



— Installation assistance available at: —

RFTECH

— www.rockfordfosgate.com/rftech —

ELEMENT READY™ SUBWOOFERS

M2

M2D4-12S
M2D4-12SB
M2D2-12S
M2D2-12SB

600 South Rockford Drive • Tempe, Arizona 85281 United States
Direct: (480) 967-3565 • Toll Free: (800) 669-9899

rockfordfosgate.com



Installation & Operation

Introduction

Dear Customer,

Congratulations on your purchase of the world's finest brand of audio products. At Rockford Fosgate we are fanatics about musical reproduction at its best, and we are pleased you chose our product. Through years of engineering expertise, hand craftsmanship and critical testing procedures, we have created a wide range of products that reproduce music with all the clarity and richness you deserve.

For maximum performance we recommend you have your new Rockford Fosgate product installed by an Authorized Rockford Fosgate Dealer. Please read your warranty and retain your receipt and original carton for possible future use.

Great product and competent installations are only a piece of the puzzle when it comes to your system. Make sure that your installer is using 100% authentic installation accessories from Rockford Fosgate in your installation. Rockford Fosgate has everything from RCA cables and speaker wire to power wire and battery connectors. Insist on it! After all, your new system deserves nothing but the best.

To add the finishing touch to your new Rockford Fosgate image, order your Rockford accessories, which include everything from T-shirts to hats.

Visit our web site for the latest information on all Rockford products; www.rockfordfosgate.com or, in the U.S. call 1-800-669-9899 or FAX 1-800-398-3985. For all other countries, call +001-480-967-3565 or FAX +001-480-966-3983.

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If, after reading your manual, you still have questions regarding this product, we recommend that you see your Rockford Fosgate dealer. If you need further assistance, you can call us direct at 1-800-669-9899. Be sure to have your serial number, model number and date of purchase available when you call.

Safety

This symbol with "WARNING" is intended to alert the user to the presence of important instructions. Failure to heed the instructions could result in severe injury or death.



PRACTICE SAFE SOUND

Continuous exposure to sound pressure levels over 100dB may cause permanent hearing loss. High powered auto sound systems may produce sound pressure levels well over 130dB. Use common sense and practice safe sound.

PRATIQUEZ UNE ÉCOUTE SANS RISQUES

Une exposition continue à des niveaux de pression acoustique supérieurs à 100 dB peut causer une perte d'acuité auditive permanente. Les systèmes audio de forte puissance pour auto peuvent produire des niveaux de pression acoustique bien au-delà de 130 dB. Faites preuve de bon sens et pratiquez une écoute sans risques

PRACTIQUE EL SONIDO SEGURO

El contacto continuo con niveles de presión de sonido superiores a 100 dB puede causar la pérdida permanente de la audición. Los sistemas de sonido de alta potencia para automóviles pueden producir niveles de presión de sonido superiores a los 130 dB. Aplique el sentido común y practique el sonido seguro.

PRAKTIZIEREN SIE SICHEREN SOUND

Fortgesetzte Geräuschdruckpegel von über 100 dB können beim Menschen zu permanentem Hörverlust führen. Leistungsstarke Autosoundsysteme können Geräuschdruckpegel erzeugen, die weit über 130 dB liegen. Bitte wenden Sie gesunden Menschenverstand an und praktizieren Sie sicheren Sound.

OSSERVATE LE REGOLE DEL SUONO SENZA PERICOLI

La costante esposizione a livelli di pressione acustica al di sopra dei 100dB possono causare la perdita permanente dell'udito. I sistemi audio ad alta potenza possono produrre livelli di pressione acustica ben superiori ai 130dB. Si consiglia il buon senso e l'osservanza delle regole del suono senza pericoli

This symbol with "CAUTION" is intended to alert the user to the presence of important instructions. Failure to heed the instructions could result in injury or unit damage.



- To prevent injury and damage to the unit, please read and follow the instructions in this manual.
- If you feel unsure about installing this system yourself, have it installed by a qualified Rockford Fosgate technician.
- Before installation, disconnect the battery negative (-) terminal to prevent damage to the unit, fire and/or possible injury.

