



i7

COAXIAL

USER MANUAL

MADE IN GERMANY

Congratulations!

Dear Customer,

Congratulations on your purchase of this high-quality product.

HELIX COMPOSE highlights best quality, excellent manufacturing and state-of-the-art sound quality.

Thanks to more than 30 years of experience in research and development of audio products HELIX COMPOSE sets new standards in the car audio speaker market.

We wish you many hours of enjoyment with your new HELIX COMPOSE components.

Yours

AUDIOTEC FISCHER Team

General instructions

General instructions for installing HELIX loudspeakers

To prevent damage to the speakers and possible injury, read this manual carefully and follow all installation instructions. This product has been checked for proper function prior to shipping and is guaranteed against manufacturing defects.

For a proper performance and to ensure full warranty coverage, we strongly recommend to get this product installed by an authorized HELIX dealer.

If you choose to perform your own installation read the following information and precautions carefully.

Failure to follow the stated precautions may result in personal injury and / or damage to the audio system or vehicle.

1. Always make sure that the speaker will fit into the intended mounting location and that there is adequate depth for the magnet system.
2. Check for adequate space between speaker and window, window crank, power window mechanism, seat, rear deck torsion bars, and other items which may interfere with the speaker's mounting. This is very important if any hole cutting is required. Detailed size information is indicated in the dimension section of this manual. Take care that the mounting surface is flat and free from all obstructions.
3. Ensure that the loudspeakers are correctly connected in polarity. Exchanging plus and minus may result in significant loss of sound quality. The positive leads of the loudspeakers are marked red.
4. Make sure that all speaker wiring is fully protected from cutting or wear at sharp edges, which can lead to short circuits that may damage your head unit, amplifier and / or speaker system.

5. Verify that all connection wires are long enough in order to avoid any mechanical stress on the wires or the connectors.
6. Make sure that all components are mounted properly.
7. Do not mount the components where water may splash on them.
8. The quality of the installation has a significant effect on the overall performance of the speaker system. Treat each installation step with a high degree of attention.
9. Avoid low frequency cancellation caused by air leakage between the speaker basket and the mounting surface (e.g. mounted on a bended or uneven surface or mounted in an oversized hole).
10. Mounting panel reinforcement may be necessary in some cases in order to ensure a stable, torsion-free and even surface. This can be achieved by mounting the speaker on a metal, plastic or wooden sub-baffle behind the body or door panel. Consult an installation specialist for further advices.
11. In most cases you can use the original speaker mounting locations in the doors, A-pillars, body panels or the rear deck. If these are not available you have to prepare your own secure installation place. Due to their structural integrity and accessibility the precut mounting holes should be used whenever possible. Information on a proper mounting can be found in the section "Installation" of this manual.

IMPORTANT: Never cut any metal that is an integral part of an automobile's safety or structural car body.

We strongly recommend that you operate the complete audio system at low volume before final installation. So you can check whether each speaker is working before securing the loudspeakers into their mounting locations.

Find your composition

Go to www.audiotec-fischer.com/compose to explore the whole HELIX COMPOSE platform

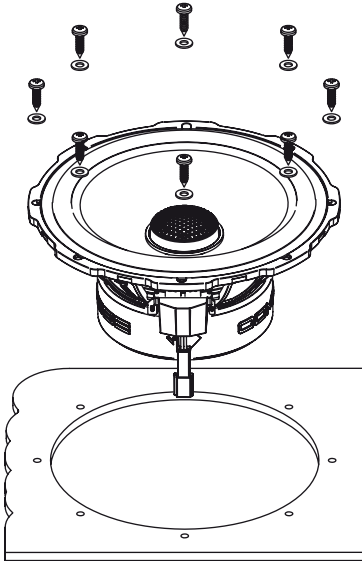


Installation

Mounting Ci7 C165.2FM-S3

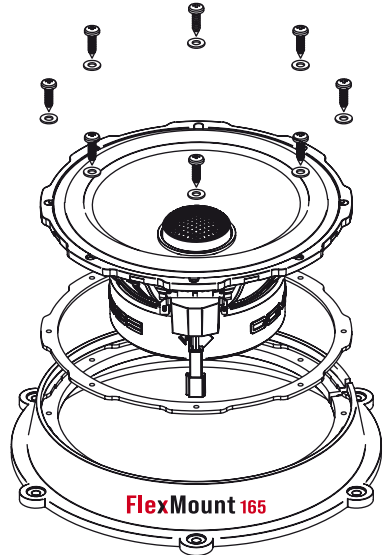
Option a:

Universal mounting



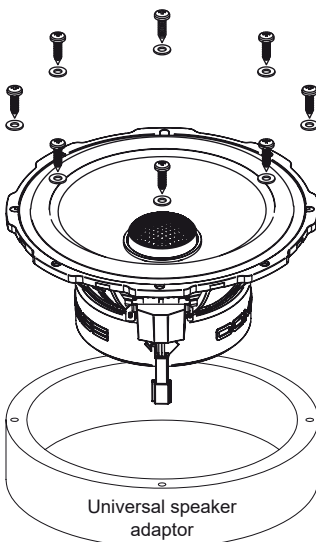
Option b:

Professional integration with optionally available **FlexMount 165** car-specific adaptor*

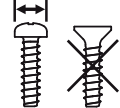


Option c:

Mounting with universal mounting adaptor



max.
8 mm



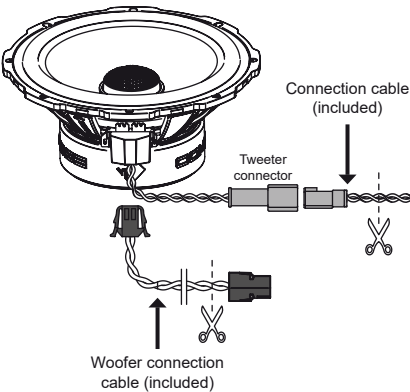
Attention: To avoid damage to the speakers, do not use countersunk screws and do not overtighten the screws!

Installation

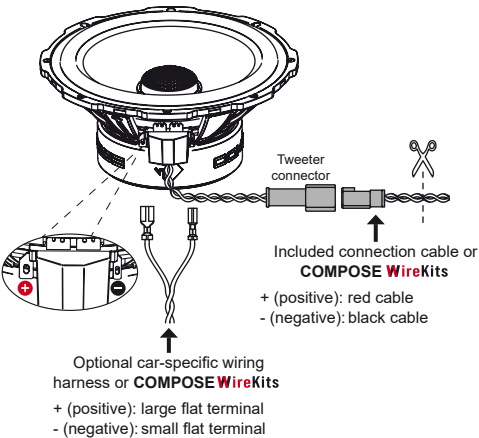
Wiring

Option a: Universal connection, e.g. in active applications

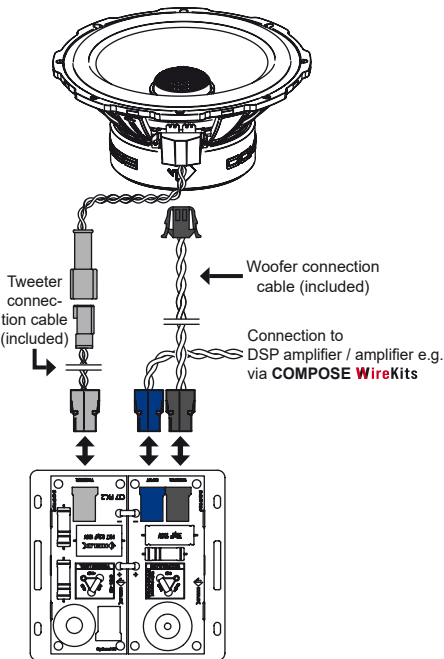
Cut off the plugs of the enclosed tweeter and woofer connection cables and connect them to the DSP amplifier / amplifier.



