



**BOSCH**

# **LB20 Premium Subwoofer**

LB20-SW400-D | LB20-SW400-L



**en**

Installation manual



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# 1 Safety

## 1.1 Suspension



### Warning!

Suspending any object is potentially dangerous and should only be attempted by individuals who have thorough knowledge of the techniques and regulations of suspending objects overhead. Bosch strongly recommends all loudspeakers be suspended taking into account all current national, federal, state, and local laws and regulations. It is the responsibility of the installer to ensure all loudspeakers are safely installed in accordance with all such requirements. When loudspeakers are suspended, Bosch strongly recommends the system be inspected at least once per year or as laws and regulations require. If any sign of weakness or damage is detected, remedial action should be taken immediately. The user is responsible for making sure the wall, ceiling, or structure is capable of supporting all objects suspended overhead. Any hardware used to suspend a loudspeaker not associated with Bosch is the responsibility of others.

### Safety point

As an added safety measure, it is suggested the user install an extra suspension point back to the building structural supports. This safety point should have as little slack as possible (less than 1-inch is preferable).

## 1.2



### Notices

#### Old electrical and electronic appliances

Electrical or electronic devices that are no longer serviceable must be collected separately and sent for environmentally compatible recycling (in accordance with the European Waste Electrical and Electronic Equipment Directive).

To dispose of old electrical or electronic devices, you should use the return and collection systems put in place in the country concerned.

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## 2 Short information

The following table lists products in a family, with CTN (Commercial Type Number) and identifying product name DESCRIPTION.

<b>CTN</b>	<b>Description</b>
LB20-SW400-D	Cabinet subwoofer 2x10" black
LB20-SW400-L	Cabinet subwoofer 2x10" white
UB-10DB	U-bracket for 10" subwoofer black
UB-10DW	U-bracket for 10" subwoofer white
IP-10D-TB	Transformer input 10" subwoofer bk
IP-10D-TW	Transformer input 10" subwoofer wh
IP-10D-CB	Crossover input 10" subwoofer bk
IP-10D-CW	Crossover input 10" subwoofer wh

## 3 Introduction

The LB20-SW400 subwoofer, from Bosch Security Systems, Inc, is a compact, high-performance, dual woofer loudspeaker with outstanding performance for the most demanding professional and commercial sound applications. Designed and engineered for use in background and foreground music, and sound reinforcement applications, the LB20-SW400 subwoofer is the ideal solution for indoor and outdoor applications, such as restaurants, bars, patios, retail, fitness clubs, hospitality, theme parks, leisure venues, and others. Ease of installation, and flexible options for mounting solutions and weather resistance, the LB20-SW400 subwoofer is the perfect solution for a wide variety of surface mount applications.

The LB20-SW400 subwoofer has been carefully engineered to resist outdoor environments, without compromising on performance for indoor applications. The subwoofer is IP54 rated, and its weather-proofing is complemented with exceptional cabinet and grille resistance against sun, salt and moisture. For the toughest weather conditions, the IP rating of the LB20-SW400 subwoofer can be upgraded to IP65, using the included port plug accessory.

Read through this manual to familiarize yourself with the safety information, features, and applications before you use these products.

### 3.1 System features

- Two 10 inch high-excursion woofers
- Carefully engineered for outdoor environments (IP54 and IP65), without compromising performance
- 400 W power handling provides for 120 dB maximum SPL (126 dB peak)
- 70/100 V transformer input panel accessory available
- Crossover input panel accessory available

### 3.2 Packing list

	Quantity	Component
A	1	Subwoofer
B	5	Mounting point covers
C	1	Logo (spare)
D	1	Allen wrench
E	1	Weather input cover
F	8	Screws for weather input cover
G	2	IP65 port covers
H	12	IP65 port cover screws
I	1	Installation manual