<i>Model</i>	M2D2-12S/SB M2D4-12S/SB
<i>Nominal Diameter</i>	12" (304.8mm)
<i>Description</i>	Subwoofer
<i>Nominal Impedance (Ohms)</i>	2 or 4 Ω DVC
<i>Frequency Response (Hz)</i>	20-750
<i>Voice Coil Diameter - inch (mm)</i>	1.95" (2-Layer) (49.5mm)
<i>Power Handling - Watts (RMS/Peak)</i>	400/1600
<i>Fs - Free Air Resonance (Hz)</i>	38
<i>Qts</i>	0.85
<i>Vas - cu. ft. (Liter)</i>	2.26³ (64L)
<i>Displacment -cu. fl. (Liter)</i>	0.12³ (3.43L)
<i>Sensitivity (2.83V/1M)</i>	90dB
<i>Xmax - inch (mm)</i>	0.55" (15mm)
<i>Grille/Trim Ring</i>	YES
<i>LED Current Draw</i>	0.25 Amps
<i>Recommended Fused Rating For LED's (not included)</i>	1 Amp
<i>LED Voltage Range</i>	9-16 Volts

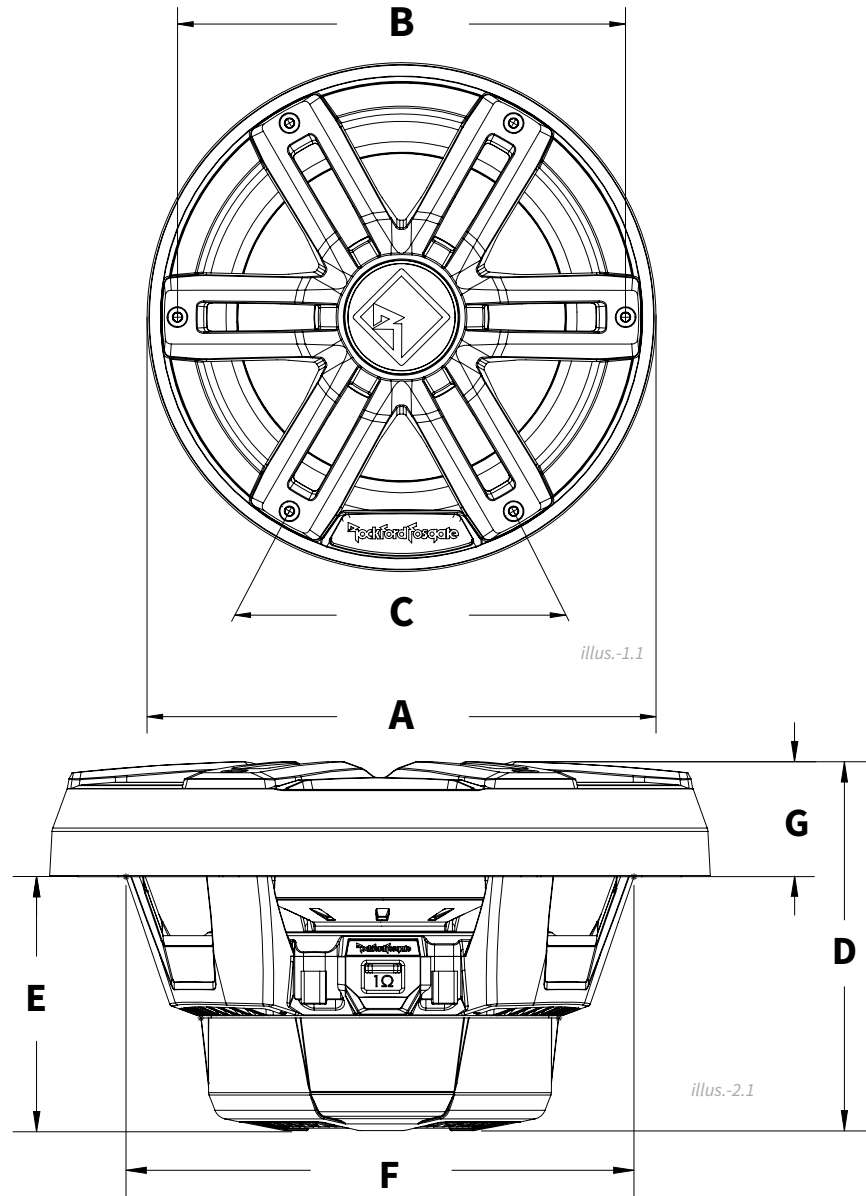
*** All measurements taken with voice coils wired in series**