Option b: Universal connection to the tweeter connector and blade terminals via optional car-specific harness or **COMPOSE WireKits**, e.g. in active applications



Option c: Connection to HELIX COMPOSE i7 Flex-Crossover (optionally available)



ATTENTION: In active configuration it is essential to set a highpass filter in the preconnected DSP or DSP amplifier. Alternatively, the external crossover Ci7 FX-UNI.2 must be used to prevent damage to the tweeter.

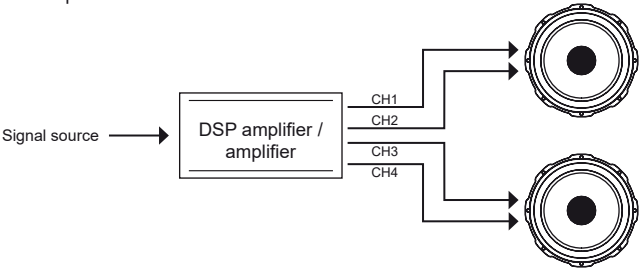
Recommended crossover frequencies for the highpass of the tweeter

Slope	Minimum crossover frequency
6 dB/Octave	> 4.000 Hz
12 dB/Octave	> 3.000 Hz
24 dB/Octave	> 2.500 Hz

Ensure that all components are correctly connected in polarity, i.e. plus to plus and minus to minus. The positive leads of the loudspeaker system are marked red.

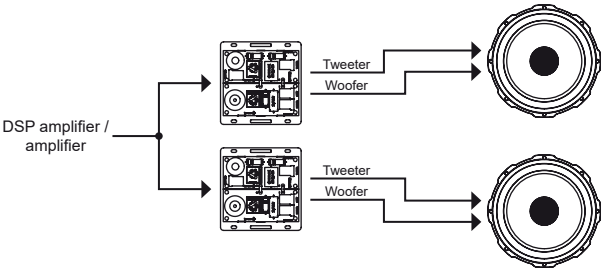
Connection in active configuration

Two amplified DSP channels per speaker are required in active operation.
ATTENTION: In active configuration it is essential to set a **highpass filter for the tweeter** in the preconnected DSP or DSP amplifier.



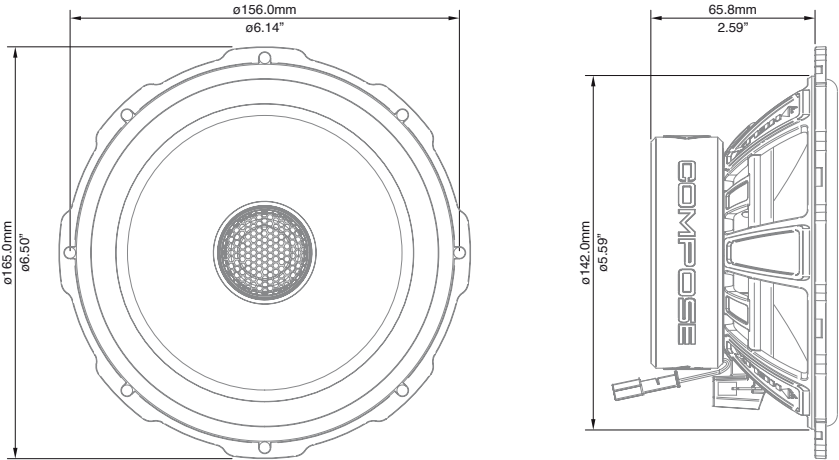
Connection in passive configuration with optional crossover Ci7 FX-UNI.2

The Ci7 C165.2FM-S3 is supplied with all the cables required to connect the crossover. Please refer to the crossover user manual for recommended filter settings.