Tab. 3.1: Components list

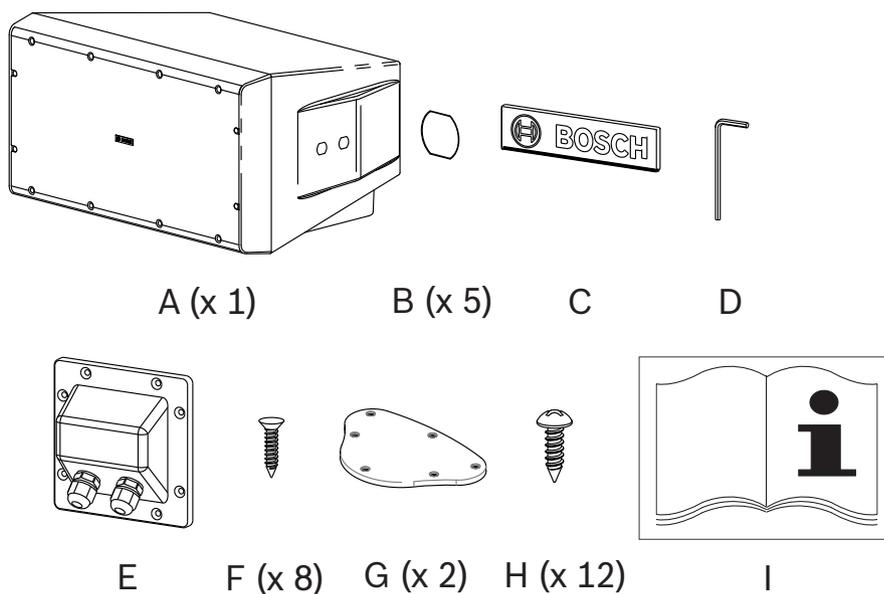


Figure 3.1: Components

### 3.3 Product information

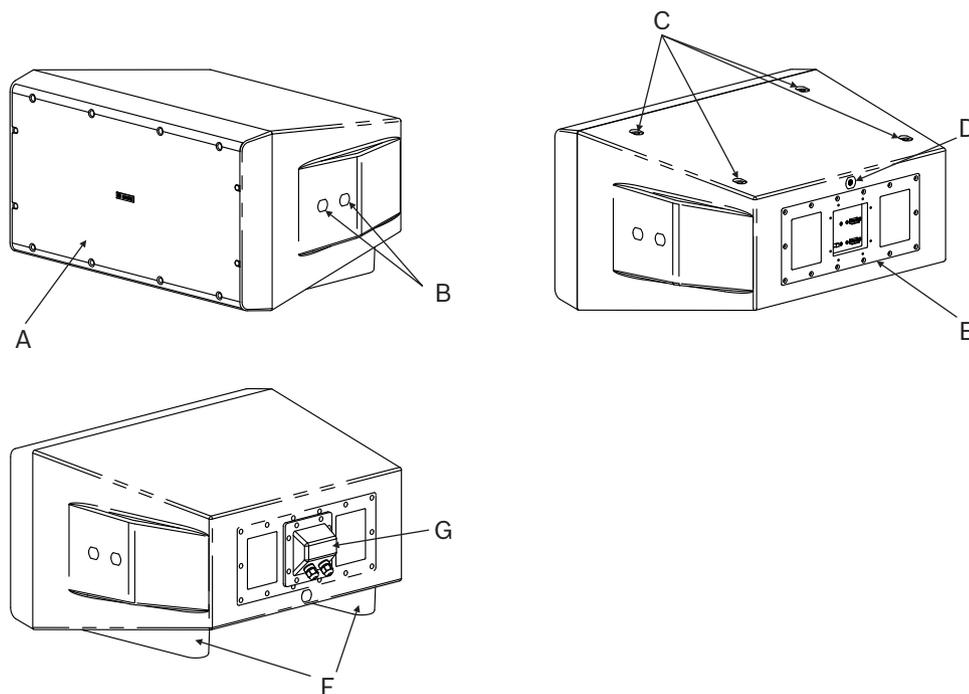


Figure 3.2: Product information (subwoofer on the right is shown upside down)

Item	Description
A	Grille
B	U-bracket mounting points
C	M10 flying points
D	M10 safety point
E	Input panel
F	Subwoofer feet
G	Weather input cover

Tab. 3.2: Product information

## 4 Installation

For safety, ensure the mounting surface supports more than the weight of the speaker. Use only industry-accepted fasteners and mounting methods when mounting the loudspeaker. Consult an expert if you are unsure.



### Caution!

It is the installer's responsibility to determine and use the proper mounting hardware for the wall construction type.

Disregarding this caution could result in damage to the product and personal injuries may occur.

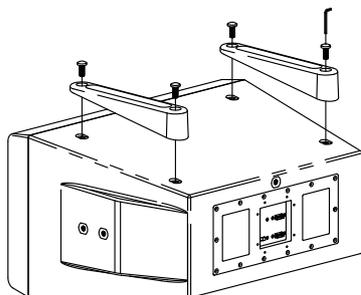
### Safety point

As an added safety measure, it is suggested the user install an extra suspension point back to the building structural supports. This safety point should have as little slack as possible (less than 1-inch is preferable).

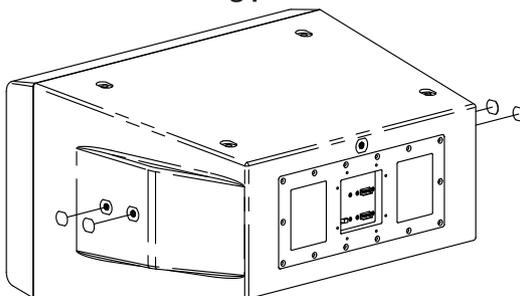
### 4.1 Suspending the subwoofer

To **suspend the subwoofer**, do the following:

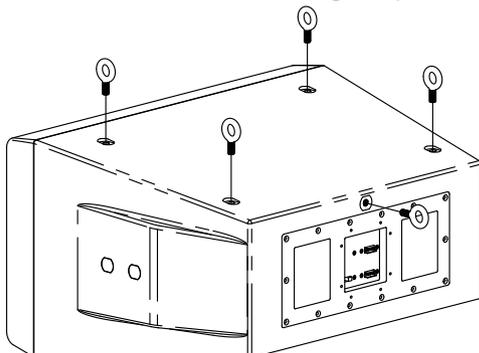
1. Turn the **subwoofer** upside down.
2. Remove the two **subwoofer feet** with the supplied Allen wrench.



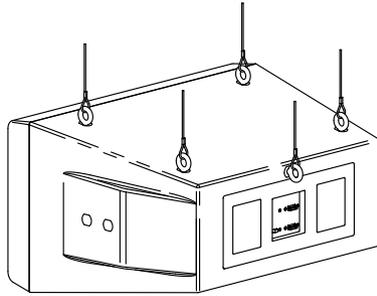
3. Attach the **mounting point covers** on the U-bracket mounting points.



4. Rotate the **logo** by replacing it, as shown in the *Replacing the logo* section.
5. Install four **10-mm rated forged eyebolts** (not included) into the threaded fly points.



6. Install a **10-mm rated forged eyebolt** (not included) into the safety point.
7. Suspend the **subwoofer** from the eyebolts using rated fittings and steel cable.



8. Secure the **subwoofer** from the safety eyebolt using rated fittings and steel cable.

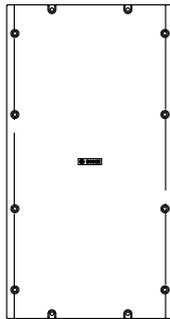
#### See also

- *Replacing the logo, page 10*

## 4.2

### Replacing the logo

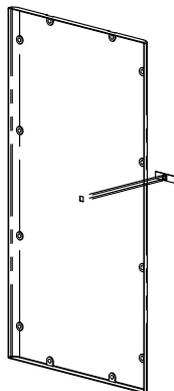
An additional logo is included, vertical installation is shown.



To **replace the logo**, do the following:

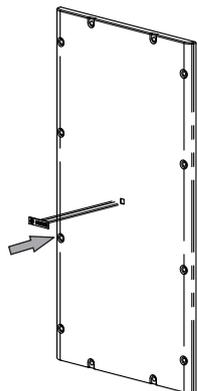
1. Remove the existing **logo**.
2. Clean the **surface** with alcohol.
3. Align the square guide on the rear of the **logo** with the square guide on the grille.