VERIFIED WITH KLIPPEL

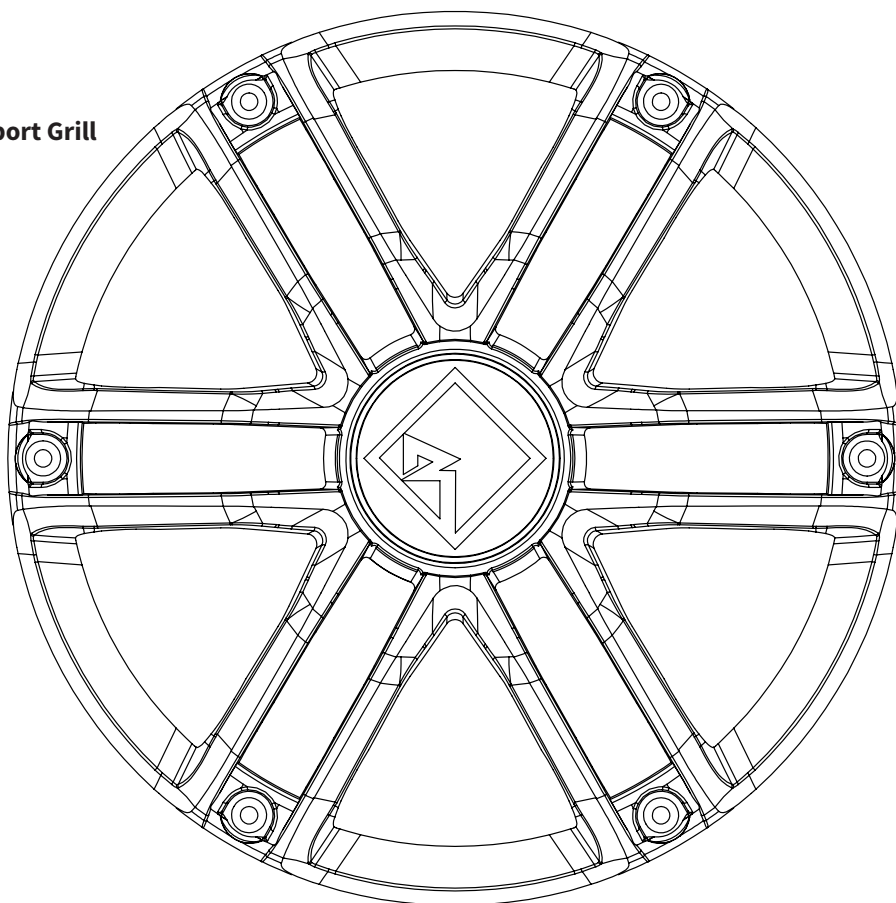
To adorn the 'Verified with Klippel' mark, the qualifying company's loudspeaker engineering personnel must be trained and certified by Klippel prior to using the three separate Klippel systems to design, develop and test. Rockford Fosgate has made the investment in Klippel to deliver the best possible speakers and subwoofers to their customers.

