

## MS-RA210 Installation Instructions

### Important Safety Information

**⚠ WARNING**

Failure to follow these warnings and cautions could result in personal injury, damage to the vessel, or poor product performance.

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

This device must be installed according to these instructions.

Disconnect the vessel's power supply before beginning to install this product.

Before applying power to this product, make sure it has been correctly grounded, following the instructions in the guide.

**⚠ CAUTION**

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.

You must read all installation instructions before beginning the installation. If you experience difficulty during the installation, contact FUSION® Product Support.

### What's In the Box

- Mounting gasket
- Four 6-gauge, self-tapping screws
- Two screw covers
- Power and speaker wiring harness
- Auxiliary-in, line-out, and subwoofer-out wiring harnesses

### Tools Needed

- Phillips screwdriver
- Electric drill
- Drill bit (size varies based on surface material and screws used)
- Rotary cutting tool or jigsaw
- Silicone-based marine sealant (optional)

### Mounting Considerations

- You must mount the stereo on a flat surface that provides open airflow around the rear of the stereo for heat ventilation.
- If you are installing the stereo in a location that may be exposed to water, you must mount it within 45 degrees of the horizontal plane.
- If you are installing the stereo in a location that may be exposed to water, add a drip loop to the cable to allow water to drip off of the cable and avoid damage to the stereo.
- If you need to mount the stereo outside a boat, you must mount it in a location far above the waterline, where it is not submerged, and where it cannot be damaged by docks, pilings, or other pieces of equipment.
- To avoid interference with a magnetic compass, you must install the stereo at least 15 cm (5.9 in.) away from a compass.

### Mounting the Stereo

**NOTICE**

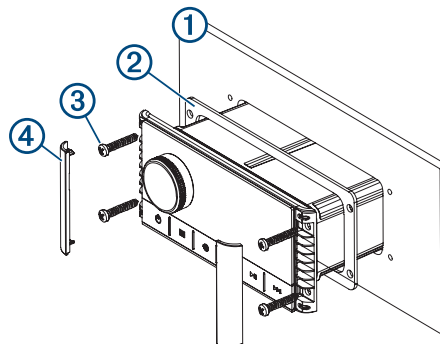
Do not use the stereo as a template when drilling the mounting holes because this may damage the glass display and void the warranty. You must only use the included template to correctly drill the mounting holes.

Be careful when cutting the hole to mount the stereo. There is only a small amount of clearance between the case and the mounting holes, and cutting the hole too large could compromise the stability of the stereo after it is mounted.

Do not apply grease or lubricant to the screws when fastening the stereo to the mounting surface. Grease or other lubricants can cause damage to the stereo housing.

Before you can mount the stereo in a new location on the mounting surface, you must select a location in accordance with the mounting considerations.

- 1 Adhere the template to the mounting surface.
- 2 Drill a hole inside the corner of the dashed line on the template.
- 3 Cut the mounting surface ① along the inside of the dashed line on the template.



- 4 Ensure the mounting holes on the stereo line up with the pilot holes on the template.
- 5 Using an appropriately sized drill bit for the mounting surface and screw type, drill the pilot holes.
- 6 Remove the template from the mounting surface.
- 7 Complete an action:
  - If you are installing the stereo in a dry location, place the included mounting gasket ② on the back of the stereo.
  - If you are installing the stereo in a location that is exposed to water, apply silicone-based marine sealant on the mounting surface around the cutout.

**NOTICE**

Do not install the included mounting gasket if you applied sealant to the mounting surface. Using sealant and the mounting gasket may reduce water resistance.

- 8 If you will not have access to the back of the stereo after installation, make the necessary wiring connections.
- 9 Secure the stereo to the mounting surface using the included screws ③.
 

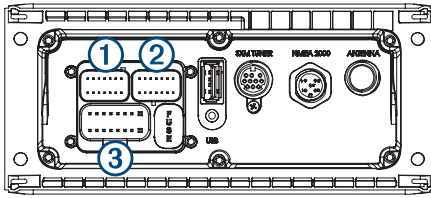
You should hand-tighten the screws when securing the stereo to the mounting surface to avoid over tightening them.
- 10 Snap the screw covers in place ④.

### Connection Considerations

The stereo must be connected to power, either through the boat ignition or an external switch, speakers, and media input sources to function correctly. You should carefully plan the

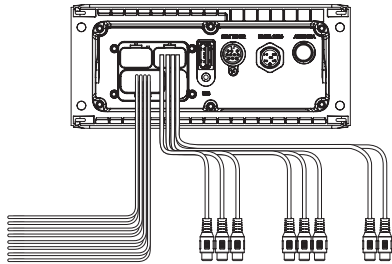
layout of the device, the NMEA 2000® network, the speakers, and your input sources before making any connections.

