

## Flush Mount Series Speaker and Subwoofer Installation Instructions

### Important Safety Information

#### ⚠ WARNING

See the *Important Safety and Product Information* guide in the product box for product warnings and other important information.

#### ⚠ WARNING

This device must be installed according to these instructions.

Disconnect the vehicle's or vessel's power supply before beginning to install this device.

#### ⚠ CAUTION

Continuous exposure to sound pressure levels over 100 dBA may cause permanent hearing loss. The volume is typically too loud if you cannot hear people speaking around you. Limit the amount of time you listen at high volume. If you experience ringing in your ears or muffled speech, stop listening and have your hearing checked.

Always wear safety goggles, ear protection, and a dust mask when drilling, cutting, or sanding.

#### NOTICE

When drilling or cutting, always check what is on the opposite side of the surface.

It is strongly recommended that you have your audio system installed by a professional installer to ensure optimum performance.

You must read all installation instructions before beginning the installation. If you experience difficulty during the installation, go to [www.fusionentertainment.com](http://www.fusionentertainment.com) for product support.

After installing the subwoofer, you should run the subwoofer at low to medium volumes for the first few hours of use. This helps to improve the overall sound by gradually loosening up the moving components of the subwoofer, such as the cone, spider, and surround

### Tools Needed

- Phillips screwdriver
- Torque screwdriver with a Phillips bit
- Appropriate saw or utility knife to cut surface material
- 18 AWG (0.82 mm<sup>2</sup>) speaker wire
- Marine sealant such as 3M™ 4200 or 5200
- Speaker spade connectors (recommended)
- Wire strippers (optional)
- Crimping tool (optional)
- Electrical tape (optional)

**NOTE:** For customized installations, additional tools and materials may be needed.

### Mounting Considerations

#### NOTICE

When mounting the speaker in an area exposed to weather or water, you must mount the speaker on a vertical surface. If you mount the speaker on a horizontal surface facing up, water can gather in and around the speaker, causing damage over time.

If you intend to mount the speakers outside the boat, you must mount them in a location well above the waterline, where they are not submerged or damaged by docks, pilings, or other pieces of equipment. When mounted correctly, these speakers are rated for protection from the front of the speaker. Water exposure and damage to the rear of the speaker voids the warranty.

You must turn off the audio system before making any connections to the stereo, amplifier, or speakers. Failure to do so could result in permanent damage to the audio system.

You should protect all terminals and connections from grounding and from each other. Failure to do so could result in permanent damage to the audio system and void the product warranty.

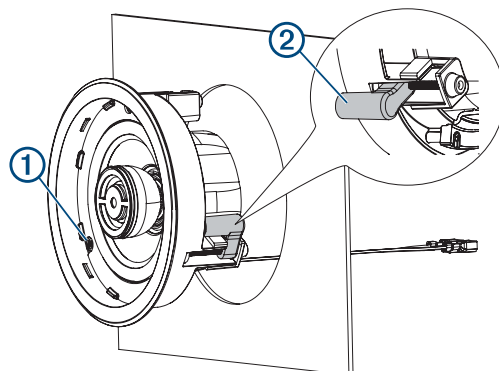
When selecting a mounting location for the speakers, observe these considerations:

- You must select mounting locations that provide sufficient clearance for the mounting depth of the speakers as specified in the product specifications.
- You must select a mounting location where the panel thickness is not thinner or thicker than specified in the product specifications.
- You should select a flat mounting surface for the best seal.
- You should protect the speaker wires from sharp objects and always use rubber grommets when wiring through panels.
- To avoid interference with a magnetic compass, you should not mount the speakers closer to a compass than the compass-safe distance value listed in the product specifications.

Selecting the correct mounting location optimizes the performance of each speaker. FUSION® speakers are designed to perform in the widest possible range of mounting locations, but the more you plan the installation, the better the speakers will sound. For more information on speaker placement and specifications, go to [www.fusionentertainment.com](http://www.fusionentertainment.com).

### Mounting the Speakers

- 1 Use the included template with a rotary tool or jigsaw to cut the hole for the speaker.
- 2 Connect the speaker wires while observing polarity (*Speaker Wiring, page 2*).
- 3 Apply marine sealant on the speaker and the mounting surface.
- 4 Place the speaker in the cutout.
- 5 Using a #2 Phillips screwdriver, turn the screws ① to extend the mounting tabs ② lightly hold the speaker to mounting surface.