Diagrams

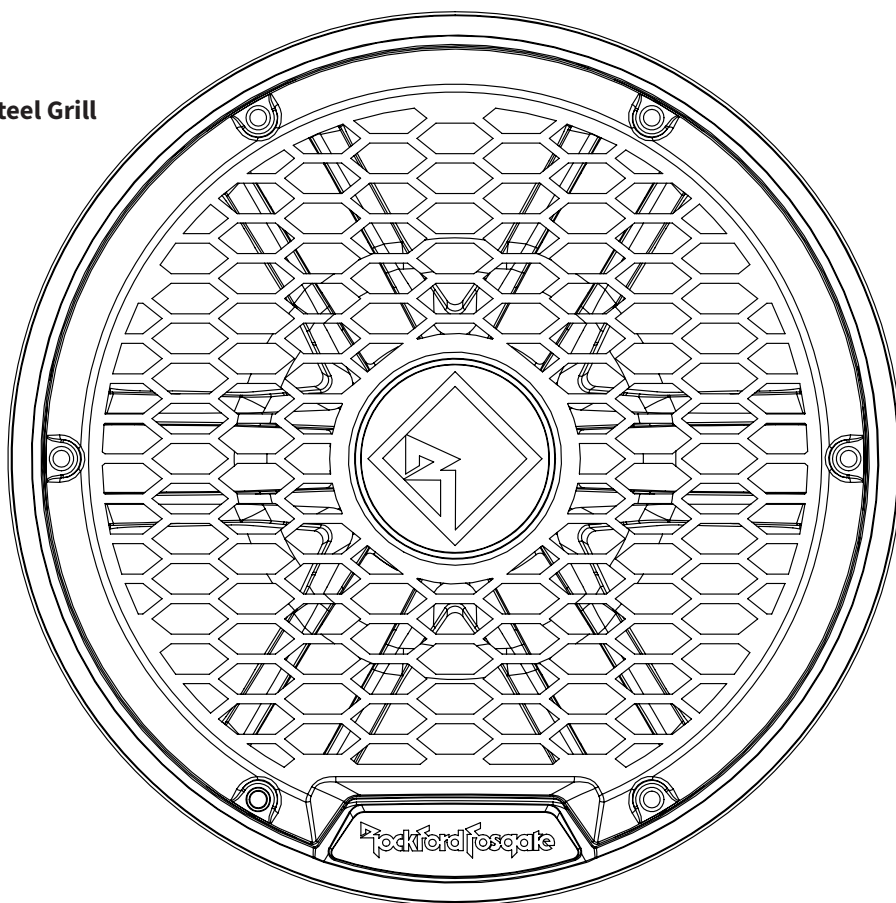


Model	M2D2-12S/SB M2D4-12S/SB
Overall Diameter (A)	13.87" (352.2mm)
Screw Mounting Diameter (B)	12.2" (310mm)
Mounting Screw Angle (C)	6X60°
Overall Height (D)	7.53" (191.4mm)
Mounting Depth (E)	5.24" (133.1mm)
Cut-out Diameter (F)	10.9" (277.2mm)
Grill Height (G)	2.29" (58.2mm)

Sport Grill



Stainless Steel Grill



Installation

Contents

- (1) Element Ready™ Subwoofer with Sport/ Stainless Grill
- (1) COLOR OPTIX™ Harness
- (1) Socket head driver bit
- (6) Socket Head Stainless Screws
- (1) 1/8" Drill Bit
- Installation and Operation Manual

Sealed Enclosures

Sealed enclosures are the simplest to build. The most important part of building a sealed enclosure is to make sure that the enclosure is airtight. Using glue and some type of sealant on all seams will ensure solid construction and prevent air leaks. The box volume will directly impact the performance of the speaker. Larger enclosures will provide flatter response and deeper bass where smaller boxes will provide a bump in the response curve and generally higher output for greater SPL.

Advantages of sealed enclosures:

- Small enclosures
- Linear (Flat) response
- No port noise
- High power handling at all frequencies
- Excellent for sound quality
- Extended low frequency output when compared to vented enclosures

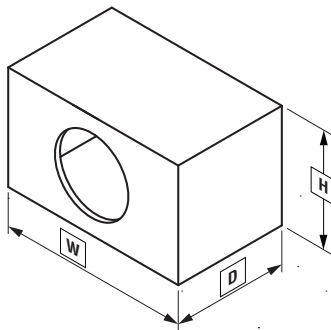
Building an Enclosure

To work properly, the walls of the enclosure must be rigid and not flex when subjected to the high pressures generated by the speaker's operation. For optimum performance, we recommend using 3/4" MDF (Medium Density Fiberboard) and internal bracing. The enclosure should be glued together and secured with nails or screws.

