

BOSE FreeSpace FS2C In Ceiling Loudspeaker Installation Guide

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BOSE FreeSpace FS2C In Ceiling Loudspeaker



Important Safety Instructions

- Please read and keep all safety and use instructions.
- This product is intended for installation by professional installers only! This document is intended to provide professional installers with basic installation and safety guidelines for this product in typical fixed-installation systems. Please read this document and all safety warnings before attempting installation.
- Do not attempt to service this product yourself. Refer all servicing to authorized service centers, installers, technicians, dealers or distributors. To contact Bose Professional or to find a dealer or distributor near you, visit PRO.BOSE.COM.

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with a dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produces heat.
9. Only use attachments/accessories specified by the manufacturer.

WARNINGS/CAUTIONS



This product contains magnetic material. Consult your physician on whether this might affect your implantable medical device.



Contains small parts which may be a choking hazard. Not suitable for children under age 3.

- This product is intended for indoor use only. • All Bose products must be installed in accordance with local, state, federal and industry regulations. It is the installer's responsibility to ensure installation of the loudspeakers and mounting system is performed in accordance with all applicable codes, including local building codes and regulations. Consult the local authority having jurisdiction before installing this product.
- Unsafe mounting or overhead suspension of any heavy load can result in serious injury or death, and property damage. It is the installer's responsibility to evaluate the reliability of any mounting method used for their application. Only professional installers with knowledge of proper hardware and safe mounting techniques should attempt to install any loudspeaker overhead.
- Do not mount the product in locations where it may be exposed to water or condensation.
- Do not expose this product to dripping or splashing, and do not place objects filled with liquids, such as vases, on or near the product.
- This product is not intended for installation or use in indoor water facility areas (including, without limitation, indoor pools, indoor water parks, hot tub rooms, saunas, steam rooms and indoor skating rinks).
- Do not mount on surfaces that are not sturdy, or that have hazards concealed behind them, such as electrical wiring or plumbing. Ensure the bracket is installed by a qualified professional installer and in accordance with local building codes. • Use only the hardware and accessories included or specified by Bose for use with FreeSpace FS2C loudspeakers. For information on compatible accessories, see the product's technical data sheet at PRO.BOSE.COM.
- Keep the product away from fire and heat sources. Do not place naked flame sources, such as lighted candles, on or near the product.
- Do not make unauthorized alterations to this product.
- Do not expose the loudspeaker or mounting components to any chemical substances that are not specified by Bose, including but not limited to lubricants, cleaning agents, contact sprays, or hydrocarbon-based solvents. Exposure to such substances can lead to degradation of the plastic material, resulting in cracking and creating a falling hazard.
- Clean speakers using only a dry cloth. Do not expose loudspeakers to soap, detergent, mineral oil, alcohol or other cleaning agents or chemicals.

Product Ratings

- Input Voltage: 70V/100V
- Impedance: 16 Ω , 16 W
- Current or Power: (70V): 1W, 2W, 4W, 8W, 16W; (100V): 2W, 4W, 8W, 16W

Regulatory Information

Do not paint or modify factory-applied finishes.



- This product conforms to all applicable EU directive requirements. The complete declaration of conformity can be found at: www.Bose.com/compliance.




- This product conforms to all applicable Electromagnetic Compatibility Regulations 2016 and all other applicable UK regulations. The complete declaration of conformity can be found at: www.Bose.com/compliance.



- This symbol means the product must not be discarded as household waste, and should be delivered to an appropriate collection facility for recycling. Proper disposal and recycling helps protect natural resources, human health and the environment. For more information on disposal and recycling of this product, contact your local municipality, disposal service, or the shop where you bought this product.

China Restriction of Hazardous Substances Table

Names and Contents of Toxic or Hazardous Substances or Elements						
	Toxic or Hazardous Substances and Elements					
Part Name	Lead (Pb)	Mercury (Hg)	Cadmium (Cd)	Hexavalent (CR(VI))	Polybrominated Biphenyl (PBB)	Polybrominated diphenyl ether (PBDE)
PCBs	X	O	O	O	O	O
Metal Parts	X	O	O	O	O	O
Plastic Parts	O	O	O	O	O	O
Speakers	X	O	O	O	O	O
Cables	X	O	O	O	O	O
This table is prepared in accordance with the provisions of SJ/T 11364.						
O: Indicates that this toxic or hazardous substance contained in all of the homogeneous materials for this part is below the limit requirement of GB/T 26572.						
X: Indicates that this toxic or hazardous substance contained in at least one of the homogeneous materials used for this part is above the limit requirement of GB/T 26572.						