#### NOTICE

Although you may use a power screwdriver to initially turn the screws on the mounting tabs, you must use a torque screwdriver to complete the installation. Using power tools to

fully tighten the screws can damage the speaker housing and make it difficult to install the speaker grille.

- Using a torque screwdriver, tighten the screws by hand to 1.0 Nm (0.74 lbf-ft) on the FM-F65/F77 speaker models or 1.5 Nm (1.11 lbf-ft) on the FM-S10 subwoofer models.
- With the speaker mounted, place the grille onto the speaker, and push to secure it.

## Speaker Wiring

When connecting the speakers or subwoofer to your stereo or amplifier, observe these considerations.

- Speaker wire is not included with the speakers or subwoofer. You should use 18 AWG (0.82 mm<sup>2</sup>) speaker wire to connect the speakers or subwoofer to the stereo or amplifier.
- The leads on the speakers and subwoofer are terminated using male spade connectors. You should use female spade connectors (not included) to connect the speaker wire to the leads for the best connection.
- The subwoofer features a dual 2 Ohm voice coil that can be configured for 2.1 operation (two speakers and one subwoofer) when connected to a compatible FUSION stereo ([Configuring the Subwoofer for 2.1 Operation, page 2](#)).

You can use these tables to identify the polarity and spade-connector sizes of the leads on the speakers or subwoofer.

### FM-F65/F77 Speakers

| Lead color                | Polarity     | Spade connector size |
|---------------------------|--------------|----------------------|
| White                     | Positive (+) | 6.3 mm               |
| White with a black stripe | Negative (-) | 4.8 mm               |

### FM-S10 Subwoofer

| Lead color               | Polarity     | Spade connector size |
|--------------------------|--------------|----------------------|
| White                    | Positive (+) | 6.3 mm               |
| Gray with a black stripe | Negative (-) | 4.8 mm               |

Gray and white with a black stripe wires are connected to jumper terminals on the back of the subwoofer. These wires must remain connected to the jumper terminals for normal use (4 Ohm) and should be disconnected only when configuring the subwoofer for 2.1 operation.

### Configuring the Subwoofer for 2.1 Operation

The subwoofer features dual 2 Ohm voice coils and is pre-configured for 4 Ohm operation. You can change the configuration of the subwoofer for 2.1 operation (two speakers and one subwoofer) when connected to a FUSION 2 Ohm-stable stereo with DSP capability, such as an Apollo™ RA770. See [www.fusionentertainment.com](http://www.fusionentertainment.com) for more information about compatible stereos.

- Disconnect the gray wire and the white with a black stripe wire from the jumper terminals on the back of the subwoofer.
- Connect the wires from the subwoofer to the stereo using the following table as a reference.

| Subwoofer lead            | Stereo connection         |
|---------------------------|---------------------------|
| White                     | Zone 2 right positive (+) |
| White with a black stripe | Zone 2 right negative (-) |
| Gray                      | Zone 2 left positive (+)  |
| Gray with a black stripe  | Zone 2 left negative (-)  |

- Turn on the connected stereo.
- Launch the FUSION-Link™ app, and select the 2.1 option for the connected stereo.

The subwoofer operates in 2.1 mode, with the volume control tied to zone 1 on the stereo. The zone 2 volume control and the zone 2 line out connectors are disabled.

## Speaker Information

### True-Marine™ Products

True-Marine products are subjected to rigorous environmental testing under harsh marine conditions to surpass industry guidelines for marine products.

Any product that bears the True-Marine stamp of assurance has been designed for simplicity of use and combines advanced marine technologies to deliver an industry leading entertainment experience. All True-Marine products are supported by the FUSION 3-year worldwide limited consumer warranty.

### Registering Your Flush Mount Series

Help us better support you by completing our online registration today.

- Go to [www.fusionentertainment.com](http://www.fusionentertainment.com).
- Keep the original sales receipt, or a photocopy, in a safe place.

### Cleaning the Speakers

**NOTE:** When mounted correctly, these speakers are rated IP65 for dust and water ingress protection under normal conditions. They are not designed to withstand high pressure water spray, which may occur when you wash down your vessel. Failure to carefully spray-clean the vessel may damage the product and void the warranty.

#### NOTICE

Do not use harsh or solvent-based cleaners on the speakers. Using such cleaners may damage the product and void the warranty.

