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DS18 PRO-DR250

DS18 PRO-DR250 Phenolic Diaphragm Driver Unit

INSTRUCTION MANUAL

1. Product Overview

The DS18 PRO-DR250 is a high-performance compression driver unit designed for professional audio systems. It features a phenolic diaphragm, Kapton voice coil, and a high-strength ferrite magnet, delivering clear and powerful sound reproduction. This unit is engineered for durability and consistent performance in demanding audio environments.



Image 1.1: Front view of the DS18 PRO-DR250 driver unit.

2. Safety Information

Please read and understand all safety instructions before installing or operating this product. Failure to do so may result in injury or damage to the equipment.

- **Power Handling:** Do not exceed the rated RMS and MAX power handling of the driver unit.

Overpowering can lead to permanent damage.

- **Volume Levels:** Prolonged exposure to high volume levels can cause hearing damage. Use caution when adjusting audio levels.
- **Installation:** Ensure proper electrical connections and secure mounting to prevent accidental dislodgement or short circuits. Consult a professional if unsure about installation procedures.
- **Ventilation:** Ensure adequate ventilation around the driver unit to prevent overheating, especially during extended operation at high power.
- **Environmental Conditions:** Avoid exposing the unit to extreme temperatures, moisture, or direct sunlight.

3. Package Contents

Verify that all items are present in the package:

- DS18 PRO-DR250 300 Watts Phenolic Diaphragm Driver Unit (1)

4. Features

The DS18 PRO-DR250 driver unit incorporates several key features for optimal audio performance:

- **Competition-Quality Compression Driver:** Designed for high-fidelity audio, featuring a phenolic diaphragm, Kapton voice coil, and a ferrite magnet.
- **Peak Power Handling:** Capable of handling up to 300W MAX power and 200W RMS, providing robust sound output.
- **High-Quality Magnets:** Equipped with a 13 oz Ferrite magnet for a wide range of tones and high-volume performance.
- **Versatile Horn Compatibility:** Features standard 1" (25.4mm) TPI threading, allowing compatibility with various horn styles.
- **Durable and Long-Lasting Performance:** Engineered to operate efficiently without excessive power draw from the amplifier, ensuring extended equipment lifespan.

5. Setup and Installation

Follow these steps for proper installation of your DS18 PRO-DR250 driver unit:

1. **Mounting:** Securely attach the driver unit to a compatible horn. The PRO-DR250 features standard 1" (25.4mm) TPI threading for easy integration. Ensure the mounting is firm to prevent vibrations and ensure optimal sound projection.
2. **Wiring:** Connect the positive (+) terminal of the driver unit to the positive output of your amplifier or crossover network. Connect the negative (-) terminal to the negative output. Ensure all connections are secure and free from short circuits.
3. **Crossover Network:** It is highly recommended to use an appropriate crossover network to protect the driver unit from low frequencies, which can cause damage. Refer to the specifications for the recommended frequency response.



Image 5.1: Top view of the DS18 PRO-DR250, highlighting the connection terminals.



Image 5.2: Side view of the DS18 PRO-DR250, illustrating the 1-inch TPI threading for horn attachment.

Installation Overview Video

Your browser does not support the video tag.

Video 5.3: An overview of the DS18 PRO-DR250 Phenolic Diaphragm Driver Unit, demonstrating its physical characteristics and potential installation points. This video is provided by DS18Sound.

6. Operating Instructions

Once installed, the DS18 PRO-DR250 driver unit operates as part of your audio system. Observe the following guidelines:

- **Initial Power-Up:** Start with the amplifier volume at its lowest setting before powering on your audio system. Gradually increase the volume to a desired listening level.
- **Power Matching:** Ensure your amplifier's output power is appropriately matched to the driver unit's RMS power handling (200W). Avoid sustained operation at clipping levels.
- **Frequency Range:** The driver unit is designed for frequencies between 1KHz and 16.3KHz. Ensure your crossover network is set to prevent frequencies outside this range from reaching the driver.

7. Maintenance

The DS18 PRO-DR250 requires minimal maintenance to ensure long-term performance:

- **Cleaning:** Periodically wipe the exterior of the driver unit with a soft, dry cloth to remove dust and debris. Do not use harsh chemicals or abrasive cleaners.
- **Inspection:** Regularly inspect the wiring connections for any signs of corrosion or looseness. Ensure the mounting remains secure.
- **Diaphragm Replacement:** If the diaphragm is damaged, it can be replaced with the PRO-DR250VC replacement diaphragm model. Consult a qualified technician for replacement if you are not experienced with speaker repair.

