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E S O T E C

High-End Mobile Loudspeaker Systems



# Introduction

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Dear Music Lover,

Thank you for your decision to acquire Dynaudio Automotive Loudspeakers for after-market installation. The Dynaudio Esotec Systems range has been developed to the same high standard as the company's renowned home audio and professional studio loudspeaker products. The Dynaudio Automotive Esotec range is specifically engineered for optimum performance in a vehicle to ensure the most precise in-car music reproduction achievable. Dynaudio's advanced technology is the result of many years of intense research and development mated to the highest quality standards in production and the company's enduring passion for musical truth.



Dynaudio is one of very few audio companies producing loudspeaker drivers in-house through its own dedicated development and production departments. All Dynaudio loudspeakers are engineered and manufactured in Denmark from the finest grade materials to the company's extremely high quality standards, and each must pass no less than 86 individual testing stations, representing the most stringent such measures in the industry. The state-of-the-art Dynaudio manufacturing facility is so advanced and features such strict quality control measures that Dynaudio is likely the only specialty audio company to have exceeded the ISO 9000 quality standard and earn QS 9000 certification.

We wish you many years of enjoying and experiencing music at the highest level of performance,

Dynaudio

## About this installation manual

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This installation manual provides all technical specifications, installation dimensions and crossover connection instructions for the Dynaudio Esotec series. To realize the full potential of Dynaudio Esotec systems, some areas should be addressed, as touched upon in the following pages.

Due to the great variety of installation conditions it will not give specific instructions how to install the systems into your car. Please refer to the operating manual of your car or ask your local automotive dealer for further help. To observe all relevant matters and thus maximizing the tremendous performance potential of your Dynaudio Esotec loudspeaker system in your car, ask your authorized Dynaudio automotive loudspeaker dealer for assistance. He has the knowledge and expertise to perform a high quality aftermarket installation.

## Safety information

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As all Dynaudio Esotec Series components are passive (meaning these rely on external amplification), the components themselves can not cause any damage.

However, the components can be damaged beyond repair unless a few ground rules are observed:

- ▶ Insure all components are properly installed
- ▶ Observe the technical specifications
- ▶ Always use high-quality cabling and amplification

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### CAUTION



### HIGH SOUND PRESSURE LEVELS

Listening to high sound pressure levels over a longer period of time may harm your hearing.

- ▶ To avoid auditory effects do not listen to high sound levels over a longer period of time.
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# Warranty

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Dynaudio provides a limited manufacturer's warranty on Dynaudio Esotec products. Please check with your local distributor for warranty conditions.



This warranty only covers faults or defects in material and production. Damage caused as a result of abuse, misuse or defective electronics is not covered by the warranty. The warranty will only be valid if the metallic Dynaudio holographic safety label is on the driver.

The warranty is valid only if the product is purchased from an authorized Dynaudio Esotec dealer. All warranty claims must be accompanied by a copy of the original purchase invoice and warranties are only valid in the country or market of original origin or distribution. Should warranty service be required, it must be arranged for in the country of purchase by an authorized Dynaudio Esotec dealer.

## Technical specifications

### Tweeter/Midrange

	MD 102	MD 142
Nominal impedance	8 Ω	8 Ω
Recommended frequency range	2200 – 30000 Hz	700 – 6000 Hz
Power handling		
• Nominal long term IEC	100 W	100 W
• Transient	500 W	1000 W
Net weight	0.126 kg	0.75 kg
Overall dimensions (Ø x D)	62.2 x 43 mm	121 x 66 mm



### Woofer

	MW 152	MW 162	MW 162 GT	MW 172	MW 182
Nominal impedance	4 Ω	4 Ω	4 Ω	4 Ω	4 Ω
Recommended frequency range	55 – 3500 Hz	40 – 4000 Hz	40 – 4000 Hz	35 – 3500 Hz	30 – 2000 Hz
Power handling					
• Nominal long term IEC	100 W	120 W	120 W	150 W	180 W
• Transient	1000 W	1000 W	1000 W	1000 W	1000 W
Net weight	1.1 kg	1.2 kg	1.1 kg	1.3 kg	1.85 kg
Overall dimensions (Ø x D)	146 x 70 mm	175 x 77 mm	166 x 71 mm	200 x 88 mm	239 x 86 mm