Dimensions

Ci7 C165.2FM-S3



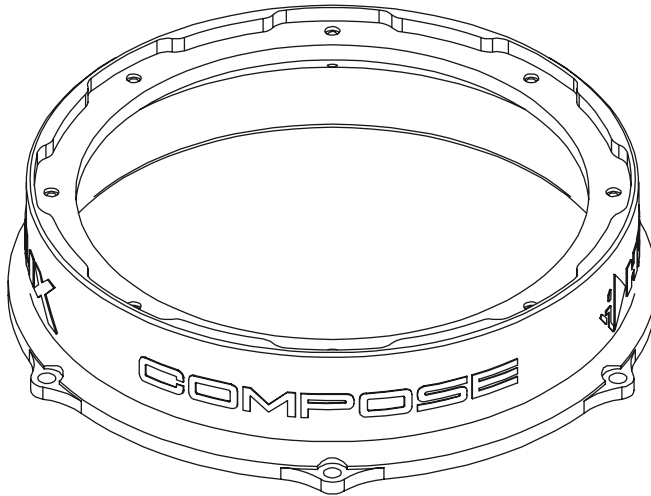
Technical data

		Ci7 C165.2FM-S3
Power RMS / Max.	<i>P</i>	150 / 225 Watts
Frequency response		50 Hz - 30,000 Hz
Impedance	<i>Z</i>	3 Ω
Sensitivity	<i>SPL</i>	92 dB @ 2.83V / 1m 88 dB @ 1W / 1m
Outer diameter (more data see left page)	\emptyset	165.0 mm / 6.50"
Installation diameter (more data see left page)	\emptyset	142.0 mm / 5.59"
Installation depth (more data see left page)		65.8 mm / 2.59"
Woofer		
Impedance	<i>Z</i>	3 Ω
DC resistance	<i>Re</i>	3.0 Ω
Resonance frequency	<i>Fs</i>	59 Hz
Mechanical Q factor	<i>Qms</i>	3.99
Electrical Q factor	<i>Qes</i>	0.64
Total Q factor	<i>Qts</i>	0.55
Compliance	<i>Cms</i>	572 $\mu\text{m/N}$
Equivalent air volume	<i>Vas</i>	13.3 L
Force factor	<i>B*I</i>	4.7 Tm
Cone area	<i>Sd</i>	131 cm^2
Moving mass	<i>Mms</i>	13.0 g
Mechanical resistance	<i>Rms</i>	1.21 kg/s
Voice coil diameter	\emptyset	37 mm
Voice coil winding height		13.4 mm
Max. linear excursion	<i>Xmax</i>	+/- 3.7 mm
Tweeter		
Impedance	<i>Z</i>	4 Ω
Voice coil diameter	\emptyset	20 mm
Features		
Tweeter		Silk dome with coupling volume
Woofer		Ultra high damping (UHD) crafted paper cone, ProConnect terminal and FlexMount 165
Crossover		2-way active: two amplified DSP channels per speaker required 2-way passive: i7 FX-UNI.2 optionally available

FlexMount car-specific adaptors

The **FlexMount 165** car-specific adaptor rings (sold separately) allow a tailored and acoustically optimized adaption of the HELIX COMPOSE Ci7 C165.2FM-S3 to the vehicles original mounting location. Contact your retailer or visit www.audiotec-fischer.com/compose for an up-to-date overview of available adaptors.

FlexMount 165



Looking for the right adaptor ring for your car?
No problem – with our **FlexMount Finder**.



Correct disposal of this product

(Applicable in the European Union and other countries with separate collection systems)

If you want to dispose this product, do not mix it with general household waste. There is a separate collection system for used electronic products in accordance with legislation that requires proper treatment, recovery and recycling. Contact your local government office for details in locating a recycle facility close to you. Proper recycling and waste disposal will help conserve resources and prevent detrimental effects on our health and the environment.

Warranty Disclaimer

The warranty service is based on the statutory regulations. Defects and damage caused by overload or improper handling are excluded from the warranty service. Any return can only take place following prior consultation, in the original packaging together with a detailed description of the error and a valid proof of purchase. Technical modifications, misprints and errors excepted! For damages on the vehicle and the device, caused by handling errors of the device, we can't assume liability. All HELIX speakers are tagged with a CE-Certification mark. Thereby these devices are certified for the use in vehicles within the European Community (EC).

AUDIOTEC
FISCHER

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