*This view is showing the grille and the logo from the rear.*



4. Remove the **paper backing**.

5. Insert the **logo**.  
*Press firmly to ensure the logo is applied.*



### 4.3 Installing the IP65 port covers

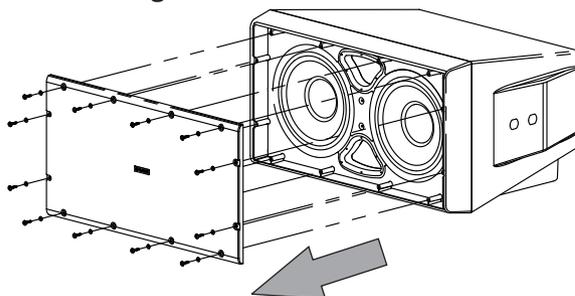
To **install the IP65 port covers**, do the following:



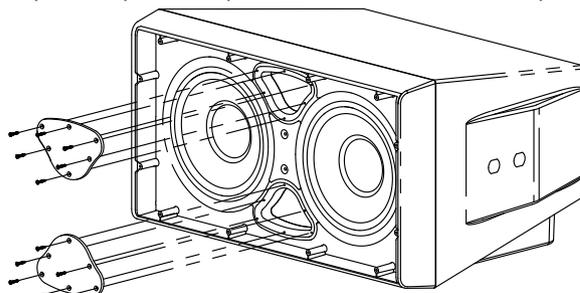
#### **Caution!**

Ensure you securely tighten the screws for the IP65 port cover to prevent water leaks. If the IP65 port cover is not properly installed, you may cause damage to the subwoofer.

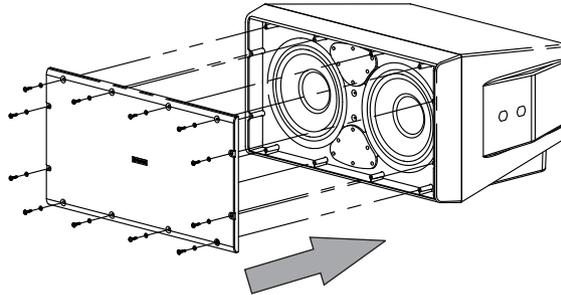
1. Remove the **grille**.



2. Install the **IP65 port cover**.  
*Repeat step this step to install the second IP65 port cover.*



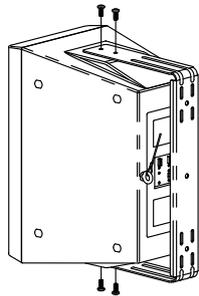
3. Reinstall the **grille**.



## 4.4 Installing the U-bracket - optional accessory

To **install the U-bracket**, do the following:

1. Install the **four screws** (provided) into the U-bracket mounting points.

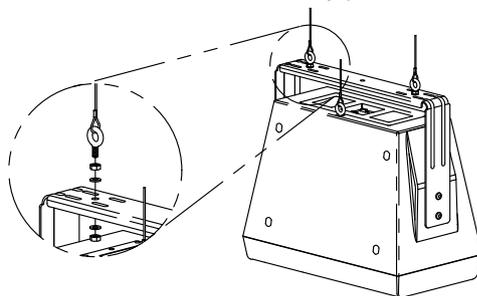


2. Install a **10-mm rated forged eyebolt** (not included) into the safety point.
3. Secure the **subwoofer** from the safety eyebolt using a rated fittings and steel cable.

### Suspending the subwoofer in a down-fire position using the U-bracket

To **suspend the subwoofer in a horizontal down-fire position**, do the following:

1. Install **two 10-mm rated forged eyebolts using lock washers** (eyebolts and lock washers are not included) into the fly points on the U-bracket.

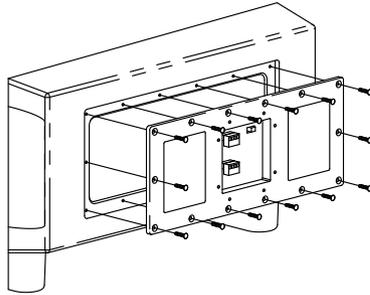


2. Install a **10-mm rated forged eyebolt** (not included) into the safety point.
3. Suspend the **subwoofer** from the eyebolts using rated fittings and steel cable.
4. Secure the **subwoofer** from the safety eyebolt using a rated fittings and steel cable.

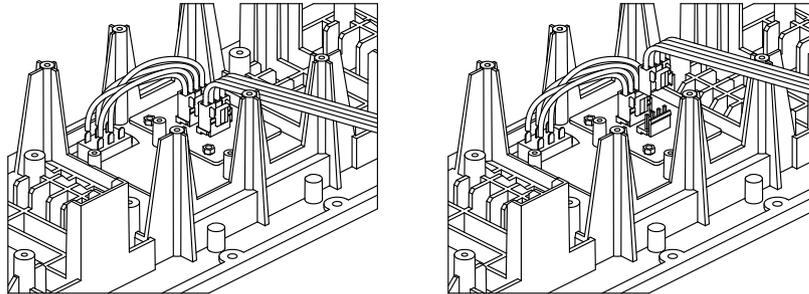
## 4.5 Installing the transformer input panel - optional accessory

To **install the transformer input panel**, do the following:

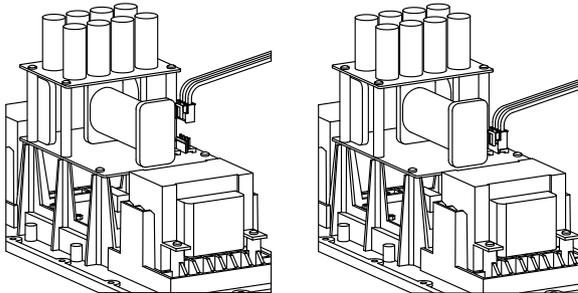
1. Remove the **standard input panel**.