Calculating Volume

Calculating volume is merely a matter of measuring the dimensions in inches and using the formula: H x W x D divided by 1728 (cubic feet). See block below.

Box Volume	Height" x Width" x Depth"
Divided by (cubic feet)	1728



If two facing sides are of uneven length, add them together and divide by two to take the average. Using this number will give you the volume without the necessity of calculating the box in sections and adding the sections together. The thickness of the baffle material reduces the internal volume so this must be subtracted from the outside dimensions to determine the internal volume. The speaker itself also reduces the internal volume. The amount of air displaced by each model is listed on the specification sheet and should also be subtracted from the gross volume calculation.

Sealed Enclosure

NOTE: Vb is the internal volume, before any speaker displacement is added. All external dimensions were based on the use of 3/4" (1.90cm) materials.

NOTE: When using enclosures other than recommended, call Technical Support for correct application.

Optimum Sealed Enclosure Recommendation

Sealed Enclosures	12"
Total Internal Volume cu. ft. (Liter)	.75 (21L)

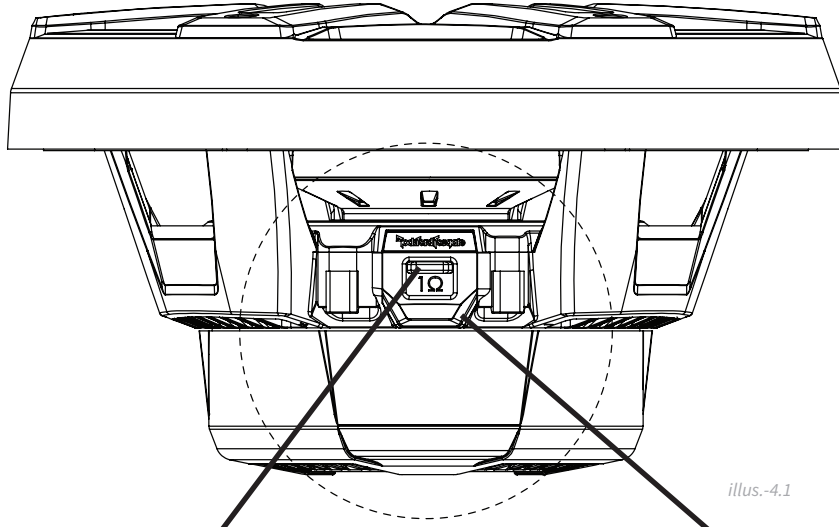
Installation Considerations

Before beginning any installation, follow these simple rules:

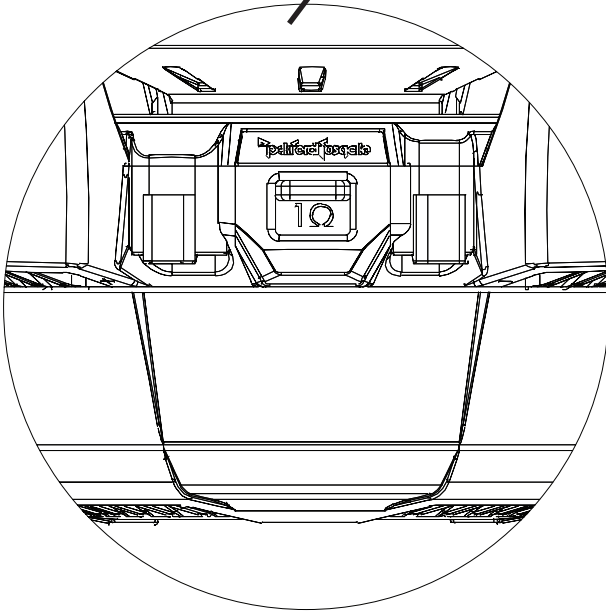
- 1. Be sure to carefully read and understand the instructions before attempting to install these speakers.*
- 2. For easier assembly, we suggest you run all wires prior to mounting your speakers in place.*
- 3. Use high quality connectors for a reliable installation and to minimize signal or power loss.*
- 4. Think before you drill! Be careful not to cut or drill into gas tanks, fuel lines, brake or hydraulic lines, vacuum lines or electrical wiring when working on any vehicle. If installation in a boat, take care not to cut or drill through the main hull.*
- 5. Never run wires underneath the vehicle. Running the wires inside the vehicle or hull area provides the best protection.*
- 6. Avoid running wires over or through sharp edges. Use rubber or plastic grommets to protect any wires routed through metal, especially the firewall.*