Taiwan Restriction of Hazardous Substances Table

Equipment name: FreeSpace FS2C, Type designation: 841154						
	Restricted substances and their chemical symbols					
Unit	Lead (Pb)	Mercury (Hg)	Cadmium (Cd)	Hexavalent chromium (Cr +6)	Polybrominated biphenyls (PBB)	Polybrominated diphenyl ethers (PBDE)
PCBs	—	○	○	○	○	○
Metal Parts	—	○	○	○	○	○
Plastic Parts	○	○	○	○	○	○
Speakers	—	○	○	○	○	○
Cables	—	○	○	○	○	○
<p>Note 1: “○” indicates that the percentage content of the restricted substance does not exceed the percentage of a reference value of presence.</p> <p>Note 2: The “—” indicates that the restricted substance corresponds to the exemption.</p>						

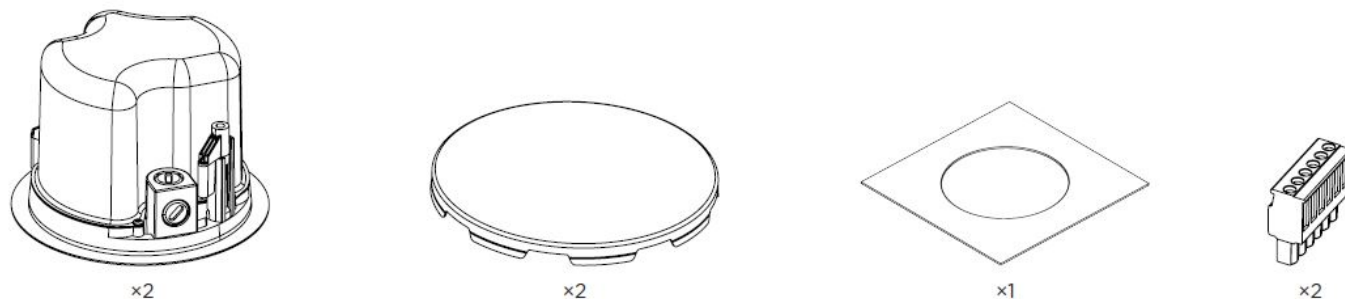
- **Date of Manufacture:** The eighth digit in the serial number indicates the year of manufacture; “7” is 2007 or 2017.
- **China Importer:** Bose Electronics (Shanghai) Company Limited, Part C, Plant 9, No. 353 North Riying Road, China (Shanghai) Pilot Free Trade Zone
- **EU Importer:** Bose Products B.V., Gorslaan 60, 1441 RG Purmerend, The Netherlands
- **Mexico Importer:** Bose de México, S. de R.L. de C.V. , Paseo de las Palmas 405-204, Lomas de Chapultepec, 11000 México, D.F. For importer & service information: +5255 (5202) 3545
- **Taiwan Importer:** Bose Taiwan Branch, 9F-A1, No. 10, Section 3, Minsheng East Road,
- **Taipei City 104, Taiwan. Phone Number:** +886-2-2514 7676
- **UK Importer:** Bose Limited, Bose House, Quayside Chatham Maritime, Chatham, Kent, ME4 4QZ, United Kingdom
- Bose, DesignMax, and FreeSpace are trademarks of Bose Corporation.
- Bose Corporation Headquarters: 1-877-230-5639
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Warranty