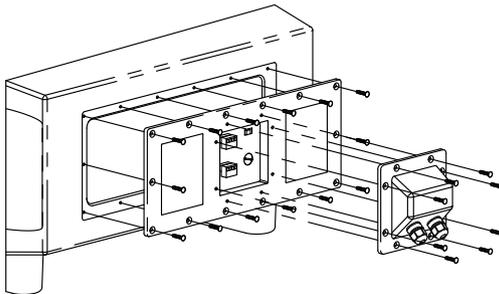
2. Disconnect the **standard input panel**.



3. Connect the **transformer input panel**.



4. Install the **transformer input panel**.

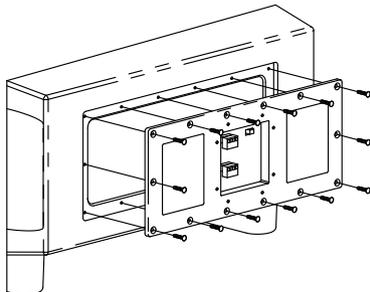


5. Install the **weather cover**, if applicable.

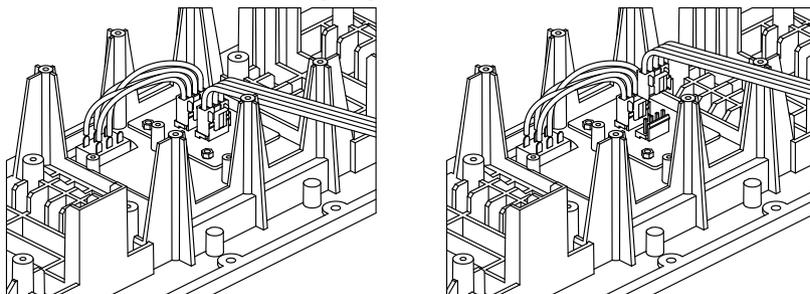
## 4.6 Installing the crossover input panel - optional accessory

To **install the crossover input panel**, do the following:

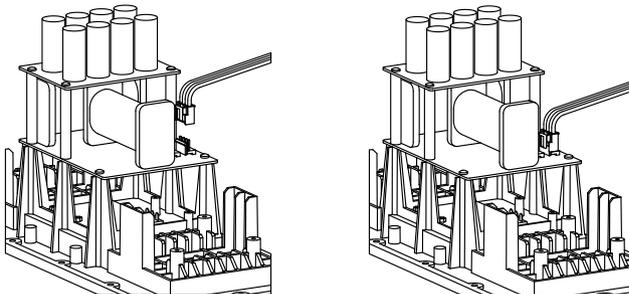
1. Remove the **standard input panel**.



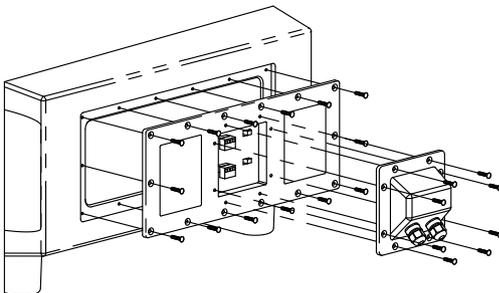
2. Disconnect the **standard input panel**.



3. Connect the **crossover input panel**.



4. Install the **crossover input panel**.



5. Install the **weather cover**, if applicable.

## 5 Wiring

### 5.1 Standard input panel

#### 5.1.1 Mono operation

**Caution!**

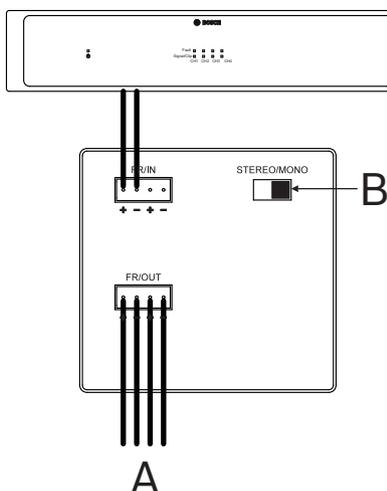
For mono operation only use either the first two pins or the last two pins of the FR/IN connector. Do not wire the amplifier to all four pins.

May cause damage to the amplifier if connected improperly.

The amplifier, the subwoofer, and the speakers are wired for MONO operation. It is highly advisable to support the unit while these connections are being made. Connect all wires to the speaker at the back terminal plate observing proper polarity of the connections. After all connections are made test the complete system operation.

**A:** Full-range parallel out

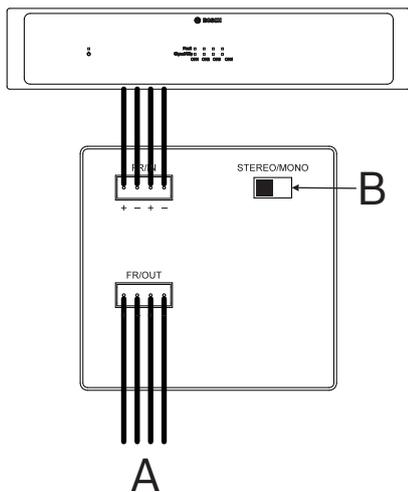
**B:** STEREO/MONO switch set to mono.



### 5.1.2 Stereo operation

The amplifier, the subwoofer, and the speakers are wired for STEREO operation. It is highly advisable to support the unit while these connections are being made. Connect all wires to the speaker at the back terminal plate observing proper polarity of the connections. After all connections are made test the complete system operation.

- A:** Full-range parallel out
- B:** STEREO/MONO switch set to stereo.