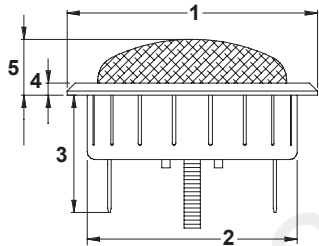
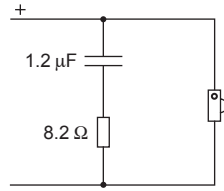
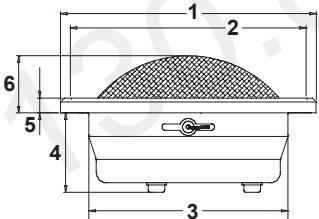
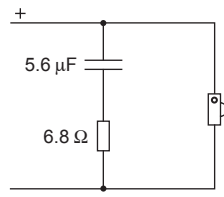


### Crossover

	X 252	X362
Crossover frequencies	2200 Hz	900 Hz / 3500 Hz
Nominal impedance	4 Ω	4 Ω
Power handling		
• MW 152	100 W	–
• MW 162/162 GT	120 W	200 W
• MW 172	150 W	200 W
• MW 182	–	200 W
Dimensions	38 x 84 x 145 mm	43 x 104 x 175 mm
Net weight	0.33 kg	0.60 kg

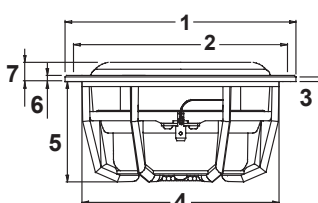
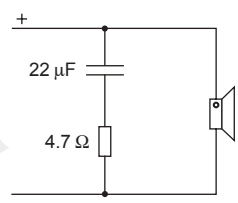
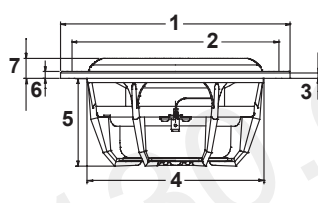
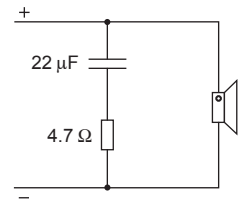
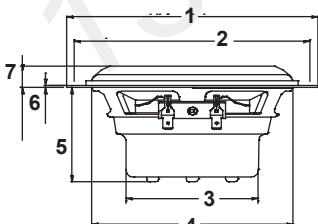
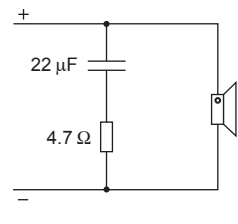
## Installation dimensions and impedance correction circuit

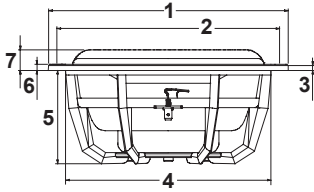
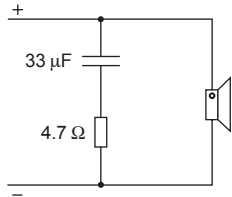
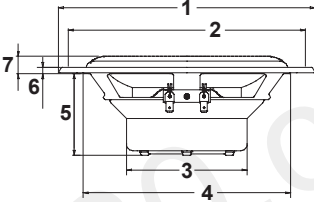
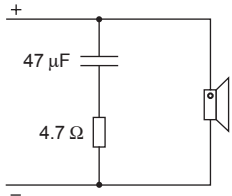
### Tweeter/Midrange