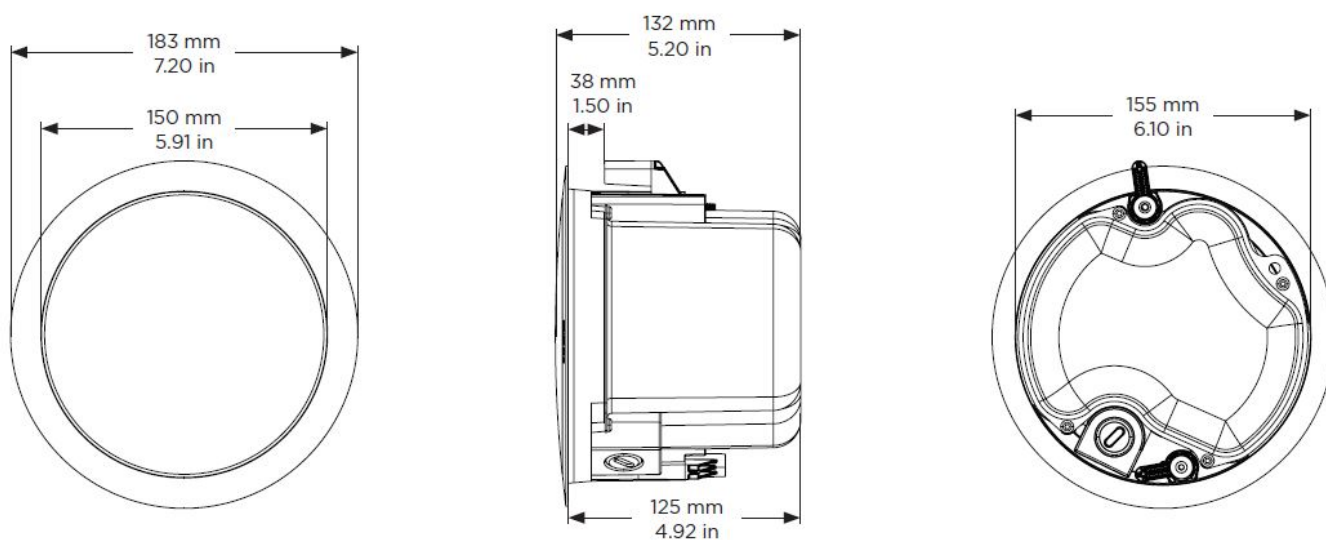
Warranty Information

- This product is covered by a limited warranty.
- For warranty details, visit [PRO.BOSE.COM](https://www.pro.bose.com).

Package Contents



Product Dimensions



Technical Specifications

For additional specifications, see the FreeSpace FS2C technical data sheet at [PRO.BOSE.COM](https://www.pro.bose.com). For EN 54-24 specifications (including required external EQ), see the FreeSpace FS2C EN 54-24 certified ratings (AM857600 Rev. 00) at [PRO.BOSE.COM](https://www.pro.bose.com).

Physical	
Product Dimensions	Baffle diameter: 183 mm (7.20 in)
Enclosure diameter: 155 mm (6.10 in)	
Backcan depth: 125 mm (4.92 in)	
Hole cutout	165 mm (6.50 in)
Maximum Ceiling Thickness	38 mm (1.50 in)
Net Weight, Loudspeaker with grille (single)	1.63 kg (3.60 lb)
Shipping Weight (pair)	4.40 kg (9.70 lb)
Environmental	Indoor Only

Important Installation Information

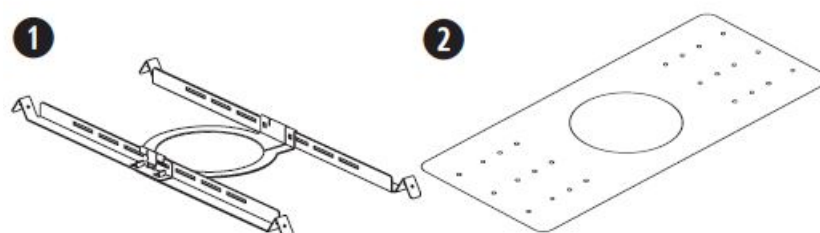
- Before installing the loudspeaker, review Important Safety Instructions on page 2.
- For fire and evacuation notification applications, environmental rated to IP21C per EN 54-24.

Installation Options

Installation Options and Accessories

One of the following is required for installation. See the related accessory installation guide at PRO.BOSE.COM for installation instructions.

