** Visual feedback for optimal gain setting.
- **Bonded Components:** Enhanced vibration protection for stable performance.



Figure 3.1: Front view of the DS18 ION1600.4D amplifier, showcasing its compact design and the DS18 logo.



DS18[®]
ION



COMPACT
SIZE
MASSIVE PERFORMANCE

ION1600.4D

COMPACT FULL-RANGE CLASS-D
4-CHANNELS AMPLIFIER



TOTAL Watts:
4800W (Peak)
RMS Wattage:
4x240W RMS Power @ 4 ohm
4x400W RMS Power @ 2 ohm
2x800W RMS Power @ 4 ohm Bridge



Fuse Size:
140A (External)



**Number of
Channels:** 4 ch

WE LIKE IT LOUD

Figure 3.2: Overview of the DS18 ION1600.4D amplifier highlighting its compact size and key power specifications: 4800W Peak, 4x240W RMS at 4 ohms, 4x400W RMS at 2 ohms, and 2x800W RMS bridged at 4 ohms.

4. SETUP AND INSTALLATION

Proper installation is critical for the performance and longevity of your amplifier. If you are unsure about any steps, consult a professional installer.

4.1 Mounting Location

Choose a mounting location that is:

- Secure and free from vibrations.
- Well-ventilated to allow for proper cooling.
- Protected from moisture, dust, and direct heat sources.
- Accessible for wiring and adjustments.

The compact size of the ION1600.4D makes it suitable for various locations, including under seats, in trunks, or within fairings for motorcycles.

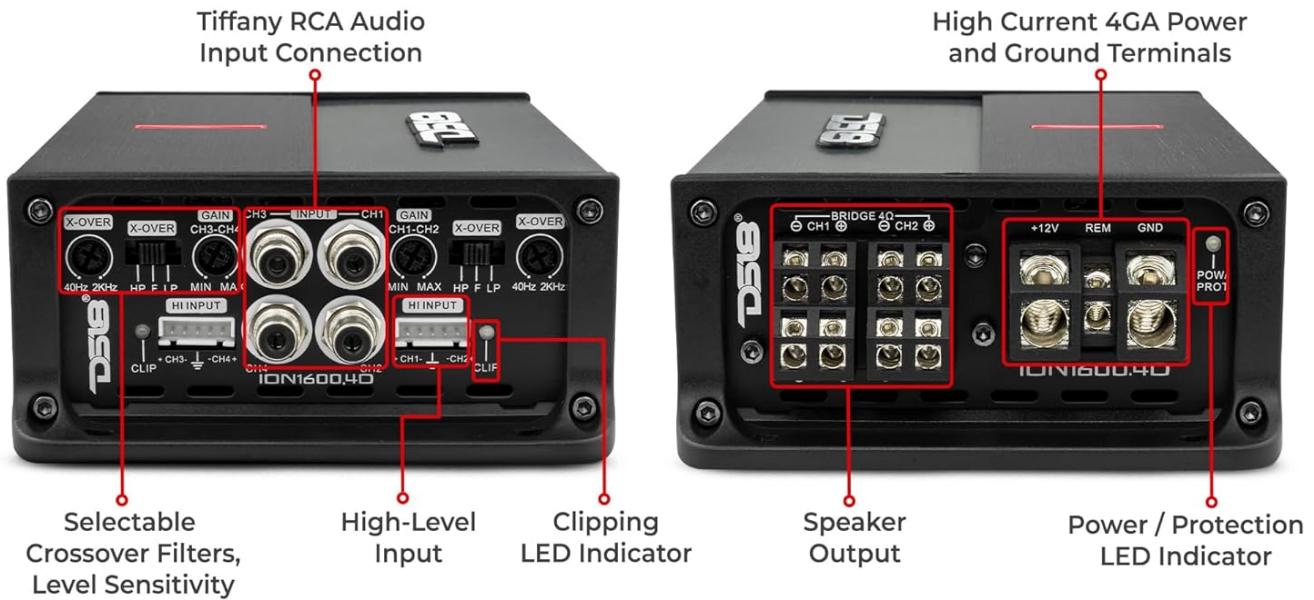


Figure 4.1: The compact design of the DS18 ION1600.4D amplifier, demonstrating its suitability for various installations, including motorcycles.