## 5.2 Transformer input panel - optional accessory

### 5.2.1 Mono operation



**Caution!**

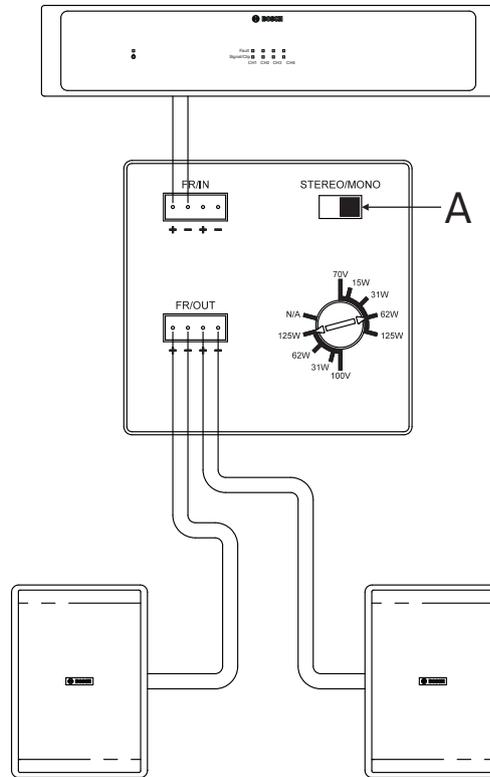
For mono operation only use either the first two pins or the last two pins of the FR/IN connector. Do not wire the amplifier to all four pins.

May cause damage to the amplifier if connected improperly.

The amplifier, the subwoofer, and the speakers are wired for MONO operation. It is highly advisable to support the unit while these connections are being made. Connect all wires to the speaker at the back terminal plate observing proper polarity of the connections. After all connections are made test the complete system operation.

The speakers must be set to 70V/100V mode.

**A:** STEREO/MONO switch set to mono.



**Figure 5.1: Mono configuration 1**

A: STEREO/MONO switch set to mono.

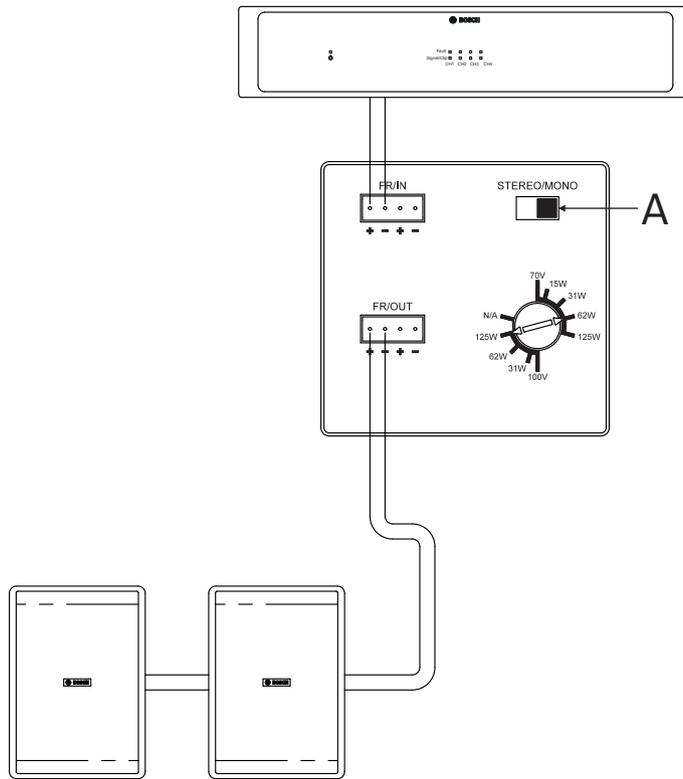


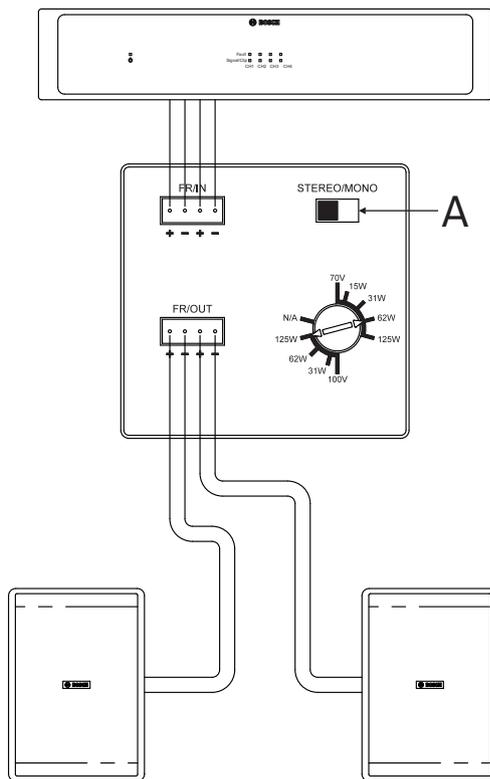
Figure 5.2: Mono configuration 2

### 5.2.2 Stereo operation

The amplifier, the subwoofer, and the speakers are wired for STEREO operation. It is highly advisable to support the unit while these connections are being made. Connect all wires to the speaker at the back terminal plate observing proper polarity of the connections. After all connections are made test the complete system operation.

The speakers must be set to 70V/100V mode.

**A:** STEREO/MONO switch set to stereo.



## 5.3 Crossover input panel - optional accessory

### 5.3.1 Mono operation



#### Caution!

For mono operation only use either the first two pins or the last two pins of the FR/IN connector. Do not wire the amplifier to all four pins.

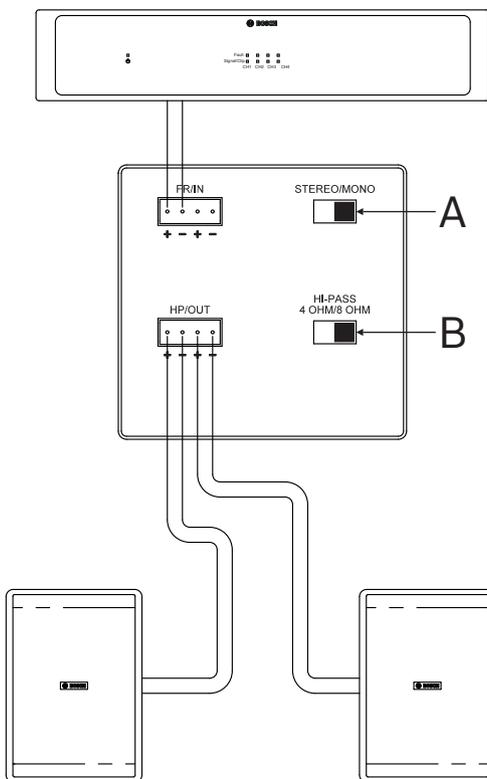
May cause damage to the amplifier if connected improperly.