1. Adjustable Tile Bridge (not included)
2. Rough-in Pan (not included)



Choosing an Installation Method

Top Knockout

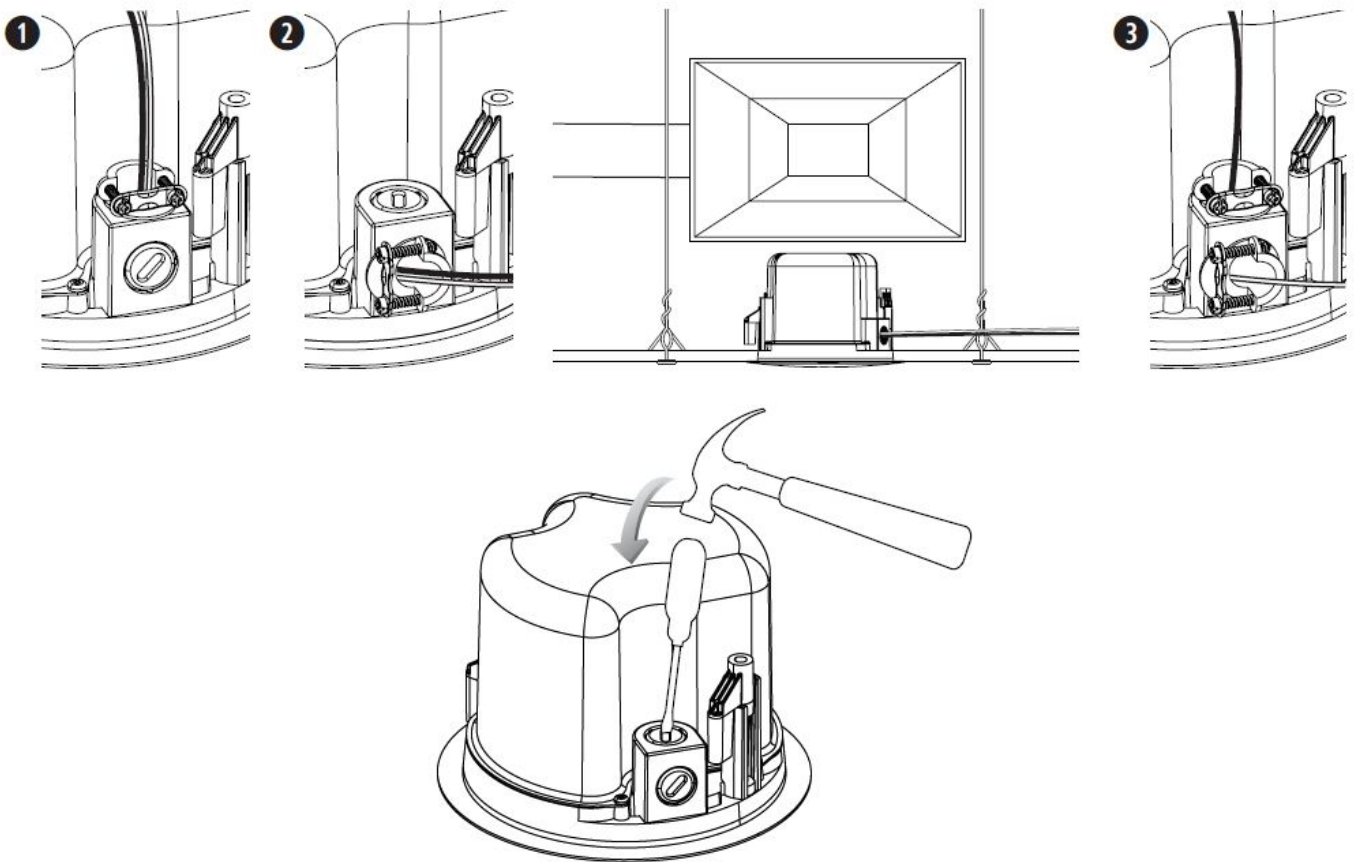
- Use the top knockout when there is available space above the ceiling.

Side Knockout

- Use the side knockout when there is limited space above the ceiling.

Both Knockouts

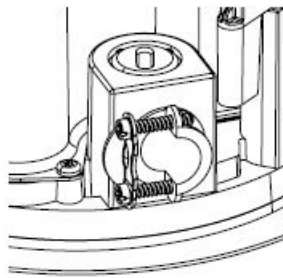
- Use both knockouts when an independent signal-in and signal-out wiring scheme is required and there is available space above the ceiling.



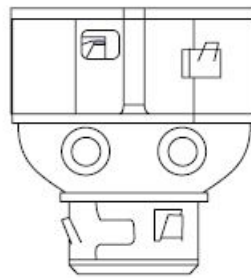
Conduit Fitting

If using a flexible metal conduit, use with a 3/8-inch conduit fitting or a 3/8-inch dual (duplex) connector.

Note: Conduit fittings are not provided.