Mounting

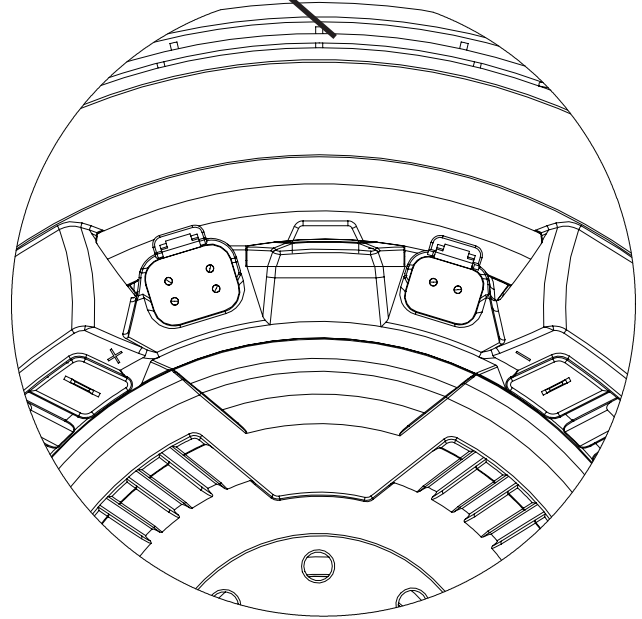
- 1. Determine where the speakers will be mounted. Ensure an area large enough for the speaker to mount evenly. Be sure that the mounting location is deep enough for the speaker to fit; if mounting in a door, operate all functions (windows, locks, etc.) through their entire operating range to ensure there is no obstruction.*
- 2. Refer to the specification chart to determine the proper diameter hole to cut for your speaker model. Cutting and mounting templates can be found at www.rockfordfosgate.com.*
- 3. Mark the locations for the mounting screws. Drill the holes with a 1/8" bit.*
- 4. Feed the speaker wires through the cutout and connect to the speaker terminals. Be sure to observe proper polarity when connecting the wires. The speaker's positive terminal is indicated with a "+".*
- 5. Fit the trim ring over the speaker and mount into place using the four (4) screws that are provided.*
- 6. Tighten the screws until the speaker is snug in place to prevent rattling. Do not over tighten the screws.*



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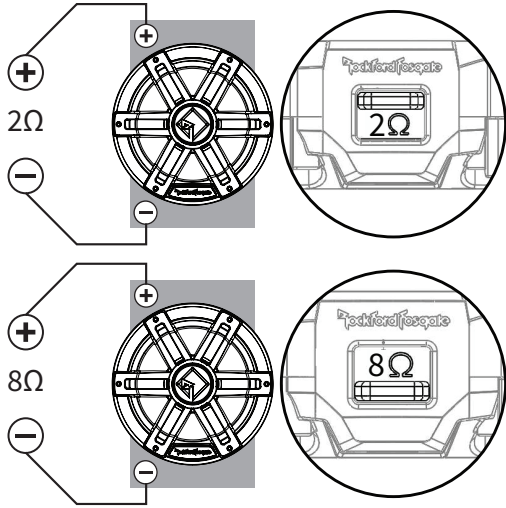