## Port Identification



①	Not used.
②	Connects the stereo to the wiring harness for auxiliary input 1, and for the line and subwoofer outputs for zones 1 and 2.
③	Connects the stereo to the power and speaker wiring harness.
FUSE	Contains the 15 A fuse.
USB	Connects the stereo to a USB source.
SXM TUNER	Connects the stereo to a SiriusXM® Connect Tuner to receive SiriusXM stations where available (not included). Connects to a FUSION DAB module to receive DAB stations where available (not included).
ANTENNA	Connects the stereo to a typical AM/FM antenna. If you are installing the stereo on a boat with a metal hull, you must use a ground-dependent antenna. If you are installing the stereo on a boat with a non-metal hull, you must use a ground-independent antenna. See the installation instructions provided with your antenna for more information.
NMEA 2000	Connects the stereo to a NMEA 2000 network ( <i>NMEA 2000 System Wiring Diagram, page 3</i> ).

## Wiring Harness Wire and Connector Identification



Wire or RCA Connector Function	Bare Wire Color or RCA Label Name	Notes
Ground (-)	Black	Connects to the negative terminal of the power source ( <i>Connecting to Power, page 2</i> ).
Power (+)	Yellow	Connects to the positive terminal of the power source.
Ignition	Red	Connects to a separately-switched, 12 Vdc connection, such as an ignition bus, to turn the stereo on and off.
Amplifier on	Blue	Connects to optional external amplifiers, enabling them to turn on when the stereo turns on. Maximum output current when stereo is on: 100 mA.

Wire or RCA Connector Function	Bare Wire Color or RCA Label Name	Notes
Telemute	Brown	Activates when connected to ground. For example, when you connect this wire to a compatible, hands-free mobile kit, the audio mutes or the input switches to AUX when a call is received and the kit connects this wire to ground. You can enable this functionality from the settings menu.
Dim	Orange	Connects to the boat's illumination wire to dim the stereo screen when the lights are on. The gauge of the illumination wire must be suitable for the fuse supplying the circuit it is connected to.
Speaker zone 1 left (+)	White	
Speaker zone 1 left (-)	White/black	
Speaker zone 1 right (+)	Gray	
Speaker zone 1 right (-)	Gray/black	
Speaker zone 2 left (+)	Green	
Speaker zone 2 left (-)	Green/black	
Speaker zone 2 right (+)	Purple	
Speaker zone 2 right (-)	Purple/black	
Zone 1 line out (left) Zone 1 line out (right) Zone 1 subwoofer out	ZONE 1 ZONE 1 SUB OUT	Provides output to an external amplifier, and is associated with the volume control for zone 1. Each subwoofer cable provides a single mono output to a powered subwoofer or subwoofer amplifier.
Zone 2 line out (left) Zone 2 line out (right) Zone 2 subwoofer out	ZONE 2 ZONE 2 SUB OUT	Provides output to an external amplifier, and is associated with the volume control for zone 2. Each subwoofer cable provides a single mono output to a powered subwoofer or subwoofer amplifier.
Auxiliary in left Auxiliary in right	AUX IN	Provides an RCA stereo line input for audio sources, such as a CD or MP3 player.

## Connecting to Power

When connecting the stereo to power, you must connect both power wires. You should connect the yellow power wire directly to the battery. This provides power to the stereo and a constant trickle-power standby feed.

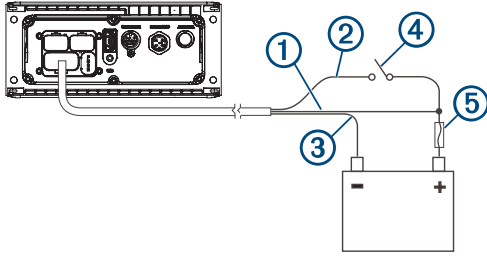
You should connect the red ignition wire to the same battery through the ignition or another manual switch to turn the stereo on and off. If you are not routing the red wire through the ignition or another manual switch, you can connect the red wire to the yellow wire, and connect them both to the positive (+) battery terminal.

You must connect the power wires to the battery through a 15 A fuse or a 15 A circuit breaker.

If it is necessary to extend the yellow power and black ground wires, use 14 AWG (2.08 mm<sup>2</sup>) wire. For extensions longer than 1 m (3 ft.), use 12 AWG (3.31 mm<sup>2</sup>) wire. If it is necessary to extend the red wire, use 22 AWG (0.33 mm<sup>2</sup>) wire.