3/8-inch single in



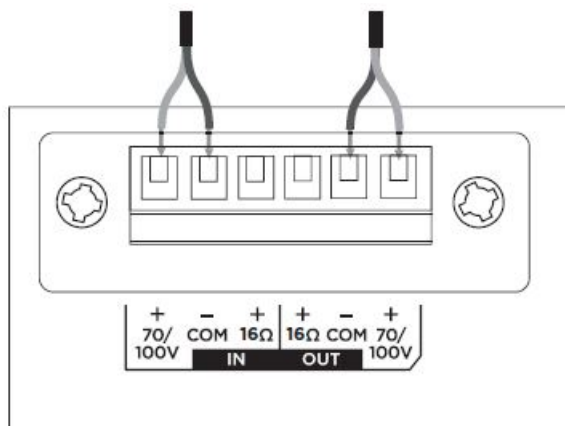
3/8-inch duplex in/loop

Wiring the Loudspeaker

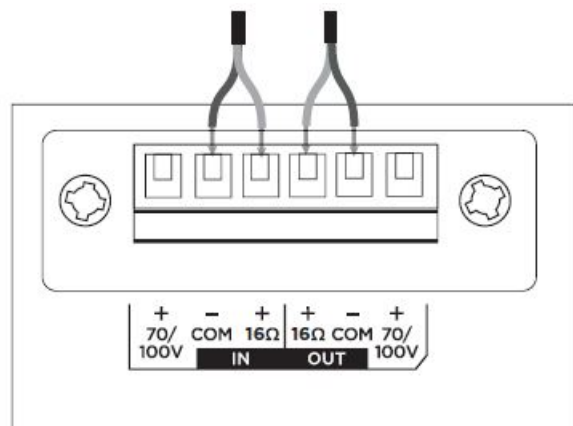
Wire Gauge

The FreeSpace FS2C loudspeaker is designed to work with 18 AWG (0.8 mm²) to 14 AWG (2.1 mm²) size wire only.

Connection Diagrams



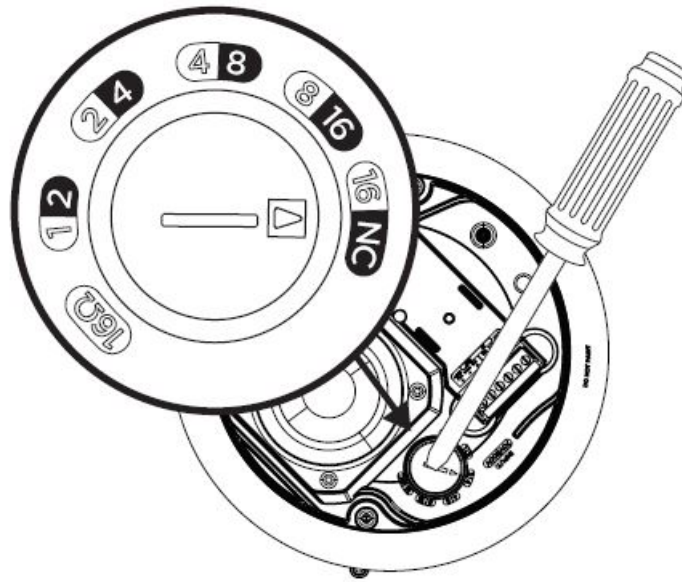
70/100V



16Ω

- Expose six millimeters (1/4 inch) of bare wire to attach to the terminals.
- **Note:** Wiring method must be in accordance with:
 - In Canada, CSA C22.1, Canadian Electrical Code, Part I, Safety Standard for Electrical Installations, Section 32;
 - In the United States, The National Electrical Code, NFPA 70, and the National Fire Alarm and Signaling Code, NFPA 72.

Loudspeaker Settings



70V					
1W	2W	4W	8W	16W*	16Ω
2W	4W	8W	16W	NC**	
100V					

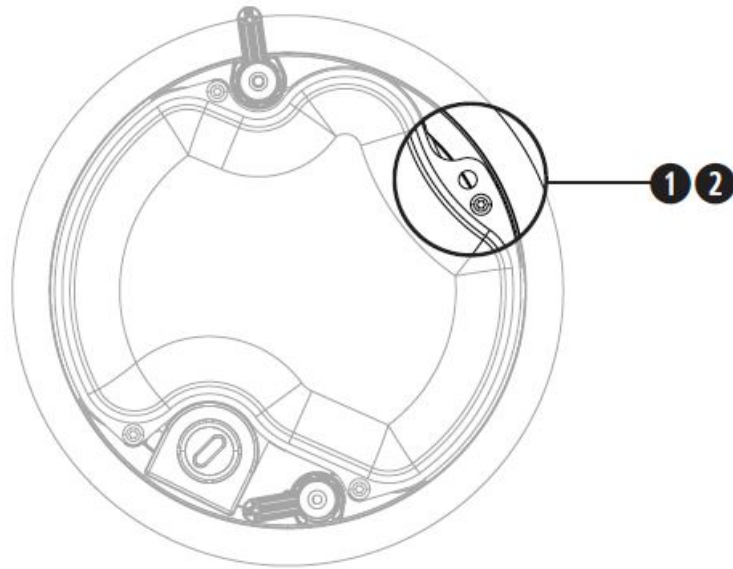
Transformer Tap Setting

Set tap by turning. Use a flat head screwdriver.