	Installation dimensions (in mm)	Impedance correction circuit
MD 102	 <p>1 Max. <math>\varnothing</math> 62.2                  2 Mounting hole <math>\varnothing</math> 52.1 - 55.5                  3 29.1                  4 3                  5 13.86</p>	
MD 142	 <p>1 Max. <math>\varnothing</math> 121                  2 3 holes <math>\varnothing</math> 4 on <math>\varnothing</math> 110.9                  3 Mounting hole <math>\varnothing</math> 96 (add cut-outs for terminals)                  4 Max. 37.5                  5 7.5                  6 Max. 30</p>	



## Woofers

	Installation dimensions (in mm)	Impedance correction circuit
MW 152	 <ul style="list-style-type: none"> <li>1 Max. Ø 145.5</li> <li>2 6 holes Ø 4.3 on Ø 134.5</li> <li>3 3</li> <li>4 Mounting hole min. Ø 124.5</li> <li>5 63</li> <li>6 4.3</li> <li>7 Max. cone excursion 13</li> </ul>	
MW 162	 <ul style="list-style-type: none"> <li>1 Max. Ø 175</li> <li>2 6 holes Ø 4.3 on Ø 158</li> <li>3 3</li> <li>4 Mounting hole min. 136</li> <li>5 67</li> <li>6 5</li> <li>7 Max. cone excursion 15</li> </ul>	
MW 162 GT	 <ul style="list-style-type: none"> <li>1 Max. Ø 166</li> <li>2 4 holes Ø 7.5 on Ø 155</li> <li>3 Ø 88</li> <li>4 Min. baffle hole Ø 134</li> <li>5 62</li> <li>6 1.5</li> <li>7 Max. cone excursion 14</li> </ul>	

	Installation dimensions (in mm)	Impedance correction circuit
MW 172	 <ul style="list-style-type: none"> <li>1 Max. Ø 200</li> <li>2 6 holes Ø 4.2 on Ø 185.75</li> <li>3 4.2</li> <li>4 Mounting hole min. Ø 172</li> <li>5 77.9</li> <li>6 5.4</li> <li>7 Max. cone excursion 17</li> </ul>	
MW 182	 <ul style="list-style-type: none"> <li>1 Max. Ø 239</li> <li>2 6 holes Ø 4.5 on Ø 219</li> <li>3 Ø 113</li> <li>4 Mounting hole min. Ø 195</li> <li>5 75</li> <li>6 5.9</li> <li>7 Max. cone excursion 16</li> </ul>	

## Esotec systems overview



### Two-way systems

	Bass	Mid	High	Crossover
System 222	MW 152	–	MD 102	X 252
System 242	MW 162	–	MD 102	X 252
System 242 GT	MW 162 GT	–	MD 102	X 252



### Three-way systems

	<b>Bass</b>	<b>Mid</b>	<b>High</b>	<b>Crossover</b>
System 342	MW 162	MD 142	MD 102	X 362
System 362	MW 172	MD 142	MD 102	X 362

## Connecting the crossover

### 2-way crossover X 252

Terminal label		Connections
1		Amplifier
2		
3		Woofers
4		
5		Tweeter
6		
7		
8		

### 1. To connect the woofer

- ▶ Connect terminal **3** to the **+** terminal of the woofer.
- ▶ Connect terminal **4** to the **-** terminal of the woofer.

### 2. To connect the tweeter

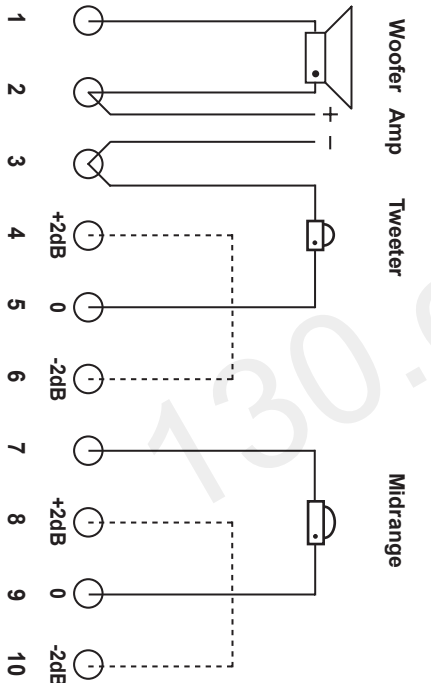
The terminals **5**, **6** and **7** provide an adjustment possibility of the sound level. This makes it possible to adjust the level according to the placement of the speaker in the car and to your personal preference.