4.2 Wiring Connections

Refer to the diagrams below for proper wiring connections. Ensure all connections are secure and insulated.

HAS THE ABILITY TO BE CONFIGURED FOR BASS OR MIDS/HIGHS



This amplifier contains bonded components that provide extra vibration protection



Figure 4.2: Detailed view of the DS18 ION1600.4D amplifier's input and output terminals. This includes Tiffany RCA Audio Input Connections, High-Level Inputs, Selectable Crossover Filters, Level Sensitivity controls, Clipping LED Indicator, Speaker Outputs, High Current 4GA Power and Ground Terminals, and Power/Protection LED Indicator.



Figure 4.3: Top view of the amplifier showing the input side with gain controls, crossover switches (HP, F, LP), and RCA/High-Level input connections for channels 1-2 and 3-4.



Figure 4.4: Rear view of the amplifier displaying the power input terminals (+12V, REM, GND) and the speaker output terminals for channels 1-4, including bridging options.

4.2.1 Power and Ground Connections

- Ground (GND):** Connect the GND terminal to a clean, unpainted metal surface of the vehicle chassis. The ground wire should be as short as possible (less than 1 meter) and of the same gauge as the power wire (recommended 4GA).
- Remote (REM):** Connect the REM terminal to the remote turn-on output of your head unit. This wire turns the amplifier on and off with your head unit.
- Power (+12V):** Connect the +12V terminal directly to the positive terminal of the vehicle's battery. Install an inline fuse (140A external fuse recommended) within 18 inches (45 cm) of the battery.

4.2.2 Speaker Connections

Connect your speakers to the "Speaker Output" terminals. Ensure correct polarity (+ to + and - to -). The amplifier supports 4-channel stereo operation or 2-channel bridged operation. Refer to the specifications for minimum impedance requirements.

4.2.3 Input Connections (RCA or High-Level)

- **RCA Input:** Connect RCA cables from your head unit's pre-amp outputs to the "Tiffany RCA Audio Input Connection" on the amplifier.
- **High-Level Input:** If your head unit does not have RCA outputs, use the "High-Level Input" terminals. Connect the speaker wires from your head unit directly to these inputs.

5. OPERATING INSTRUCTIONS

Once installed, the amplifier requires proper adjustment for optimal sound quality.

5.1 Gain Adjustment

The "GAIN" controls match the amplifier's input sensitivity to the output of your head unit. To set the gain:

1. Turn the amplifier gain controls to their minimum (MIN) setting.
2. Turn your head unit volume to about 75-80% of its maximum.
3. Slowly increase the amplifier gain control until you hear distortion or the "CLIPPING LED Indicator" illuminates.
4. Reduce the gain slightly until the distortion disappears or the clipping LED turns off.

Note: The gain control is not a volume control. Setting it too high can cause distortion and damage to your speakers.

5.2 Crossover Adjustment

The ION1600.4D features selectable crossover filters (HPF, LPF, FULL) to optimize sound for your speakers.

- **HPF (High-Pass Filter):** Allows frequencies above the set point to pass through. Use for tweeters or mid-range speakers to prevent low bass frequencies from reaching them.
- **LPF (Low-Pass Filter):** Allows frequencies below the set point to pass through. Use for subwoofers to prevent high frequencies from reaching them.
- **FULL:** Disables the crossover, allowing the full frequency range to pass through.

Adjust the crossover frequency (40Hz - 2kHz) according to your speaker's specifications and desired sound profile.

6. MAINTENANCE

The DS18 ION1600.4D amplifier requires minimal maintenance to ensure long-term performance.

- **Cleaning:** Periodically wipe the amplifier's exterior with a soft, dry cloth. Do not use harsh chemicals or abrasive cleaners.
- **Ventilation:** Ensure that the cooling fan and ventilation openings are not obstructed.
- **Connections:** Occasionally check all wiring connections for tightness and corrosion.