Preparing the Installation

Using a Safety Cable

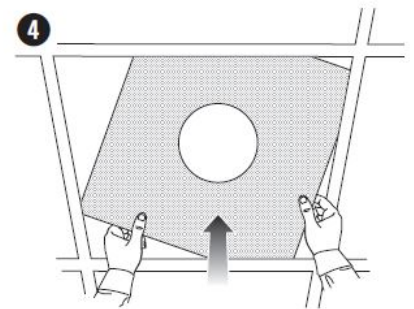
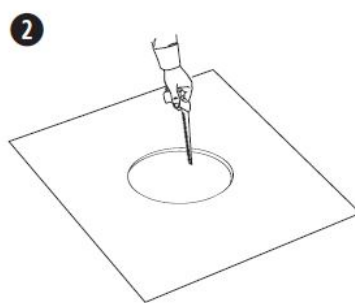
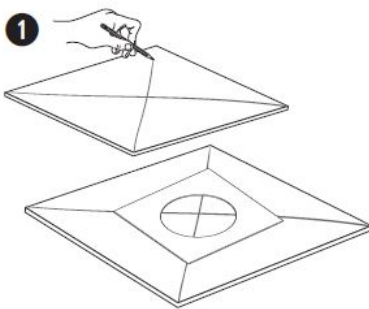
Some regional construction codes require the use of a secondary method of securing loudspeakers to support structures to provide additional safety. Choose a mounting position, method, and hardware consistent with local building codes and regulations. Bose recommends using (1) a safety wire or (2) a safety cable as a secondary securing mechanism. See the diagram to the right for safety attachment points. Follow the manufacturer's instructions for any secondary securing mechanism implemented.



Preparing a Tile Bridge Installation

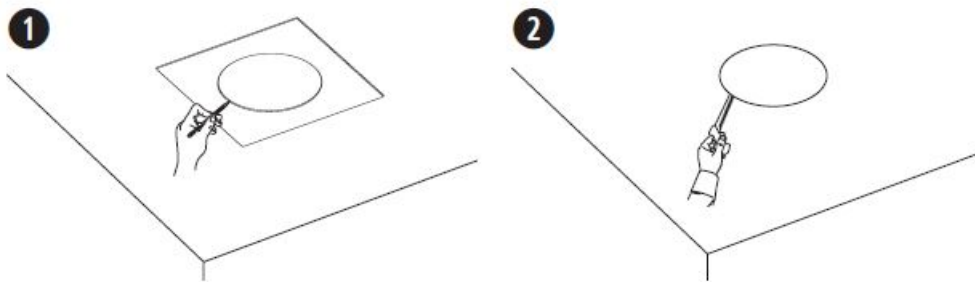
Ceiling Tile

1. Remove the tile and use the template to trace a loudspeaker hole onto the tile. To center the template on the tile, draw an X by connecting the corners diagonally and center the template using the crossing point.
2. Cut a hole into the tile.
3. Install the tile bridge. For instructions on installing a tile bridge, see the installation guide for the applicable tile bridge at PRO.BOSE.COM.
4. Replace the ceiling tile.



Hard Ceiling

1. Use the template to trace a hole onto the ceiling.
2. Cut a hole into the ceiling.
3. Install the tile bridge. For instructions on installing a tile bridge, see the installation guide for the applicable tile bridge at PRO.BOSE.COM.



Installing in Hard Ceiling Using a Rough-in Pan (New Construction)

For information on installing a rough-in pan, see the DesignMax and FreeSpace Rough-in Pan installation guide at PRO.BOSE.COM. Once the rough-in pan is installed, see Mounting the Loudspeaker on page 7.