The amplifier, the subwoofer, and the speakers are wired for MONO operation. It is highly advisable to support the unit while these connections are being made. Connect all wires to the speaker at the back terminal plate observing proper polarity of the connections. After all connections are made test the complete system operation.

The option shown is using 8 ohm speakers.

**A:** STEREO/MONO switch set to mono.

**B:** HI-PASS 4 OHM/8 OHM switch set to 8 ohm.



### 5.3.2 Stereo operation

The amplifier, the subwoofer, and the speakers are wired for STEREO operation. It is highly advisable to support the unit while these connections are being made. Connect all wires to the speaker at the back terminal plate observing proper polarity of the connections. After all connections are made test the complete system operation.

Both options shown are using 8 ohm speakers.

- A: STEREO/MONO switch set to stereo.
- B: HI-PASS 4 OHM/8 OHM switch set to 8 ohm.

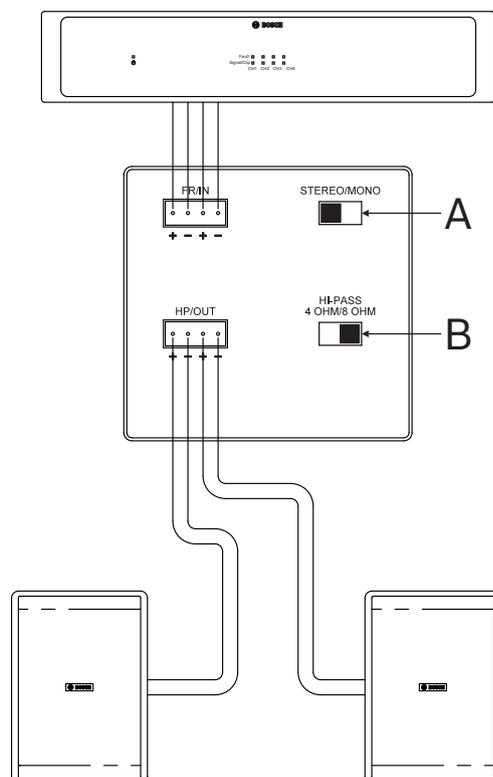


Figure 5.3: Stereo configuration 1

- A: STEREO/MONO switch set to stereo.
- B: HI-PASS 4 OHM/8 OHM switch set to 4 ohm.

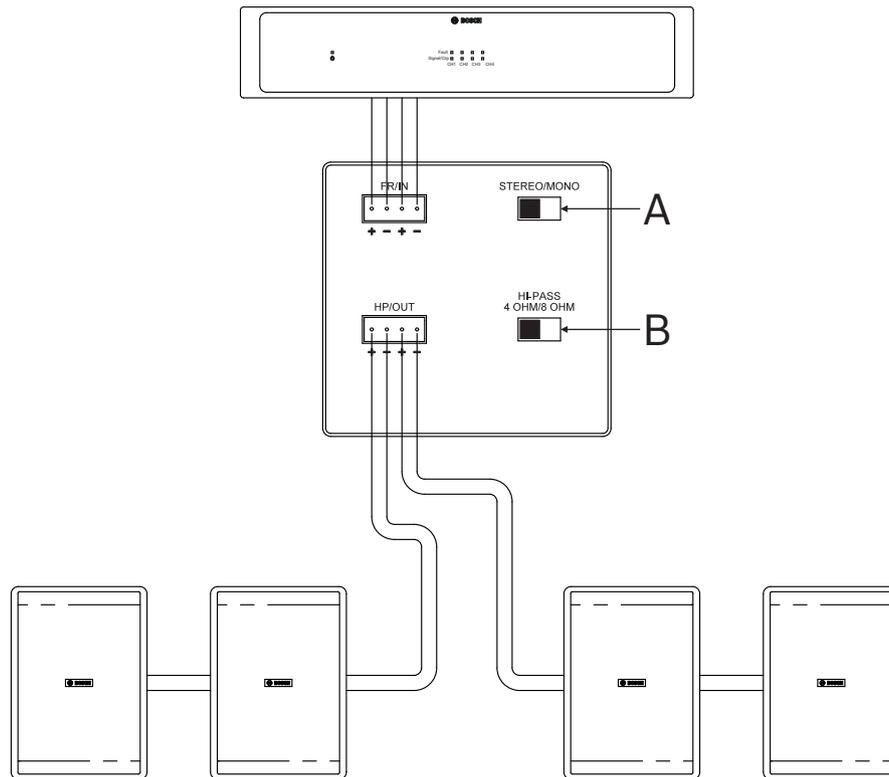


Figure 5.4: Stereo configuration 2

## 6 Troubleshooting

Problem	Possible Causes	Action
No Sound	Amplifier	Connect a known working test speaker to the amplifier outputs. If there is no sound, check all electronics are on, the signal routing is correct, the source is active; the volume is turned up, and so on. Correct/Repair/Replace as necessary. If there is sound, the problem is in the wiring.
	Wiring	Verify you have connected the correct wire pairs to the amplifier. Play something at low level through the amplifier (for example, from a CD player or tuner). Connect the test speaker in parallel with the malfunctioning line. If the sound has gone or is very weak, the line has a short in it (possibly a severe scrape, pinch, or staple puncture). If the sound level is normal the wire is open (possibly a cut wire or missed connection). Using the test speaker, move down the line and test each connection/junction until you find the problem and correct it. Observe proper polarity.
		Verify you have the inputs and outputs connected to the correct wires. If the subwoofer input panel is not correctly wired, there will be little or no sound. Observe proper polarity.
Poor Low-Frequency Response	Speakers Wired Out-of-Polarity	When two speakers are connected out of polarity (out of phase), the low frequencies will cancel each other acoustically. Carefully observe the wire markings or tracers on your speaker wires. Verify the amplifier (+) terminal is connected to the red speaker terminals and the amplifier (-) terminal is connected to the black speaker terminals.
	Improperly Wired Subwoofer Panel	Using a test speaker as described above, verify all amplifier and speaker wires are connected to their proper terminals with the correct polarity. Reversing just one set of amplifier wires can cut out all bass output from the subwoofer.
Intermittent Output such as, Crackling or Distortion	Faulty Connection	Check all connections at amplifier and speakers to ensure they are clean and tight. If the problem persists, it may be in the amplifier or wiring. See other actions above.
Constant Noise such as Buzzing, Hissing, Humming	Defective Amplifier or other Electronic Device	If the noise is present but no program material is playing, the likely cause is the signal chain in the electronics. Evaluate each component as necessary to isolate the problem.
	Poor System Grounding or Ground Loop	Check and correct the system grounding, as required.