- ▶ Connect terminal **5** or **6** or **7** to the **+** terminal of the tweeter:
  - just use one of the terminals **5**, **6** or **7**
  - start with terminal **6** for a first setup
  - use terminal **5** to **increase** sound pressure level by 2 dB
  - use terminal **7** to **decrease** sound pressure level by 2 dB
- ▶ Connect terminal **8** to the **-** terminal of the tweeter.

### 3. To connect the power amplifier

- ▶ Connect terminal **1** to the **+** terminal of the power amplifier.
- ▶ Connect terminal **2** to the **-** terminal of the power amplifier.

### 3-way crossover X 362

Terminal label	Connections
 <p>The diagram shows a 3-way crossover with three main sections: Woofer Amp, Tweeter, and Midrange. Each section has two terminals (1 and 2 for Woofer, 4 and 5 for Tweeter, 7 and 8 for Midrange) and a common ground terminal (3, 6, 9). Terminal 3 is the negative terminal for the Woofer Amp. Terminals 4, 5, and 6 are the positive terminals for the Tweeter, with +2dB, standard (0), and -2dB settings respectively. Terminals 7, 8, and 9 are the positive terminals for the Midrange, with -2dB, +2dB, and standard (0) settings respectively. Dashed lines indicate the internal crossover network connections between these terminals.</p>	<p><b>1</b> To woofer: – terminal</p> <p><b>2</b> To woofer: + terminal To power amplifier: + terminal</p> <p><b>3</b> To power amplifier: – terminal To tweeter: – terminal</p> <p><b>4</b> To tweeter: + terminal, +2dB</p> <p><b>5</b> To tweeter: + terminal, standard</p> <p><b>6</b> To tweeter: + terminal, –2dB</p> <p><b>7</b> To midrange: – terminal</p> <p><b>8</b> To midrange: + terminal, +2dB</p> <p><b>9</b> To midrange: + terminal, standard</p> <p><b>10</b> To midrange: + terminal, –2dB</p>

### 1. To connect the woofer

- ▶ Connect terminal **1** to the – terminal of the woofer.
- ▶ Connect terminal **2** to the + terminal of the woofer.

### 2. To connect the tweeter

The terminals **4**, **5** and **6** provide an adjustment possibility of the sound level. This makes it possible to adjust the level according to the placement of the speaker in the car and to your personal preference.

- ▶ Connect terminal **3** to the – terminal of the tweeter.
- ▶ Connect terminal **4** or **5** or **6** to the + terminal of the tweeter.
  - just use one of the terminals **4**, **5** or **6**
  - start with terminal **5** for a first setup
  - use terminal **4** to **increase** sound pressure level by 2 dB
  - use terminal **6** to **decrease** sound pressure level by 2 dB

### 3. To connect the midrange

The terminals **8**, **9** and **10** provide an adjustment possibility of the sound level. This makes it possible to adjust the level according to the placement of the speaker in the car and to your personal preference.

- ▶ Connect terminal **7** to the – terminal of the midrange.
- ▶ Connect terminal **8** or **9** or **10** to the + terminal of the midrange.
  - just use one of the terminals **8**, **9** or **10**
  - start with terminal **9** for a first setup
  - use terminal **8** to **increase** sound pressure level by 2 dB
  - use terminal **10** to **decrease** sound pressure level by 2 dB

### 4. To connect the power amplifier

- ▶ Connect terminal **2** to the + terminal of the power amplifier.
- ▶ Connect terminal **3** to the – terminal of the power amplifier.



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E S O T E C

High-End Mobile Loudspeaker Systems

**Dynaudio A/S**, 8660 Skanderborg, Denmark

Sales & Marketing

**Dynaudio International GmbH**, Ohepark 2, 21224 Rosengarten, Germany, Phone +49 - 4108 - 4180 - 0