Ceramic Terminal Attachment Point

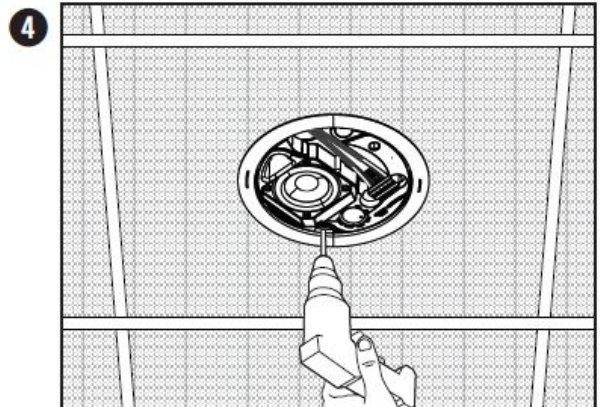
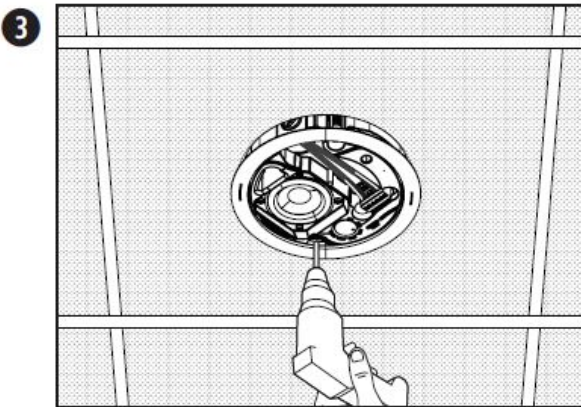
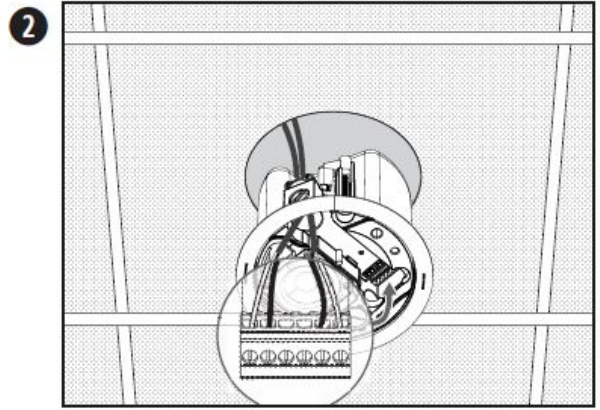
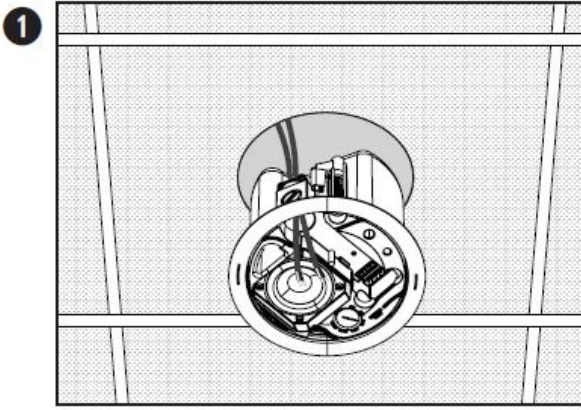
The FreeSpace FS2C is compatible with an optional ceramic terminal accessory. See the diagram for the location of the ceramic terminal attachment point. For more information on the ceramic terminal, see the ceramic terminal installation guide at PRO.BOSE.COM.



Mounting the Loudspeaker

1. Pass the audio wire through the wire opening.
2. Wire the connector and insert the connector into the loudspeaker. Tighten the conduit fitting if applicable. For wiring information, see Wiring the Loudspeaker on page 5.
3. Insert the loudspeaker through the hole and into the tile bridge or rough-in pan (see page 6) and turn (counterclockwise) the anchor arm screws one half turn to release the anchor arms. Slowly lower the loudspeaker until the anchor arms engage on the tile bridge or rough-in pan.
4. Tighten the anchor arm screws to secure the loudspeaker.

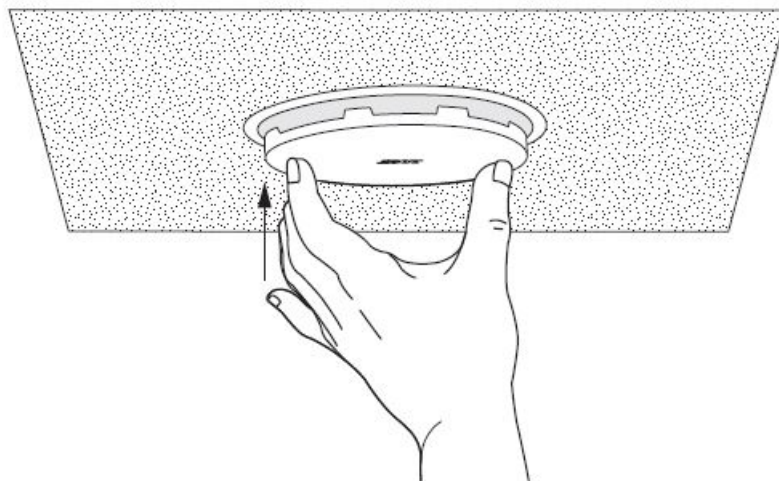
WARNING: Over-tightening or over-loosening the screws may result in damage to the anchor arms, the anchor attachment point, or the ceiling, which could lead to a falling hazard.