## 7 Technical data

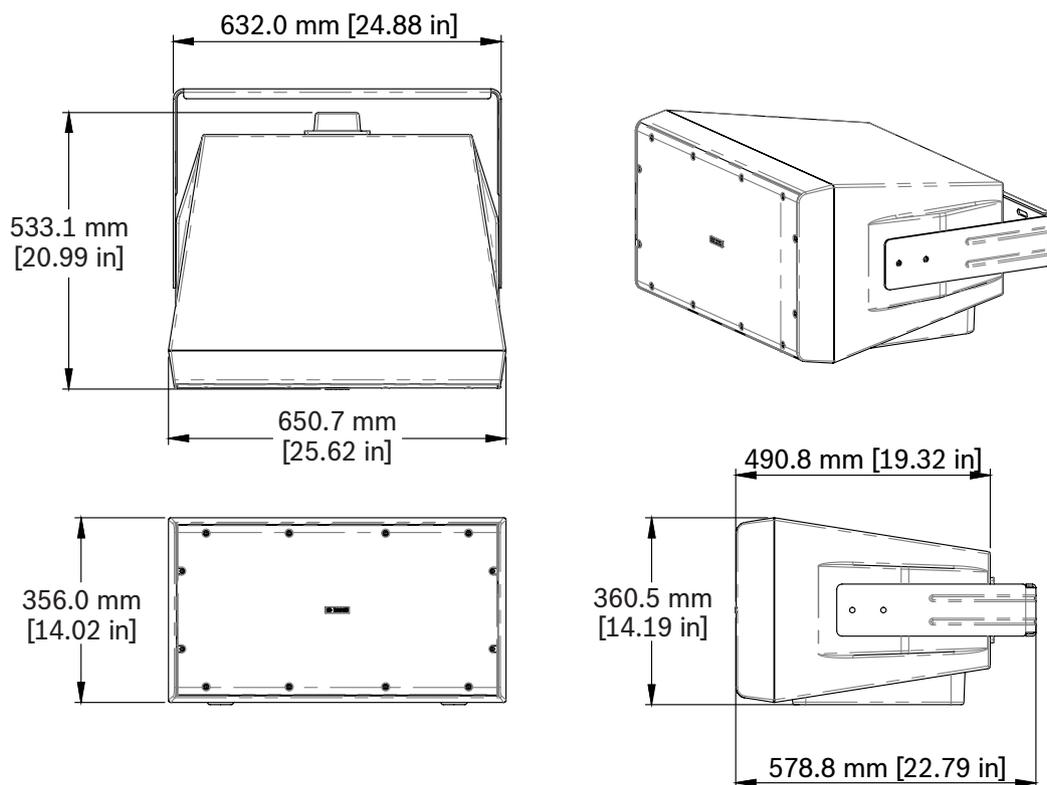
Frequency response (-10 dB) <sup>1</sup> :	33 Hz - 500 Hz
Sensitivity <sup>2</sup> :	94 dB
Max. SPL (Calculated):	120 dB (126 dB Peak)
Power handling:	400 W (1600 W Peak) Continuous Pink Noise (100 hours)
Low Z:	Yes
Nominal impedance:	(2) 8 Ω (stereo mode); (1) 4 Ω (mono mode)
Recommended High-Pass:	40 Hz (24 dB/octave)
Input transformer (70 V/100 V):	Optional accessory
Transformer taps:	Optional accessory
LF transducer:	Two 10 inch (254 mm)
Connectors:	Two removable locking 4-pin connector (Euroblock) - Input and output. Max. wire size 12 AWG (2.05 mm).
Environmental:	IP-54 (per IEC-60529); IP-65 with port covers
Color:	Black (RAL 9004) or white (RAL 9003)
Dimensions (H x W x D) <sup>3</sup> :	356 mm x 651 mm x 491 mm (14.0 in x 25.6 in x 19.3 in)
Net weight <sup>3</sup> :	17.9 kg (39.5 lb)
Shipping weight:	21 kg (46.3 lb)
Included hardware:	(2) Subwoofer feet, Allen wrench, weather input cover, (8) screws for the weather input cover, (2) IP65 port covers, (12) IP65 port cover screws
Packaged quantity:	1

<sup>1</sup>Half-space (wall mounting).

<sup>2</sup>Half-space (on wall) averaged 50 Hz - 150 Hz, 1 W.

<sup>3</sup>Without U-Bracket.