SPEAKER TERMINAL SWITCH

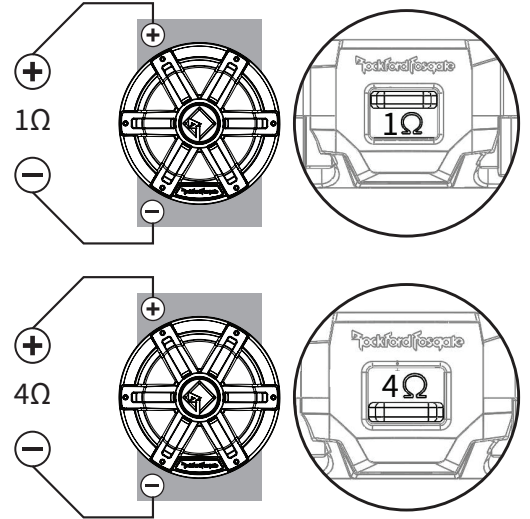


SPEAKER & COLOR OPTIX™ TERMINALS

D4 Impedance Options

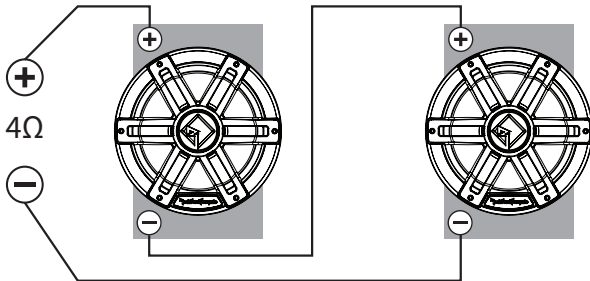


D2 Impedance Options

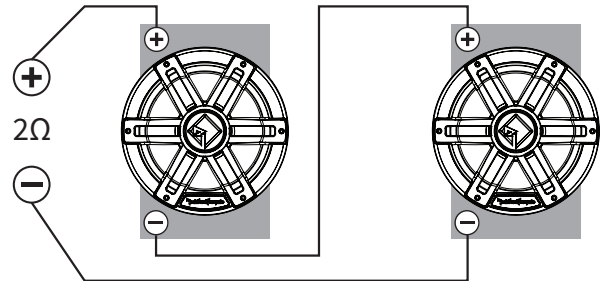


Woofer Series Wiring Options

D4 with Switch on 2Ω

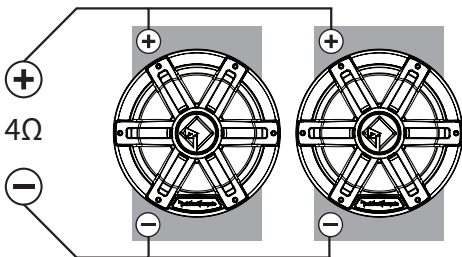


D2 with Switch on 1Ω

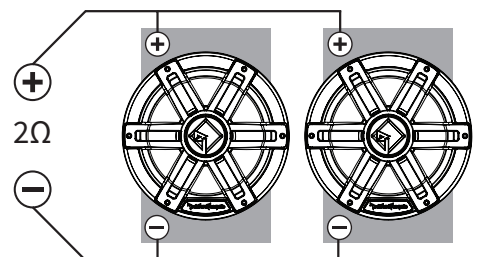


Woofer Parallel Wiring Options

D4 with Switch on 8Ω

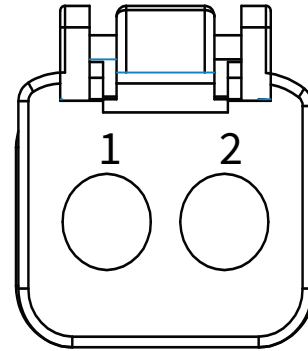


D2 with Switch on 4Ω



SPEAKER Wiring

There are (2) different options for wiring your speakers. You can also utilize the DEUTSCH™/Amphenol style connector (not included) input next to the COLOR OPTIX™ connector.



illus.-4.3

Speaker Pin Out (wire side)
1 - RED - Positive Speaker Input
2 - BLACK - Negative Speaker Input
NOT included with speakers

Connector is DEUTSCH™/Amphenol style DT06-2S

COLOR OPTIX™ Wiring

If not using the PMX-RGB, follow the diagrams below for proper pin out and hard wiring instructions.