Attaching the Grille

Note: Before attaching the grille, adjust the loudspeaker tap settings to the appropriate setting for the installation. See Loudspeaker Settings on page 5.

After determining the logo alignment appropriate for the installation, line up the grille with the inside of the loudspeaker enclosure and push upward until it is secured into place. If necessary, push the grille tabs inward to properly fit into the loudspeaker enclosure.



Removing the Grille

Insert a small tool (no larger than 1.5 millimeters in diameter) through the grille perforation at the edge of the grille and pull to disengage the grille.

CAUTION: Do not use a screwdriver to pry the grille from the enclosure. This could result in damage to the loudspeaker.

Safety and Regulatory Compliance

- The Bose FreeSpace FS2C loudspeaker has passed testing and complies with the following specifications and uses:
- Listed to ANSI/UL 1480-2016, CAN/ULC-S541
- Fire Protective Signaling Use – UL Category UUMW/UUMW7, File Number S 3241. Control Number 42S9.
- Not for use with DC-supervised systems.
- Suitable for use indoors in dry locations.
- EN 54-24: 2008, Loudspeaker for Voice Alarm Systems for Fire Detection and Fire Alarm Systems for Buildings
- Environmental: Type A (indoor applications)
- Suitable for installation using Class 1, Class 2, or Class 3 wiring methods in accordance with NFPA 70, National Electric Code, 2002, Article 640.
- Suitable for use with fire alarm circuit wiring methods in accordance with NFPA 70, National Electric Code, 2002, Article 760
- Suitable for use in air handling plenum spaces.
- UL-2043, Fire Test and Visible Smoke Release for Discrete Products and their Accessories Installed in Air Handling Spaces.
- NFPA 70, National Electric Code, 2002, Article 300-22 (c).
- NFPA 90-A, 2002, Installation of Air Conditioning and Ventilation Systems, Paragraph 4.3.10.2.6.5.
- EMC Directive 89/336/EEC and Article 10 (1) of the directive, EN50081-1 and EN50082-1 as signified by the CE mark.
- The FreeSpace FS2C loudspeaker has been designed to the requirements defined in the following European regulatory specification for combination systems:
- British Standard Code of Practice BS 5839, Part 8, when used with the ceramic terminal block and thermal fuse.
- Tested to IEC60268-5.
- Nominal Coverage Angle (per UL 1480) Vertical: 145°/25° at –3 dB; 170°/5° at –6 dB
- Horizontal: 140°/20° at –3 dB; 170°/5° at –6 dB
- UL Sensitivity Wattage Tap Sound Pressure Level dBA at 3.1 meters (10 feet):

Wattage	CAN/ULC-S541	
	Canada	
Tap	70 V	100 V
1 W	77.3 dBA	—
2 W	80.0 dBA	79.8 dBA
4 W	82.4 dBA	82.6 dBA
8 W	84.8 dBA	84.6 dBA
16 W	86.7 dBA	86.3 dBA
16 Ω	86.0 dBA	—

Wattage	ANSI/UL 1480-2016	
	United States	
Tap	70 V	100 V
1 W	71.9 dBA	—
2 W	74.5 dBA	74.9 dBA
4 W	77.2 dBA	77.5 dBA
8 W	79.8 dBA	79.9 dBA
16 W	82.1 dBA	82.2 dBA
16 Ω	82.6 dBA	—

- SPLs given are per the UL 1480 specified reporting method.
- Frequency response:
- Fire alarm (UL): 95 Hz to 17000 Hz



Bose Corporation

100 The Mountain Rd, Framingham, MA 01701

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DOP 434849-11

EN 54-24: 2008

Loudspeaker for voice alarm systems for fire detection and fire

alarm systems for buildings

FreeSpace FS2C

Provided options:

Type A

For DOP 434849-11, see pro.bose.com/FS2CDOP_NL

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- Framingham, MA 01701-9168 USA
- [PRO.BOSE.COM](https://pro.bose.com)
- AM861336 Rev. 02
- September 2021



861336-0030

Documents / Resources



[BOSE FreeSpace FS2C In Ceiling Loudspeaker](#) [pdf] Installation Guide
FreeSpace FS2C In Ceiling Loudspeaker, FreeSpace FS2C, In Ceiling Loudspeaker, Ceiling Lo
udspeaker, Loudspeaker

References

- [Bose Professional](#)
- [pro.Bose.com/FS2CDOP_NL](#)