- 1 Route the yellow power ①, red ignition ②, and black ground ③ wires to the battery, and route the wiring-harness plug to the stereo.

Do not connect the wiring harness to the stereo until all of the bare wire connections have been made.



- 2 Connect the black wire to the negative (-) battery terminal.
- 3 If you are routing the red wire through the ignition or another manual switch ④, connect the red ignition wire to the ignition or switch.
- 4 Connect the red wire to the yellow wire, install a 15 A fuse ⑤ as close to the battery as possible, and connect both wires to the positive (+) battery terminal.

**NOTE:** If you are running the red wire through a fused switch, it is not necessary to connect the red wire to the yellow wire or to add an another fuse to the red wire.

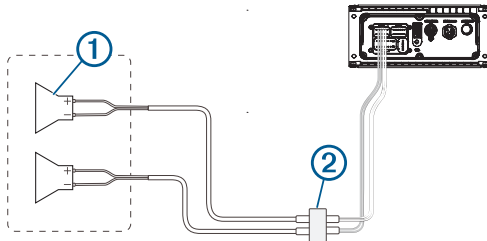
### Speaker Zones

You can group speakers in one area into a speaker zone. This enables you to control the audio level of the zones individually. For example, you could make the audio quieter in the cabin and louder on deck.

You can connect one 4 Ohm speaker per channel of each zone. One zone can support no more than two 4 Ohm speakers using the on-board amplifier. To use the RCA line outputs and the RCA subwoofer outputs, you must connect an external amplifier.

You can set the balance, volume limit, tone, subwoofer level, subwoofer frequency, and name for each zone, and configure other zone-specific settings.

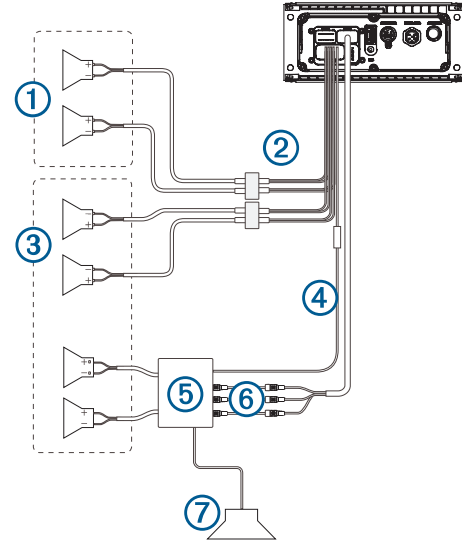
### Single-Zone System Wiring Example



①	Speakers
②	Water-tight connection

### Extended System Wiring

This diagram illustrates a system installation with an external amplifier and subwoofer connected to zone 2 on the stereo. You can connect an amplifier and subwoofer to any or all of the zones on the stereo.



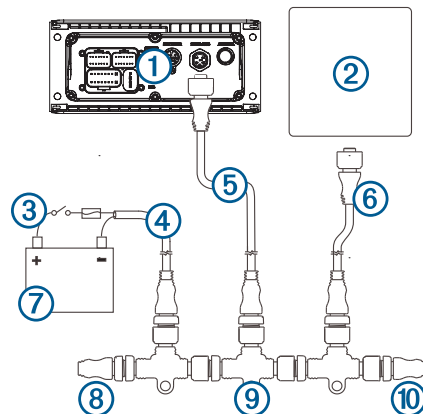
①	Zone 1 speakers
②	Water-tight connection
③	Zone 2 speakers
④	Amplifier-on signal wire You must connect this wire to each amplifier connected to a zone line out.
⑤	Powered amplifier connected to the zone 2 line out
⑥	Zone 2 line out and subwoofer out Each subwoofer cable provides a single mono output to a powered subwoofer or subwoofer amplifier.
⑦	Subwoofer

### Connecting a SiriusXM Tuner Module

This device is compatible with a SiriusXM SXV300 or newer vehicle tuner module.

- 1 If you have already connected a USB source, a NMEA 2000 cable, or both, disconnect them from the stereo.
- 2 Connect the cable from the SiriusXM tuner module to the SXM TUNER port on the back of the stereo.
- 3 If necessary, reconnect the USB source, the NMEA 2000 cable, or both.
- 4 Complete the stereo installation.