COLOR OPTIX™ Wiring Precautions

- Do not connect to 24 Volt electrical systems
- We recommend only using the COLOR OPTIX™ wiring chart or connecting to the PMX-RGB. Connecting any other way could cause damage to the speakers or the device you have connected to.
- We recommend installing a fuse (not included) on the Yellow 12 Volt wire whenever you are NOT using the PMX-COLOR OPTIX™. See COLOR OPTIX™ wiring chart for wiring options.
- Rockford recommends a minimum of 20 gauge wire when hard wiring your COLOR OPTIX™ speakers.
- Never wire the COLOR OPTIX™ lights directly to 12 volts. Utilize either the PMX-RGB or a toggle switch (not included) connected to a fused 12 volt power supply. Refer to the specification to determine the size of fuse (not included) needed

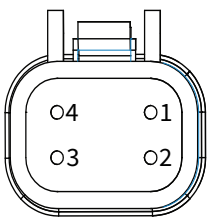
COLOR OPTIX™ WIRING OPTIONS

LED OUTPUT COLOR	CONNECT THIS COLOR WIRE TO GROUND
RED	RED
GREEN	GREEN
BLUE	BLUE
YELLOW	RED & GREEN
PINK	RED & BLUE
AQUA	GREEN & BLUE
WHITE	RED, GREEN & BLUE

Connect colored wires on right to make output color on left.

Connect all Yellow wires together to switched 12 Volts. See Wiring Precautions.

COLOR OPTIX™ Pin Out (wire side)



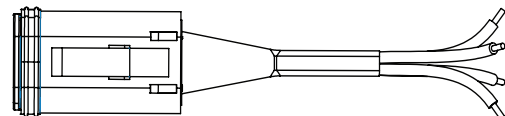
illus.-4.1

- 1 - Yellow (12V + Input)
- 2 - Green (Ground Input)
- 3 - Blue (Ground Input)
- 4 - Red (Ground Input)

Included with speakers

Connector is DEUTSCH™/Amphenol style DT06-4S

COLOR OPTIX™ Connector



Included

illus.-4.2

Rockford Corporation offers a limited warranty on Rockford Fosgate products on the following terms:

Length of Warranty

POWER Amplifiers – 2 Years

BMW® Direct Fit Speakers – 2 Years

PUNCH® & PRIME® Amplifiers – 1 Year

Speakers, Signal Processors, Accessories and Capacitors – 1 Year

All marine, motorcycle, motorsport products - 2 Years

Any Factory Refurbished Product – 90 Days (receipt required)

What is Covered

This warranty applies only to Rockford Fosgate products sold to consumers by authorized Rockford Fosgate dealers in the United States of America. Products purchased by consumers from an Authorized Rockford Fosgate Dealer in another country are covered only by that country's Distributor and not by Rockford Corporation.

Who is Covered

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

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

What is Not Covered

- 1. Damage caused by accident, abuse, improper installation, operations, theft, water (on non-Element Ready products).*
- 2. Any cost or expense related to the removal or reinstallation of product.*
- 3. Service performed by anyone other than Rockford or an authorized Rockford Fosgate service center.*
- 4. Any product which has had the serial number defaced, altered, or removed.*
- 5. Subsequent damage to other components.*
- 6. Any product purchased outside the U.S.*
- 7. Any product not purchased from an authorized Rockford Fosgate dealer. Refer to rockfordfosgate.com dealer locator for more detail.*

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 Rockford Fosgate any other liability in connection with the sale of the product.

How to Obtain Service

Please call 1-800-669-9899 for Rockford Customer Service. You must obtain an RA# (Return Authorization number) to return any product to Rockford Fosgate. You are responsible for shipment of product to Rockford.

EU Warranty

This product meets the current EU warranty requirements, see your Authorized dealer for details.