8. Troubleshooting

If you encounter issues with your DS18 PRO-DR250, refer to the following common problems and solutions:

- **No Sound Output:**
 - Check all wiring connections from the amplifier to the driver unit for proper polarity and secure contact.
 - Verify that the amplifier is powered on and functioning correctly.
 - Ensure the crossover network is correctly configured and not blocking the frequency range.
 - Inspect the diaphragm for visible damage.
- **Distorted Sound:**
 - Reduce the amplifier's volume or gain settings to prevent clipping.
 - Check for proper impedance matching between the driver unit and the amplifier.
 - Ensure the driver unit is securely mounted to the horn. Loose mounting can cause rattling.
 - Verify that the crossover frequency is set correctly.
- **Intermittent Sound:**
 - Check for loose or corroded wiring connections.
 - Inspect the speaker terminals for any intermittent contact.

If problems persist after attempting these solutions, contact DS18 customer support or a qualified audio technician.

9. Specifications

Detailed technical specifications for the DS18 PRO-DR250 driver unit:

Specification	Value
Model	PRO-DR250
Type	Compression Driver
RMS Power	200W
MAX Power	300W
Sensitivity	98dB
Voice Coil Size	2.03"

Specification	Value
Impedance	8 Ohms
Frequency Response	1KHz - 16.3KHz
Magnet Material	High Strength Ferrite
Diaphragm Material	Phenolic
Voice Coil Wire	Kapton 2 Layer
Magnet Weight	13 oz
Throat Diameter	1"
Replacement Diaphragm Model	PRO-DR250VC
Product Dimensions	1"D x 1"W x 3.5"H
Item Weight	3 Pounds
Mounting Type	Flush Mount
Connectivity Technology	Auxiliary

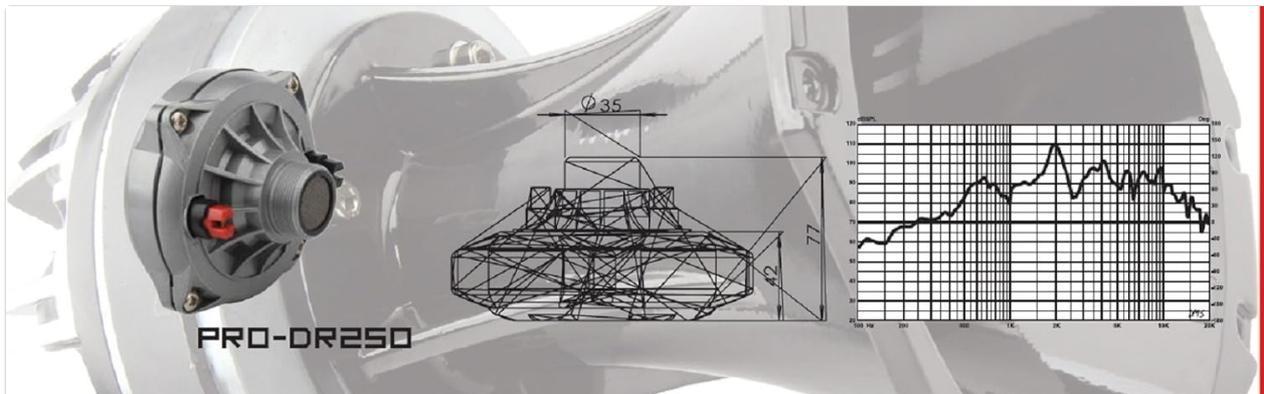


Image 9.1: Technical drawing showing dimensions and frequency response of the PRO-DR250.

PRO DRIVERS	FRAME	RMS	MAX	SENSITIVITY	FREQUENCY	MAGNET oz	OVERALL DIAMETER
PRO-DKH1	Aluminum	600W	1000W	108dB	800-18.5KHz	35 oz	6.18"
PRO-DKH2	Aluminum	800W	1200W	110dB	900-17.2KHz	65 oz	7.40"
PRO-DR250	Die-Cast Aluminum	200W	300W	114dB	1050-16.3KHz	13 oz	4.41"

PRO DRIVERS	BAFFLE CUTOUT	MOUNTING	THROAT	NOMINAL	MINIMUM	VOICE COIL
MODEL	DIAMETER	DEPTH	DIAMETER	IMPEDANCE	IMPEDANCE	DIAMETER
PRO-DKH1	5.4"	7.68"	2"	8.0Ω	6.2Ω	2.03"
PRO-DKH2	6.77"	9.76"	2"	8.0Ω	6.2Ω	2.93"
PRO-DR250	1-3/8-18TPI	3.03"	1"	8.0Ω	6.0Ω	2.03"

Image 9.2: Comparison table of DS18 PRO series drivers, including the PRO-DR250.

10. Warranty and Support

DS18 products are designed for reliability and performance. For specific warranty information, please refer to the warranty card included with your product or visit the official DS18 website. For technical support, troubleshooting assistance, or to inquire about replacement parts, please contact DS18 customer service through their official channels.