### NMEA 2000 System Wiring Diagram



①	Stereo
②	Supported chartplotter MFD or compatible FUSION NMEA 2000 remote control

③	In-line switch
④	NMEA 2000 power cable
⑤	NMEA 2000 drop cable from the stereo, up to 6 m (20 ft.)
⑥	NMEA 2000 drop cable from the chartplotter MFD or compatible FUSION NMEA 2000 remote control
⑦	9 to 16 Vdc power supply
⑧	NMEA 2000 terminator or backbone cable
⑨	NMEA 2000 T-connector
⑩	NMEA 2000 terminator or backbone cable

## Stereo Information

### Specifications

Weight	350 g (12.4 oz.)
Water rating	IEC 60529 IPX6 and IPX7 (front of stereo only, when properly installed) <sup>1</sup> IEC 60529 IPX2 (rear of stereo)
Operating temperature range	From 0 to 50°C (from 32 to 122°F)
Storage temperature range	From -20 to 70°C (from -4 to 158°F)
Input voltage	From 10.8 to 16 Vdc
Current (max.)	15 A
Current (muted)	Less than 400 mA
Current (off, standby mode enabled)	Less than 80 mA
Current (off, standby mode disabled)	Less than 15 mA
Fuse	15 A mini-blade type
NMEA 2000 LEN @ 9 Vdc	1 (50 mA)
Bluetooth® wireless range	Up to 10 m (30 ft.)
ANT® wireless range	Up to 3 m (10 ft.)
Wireless frequencies/ protocols	Bluetooth 2.4 GHz @ 12 dBm nominal ANT 2.4 GHz @ 7 dBm nominal
Compass-safe distance	15 cm (5.9 in.)

### On-board, Class D amplifier

Output music power per channel	4 x 50 W max. 4 Ohm
Total output peak power	200 W max.
Output power per channel	4 x 26 W RMS at 14.4 Vdc input, 4 Ohm, 10% THD <sup>2</sup>
Line output level (max.)	5.5 V (peak to peak)
Aux input level (typical)	1 V RMS

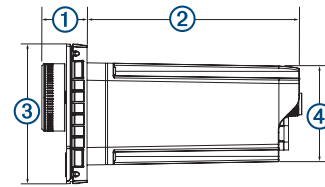
### Tuner frequencies

Tuner	Europe and Australasia	USA	Japan
FM radio frequency range	87.5 to 108 MHz	87.5 to 107.9 MHz	76 to 95 MHz
FM frequency step	50 kHz	200 kHz	50 kHz
AM radio frequency range	522 to 1620 kHz	530 to 1710 kHz	522 to 1620 kHz
AM frequency step	9 kHz	10 kHz	9 kHz

<sup>1</sup> When properly installed, the front of the stereo withstands incidental exposure to water of up to 1 m for up to 30 min, and is protected against powerful jets of water. For more information, go to [www.garmin.com/waterrating](http://www.garmin.com/waterrating). <sup>2</sup> The stereo may limit the output power to prevent the amplifier from overheating, and to maintain the audio dynamics.

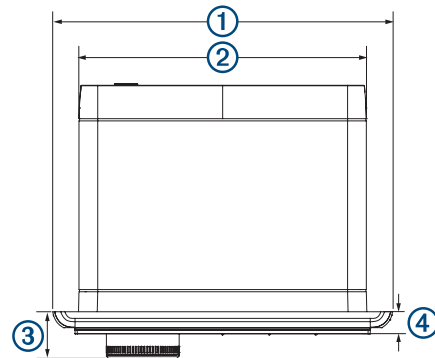
## Stereo Dimension Drawings

### Side Dimensions



①	22 mm (0.87 in.)
②	104.6 mm (4.12 in.)
③	68 mm (2.68 in.)
④	49.8 mm (1.96 in.)

### Top Dimensions



①	157 mm (6.18 in.)
②	130 mm (5.10 in.)
③	22 mm (0.87 in.)
④	10 mm (0.39 in.)

## Software Updates

For best results, you should update the software in all FUSION devices at the time of installation to ensure compatibility.

You can update the software using a USB flash drive. For software updates and instructions on updating the device using the USB flash drive, go to the device product page at [www.fusionentertainment.com/marine](http://www.fusionentertainment.com/marine).

## 物質宣言

部件名称	有毒有害物质或元素					
	铅	汞	镉	六价铬	多溴联苯	多溴二苯醚
印刷电路板组件	X	O	O	O	O	O
金属零件	X	O	O	O	O	O
电缆 电缆组件 连接器	X	O	O	O	O	O

本表格依据 SJ/T11364 的规定编制。

O: 代表此种部件的所有均质材料中所含的该种有害物质均低于 (GB/T26572) 规定的限量

X: 代表此种部件所用的均质材料中, 至少有一类材料其所含的有害物质高于

(GB/T26572) 规定的限量

\*該產品說明書應提供在環保使用期限和特殊標記的部分詳細講解產品的擔保使用條件。