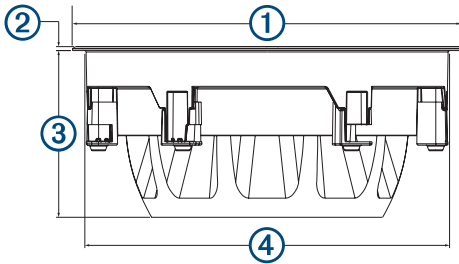
- Clean all salt water and salt residue from the speaker with a damp cloth soaked in fresh water.
- Use a mild detergent to remove a heavy buildup of salt or stains.

## Specifications

| Specification                     | FM-F65  | FM-F77  | FM-S10  |
|-----------------------------------|---|---|---|
| Peak power (Watts)                | 120 W   | 200 W   | 400 W   |
| RMS power (Watts)                 | 30 W  | 50 W  | 120 W   |
| Sensitivity (1 W/1 m)             | 87 dB   | 91 dB   | 87 dB   |
| Frequency response                | 100 Hz to 18 kHz  | 80 Hz to 18 kHz   | 30 Hz to 2 kHz  |
| Nominal impedance                 | 4 Ohms  | 4 Ohms  | 4 Ohms  |
| Recommended amplifier power (RMS) | 15 to 80 W per channel  | 20 to 150 W per channel   | 40 to 300 W per channel   |
| Min. panel thickness              | 3 mm (1/8 in.)  | 3 mm (1/8 in.)  | 6 mm (1/4 in.)  |
| Max. panel thickness              | 25 mm (1 in.)   | 25 mm (1 in.)   | 25 mm (1 in.)   |
| Min. mounting depth (clearance)   | 70 mm (2 3/4 in.)   | 83 mm (3 1/4 in.)   | 140 mm (5 1/2 in.)  |
| Mounting diameter (clearance)     | Round Ø: 138 mm (5 7/16 in.)<br>Square: 138 × 138 mm (5 7/16 in.) | Round Ø: 165 mm (6 1/2 in.)<br>Square: 165 × 165 mm (6 1/2 in.) | Round Ø: 269 mm (10 9/16 in.)<br>Square: 269 × 269 mm (10 9/16 in.) |
| Optimal enclosure size            | 4 L   | 8 L   | 40 L  |

| Specification                          | FM-F65   | FM-F77   | FM-S10  |
|--|--|--|---|
| Operating temperature range            | From 0 to 50°C (from 32 to 122°F)  | From 0 to 50°C (from 32 to 122°F)  | From 0 to 50°C (from 32 to 122°F)   |
| Storage temperature range              | From -20 to 70°C (from -4 to 158°F)  | From -20 to 70°C (from -4 to 158°F)  | From -20 to 70°C (from -4 to 158°F)   |
| Compass-safe distance                  | From the rear: 245 cm (96.5 in.)<br>From the front: 235 cm (92.5 in.)<br>From the sides: 195 cm (76.8 in.) | From the rear: 290 cm (114.2 in.)<br>From the front: 275 cm (108.3 in.)<br>From the sides: 245 cm (96.5 in.) | From the rear: 381 cm (150 in.)<br>From the front: 350 cm (137.8 in.)<br>From the sides: 320 cm (126 in.) |
| Cone/surround material                 | Aluminum dome tweeter, polypropylene cone, rubber surround   | Aluminum dome tweeter, polypropylene cone, cloth surround  | Polypropylene cone, rubber surround   |
| Water and dust rating (from the front) | IEC 60529 IP65 <sup>1</sup>  | IEC 60529 IP65   | IEC 60529 IP65  |

### Speaker Dimensions



| Dimension | FM-F65  | FM-F77  | FM-S10  |
|-----------|---|---|---|
| ①         | Round Ø: 153 mm (6 in.)<br>Square: 153 × 153 mm (6 in.) | Round Ø: 181 mm (7 1/8 in.)<br>Square: 181 × 181 mm (7 1/8 in.) | Round Ø: 284 mm (11 3/16 in.)<br>Square: 284 × 284 mm (11 3/16 in.) |
| ②         | 2.5 mm (1/8 in.)  | 2.5 mm (1/8 in.)  | 2.5 mm (1/8 in.)  |
| ③         | 67.1 mm (2 5/8 in.)                                     | 80.4 mm (3 3/16 in.)  | 137 mm (5 3/8 in.)  |
| ④         | 135 mm (5 5/16 in.)                                     | 162 mm (6 3/8 in.)  | 266 mm (10 1/2 in.)   |

<sup>1</sup> Sealed against all dust ingress, and protected against jets of water.