7. TROUBLESHOOTING

If you experience problems with your amplifier, refer to the following common issues and solutions:

Problem	Possible Cause	Solution
No Power / Power LED Off	Blown fuse, poor power/ground connection, no remote signal.	Check inline fuse, verify +12V, GND, and REM connections. Ensure head unit is on.

Problem	Possible Cause	Solution
Protection LED On	Overheating, speaker short circuit, impedance too low.	Check speaker wiring for shorts, ensure proper ventilation, verify speaker impedance. Allow amplifier to cool down.
No Sound	Input signal issue, speaker wiring, gain too low, head unit settings.	Check RCA/high-level input connections, speaker wiring, gain settings, and head unit output.
Distorted Sound	Gain set too high, improper crossover settings, poor quality input signal.	Reduce gain, adjust crossover settings, check input signal quality.

8. SPECIFICATIONS

Feature	Specification
Model	ION1600.4D
Channels	4
Amplifier Class	Class D
Total Watts (Peak)	4800W
RMS Power @ 4 Ohm	4 x 240W
RMS Power @ 2 Ohm	4 x 400W
RMS Power @ 4 Ohm Bridged	2 x 800W
Minimum Impedance	2 Ohm (Stereo) / 4 Ohm (Bridged)
Frequency Response	10Hz - 20kHz
Fuse Size (External)	140A
Voltage	12 Volts (Maximum Supply Voltage)
Dimensions (L x W x H)	7.32" x 4.72" x 2" (18.6 cm x 12 cm x 5.1 cm)
Mounting Type	Surface Mount

9. WARRANTY AND SUPPORT

For warranty information and technical support, please refer to the official DS18 website or contact your authorized DS18 dealer. Keep your purchase receipt as proof of purchase for any warranty claims.

For further assistance, visit the [DS18 Official Website](#).





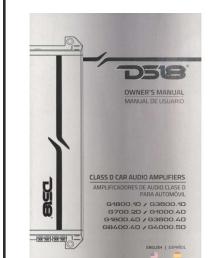
[DS18 CANDY-6 6-Channel Full Range Class D Amplifier Owner's Manual & Installation Guide](#)

Comprehensive owner's manual and installation guide for the DS18 CANDY-6 6-channel full-range Class D amplifier. Features technical specifications, connection diagrams, and setup instructions for optimal audio performance.



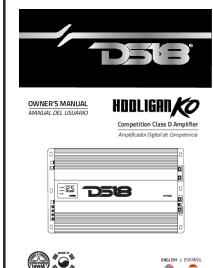
[DS18 CANDY-X Series Class D Amplifiers Owner's Manual](#)

Owner's manual for DS18 CANDY-X series Class D amplifiers, covering models CANDY-X1B, CANDY-X2B, CANDY-X4B, CANDY-X5B, and CANDY-XXL1B. Includes functions, controls, system wiring diagrams, troubleshooting, and specifications.



[DS18 GEN-X Series Class D Car Audio Amplifiers Owner's Manual](#)

This owner's manual provides comprehensive details on DS18 GEN-X series Class D car audio amplifiers, including installation, features, controls, and troubleshooting for models such as G1800.1D, G700.2D, G1000.4D, G1800.4D, G3600.4D, G8400.4D, and G4000.5D.



[DS18 HOOLIGAN KO Series Car Amplifiers: Owner's Manual, Features, and Specifications](#)

Comprehensive owner's manual for the DS18 HOOLIGAN KO series of Competition Class D car amplifiers. Includes installation guides, control explanations, technical specifications, and troubleshooting tips for models H-KO2, H-KO3, H-KO5, H-KO8, H-KO10, and H-KO340. Features include high-quality audio reproduction, variable crossovers, and robust protection circuits.



[DS18 ZR Series Amplifiers Owner's Manual](#)

Owner's manual for DS18 ZR Series Monoblock Class D Subwoofer Amplifiers and 4 Channels Class D Stereo Full Range Amplifiers, detailing features, specifications, connections, and troubleshooting.



[DS18 CANDY-X Series Digital Amplifiers Owner's Manual](#)

Comprehensive owner's manual for DS18 CANDY-X series digital monoblock and multi-channel car amplifiers. Includes installation, operation, specifications, and troubleshooting guides.