## 7.1 Dimensions



## 7.2 Frequency response and impedance

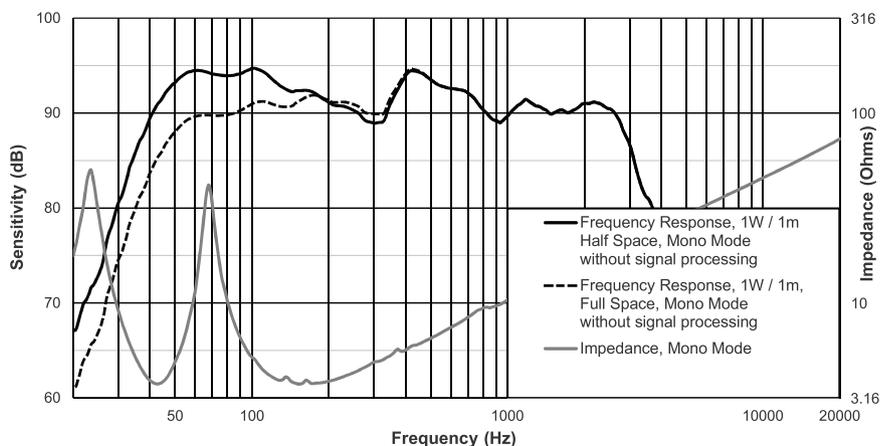


Figure 7.1: Frequency response and impedance

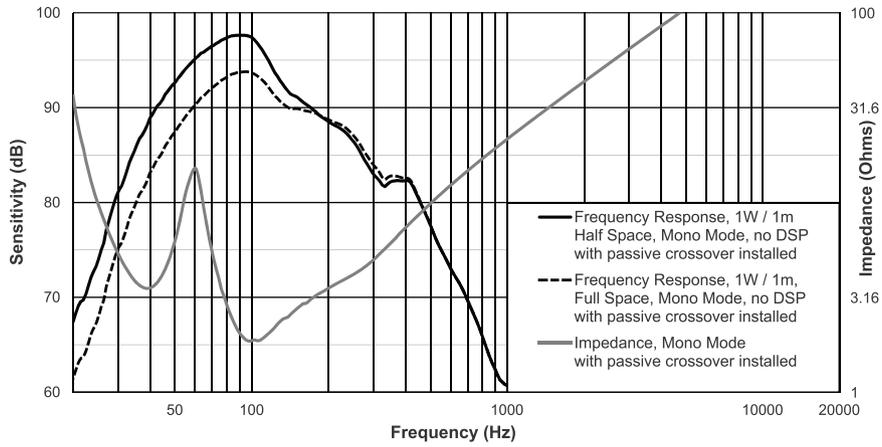
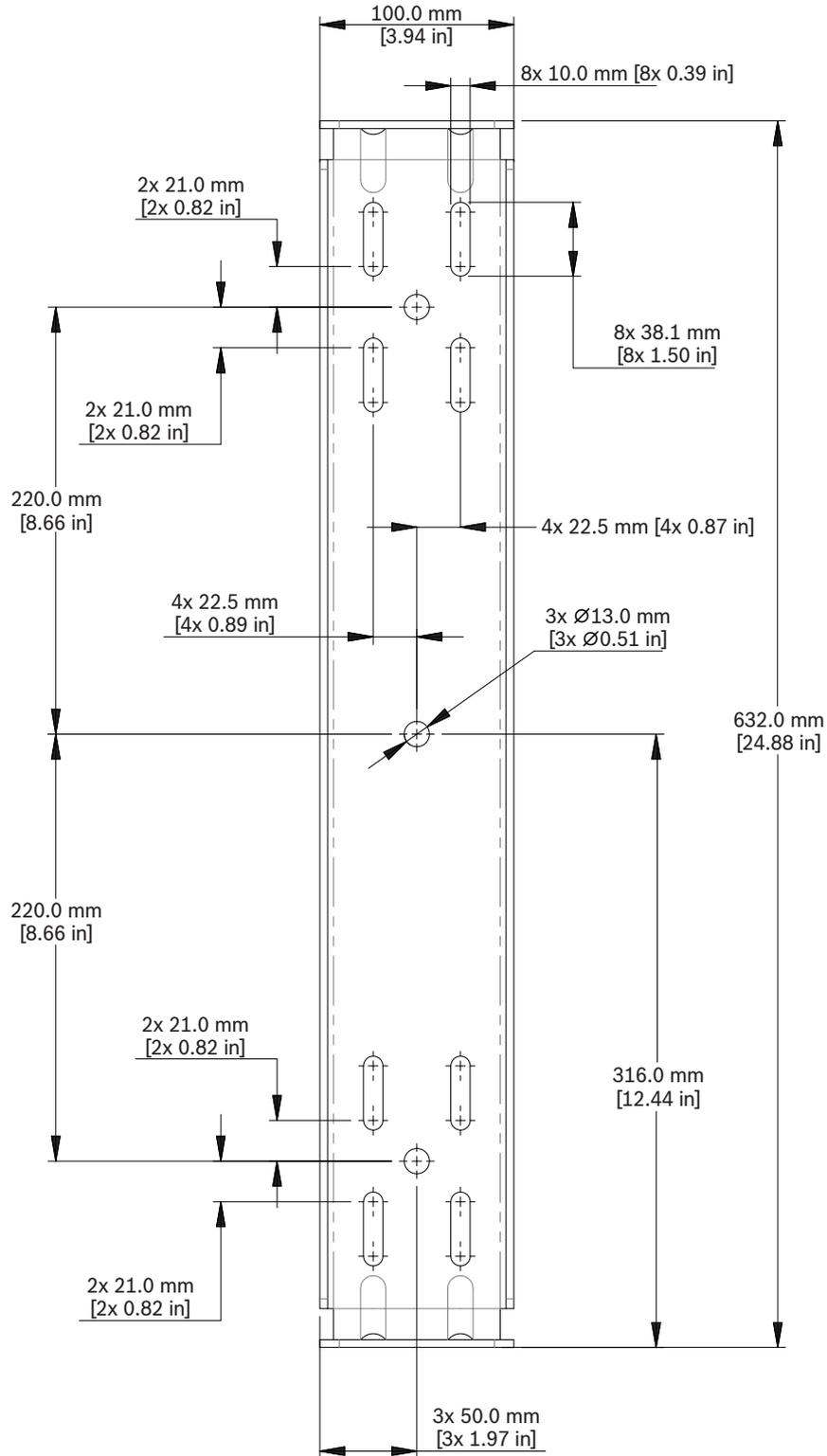


Figure 7.2: Frequency response and impedance with cross-over

# 8 U-bracket dimensions - optional accessory

The U-bracket dimensions are not to scale and are for reference only.





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