

Apollo™ MS-WB670 Installation Instructions	2
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Apollo™ MS-WB670 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.

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.

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 8-gauge, self-tapping screws
- Two screw covers
- Power and speaker wiring harness
- Auxiliary-in, line-out, and subwoofer-out wiring harnesses
- Dust cover

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

⚠ CAUTION

In high ambient temperatures and after extended use, the device enclosure may reach temperatures deemed dangerous to touch. As a result, the unit must be installed in a location where it cannot be touched during operation.

NOTICE

This device should be mounted in a location that is not exposed to extreme temperatures or conditions. The temperature range for this device is listed in the product specifications. Extended exposure to temperatures exceeding the specified temperature range, in storage or operating conditions, may cause device failure. Extreme-temperature-induced damage and related consequences are not covered by the warranty.

When selecting a mounting location for the black box device, observe these considerations.

- The device must be mounted in a location where it is not submerged.
- The device must be mounted in a location with adequate ventilation where it is not exposed to extreme temperatures.
- The device should be mounted so the cables can be connected easily.

- To achieve IPX3 water ingress protection and optimal heat sink cooling, the device must be mounted on a vertical surface with the connectors pointing downward.
- The device can be mounted on a horizontal surface, but such positioning might not achieve IPX3 water ingress protection.
- To avoid interference with a magnetic compass, the device should be installed at least 15 cm (5.91 in.) away from a compass.

When selecting a mounting location for the remote control, observe these considerations.

- The remote control must be mounted in a location where there is at least 70 mm (2.75 in.) of clearance behind the mounting surface and you can access the controls after it is mounted.
- If you need to mount the remote control outside the cabin, it must be mounted in a location well above the waterline, where it is not submerged.
- If you need to mount the remote control outside the boat, it should be mounted in a location where it will not be damaged by a docks, pilings, or other pieces of equipment.

Mounting the Apollo MS-WB670 Black Box Device

NOTICE

If you are mounting the device in fiberglass, when drilling the pilot holes, use a countersink bit to drill a clearance counterbore through only the top gel-coat layer. This will help to avoid cracking in the gel-coat layer when the screws are tightened.

NOTE: Screws are included with the device, but they may not be suitable for the mounting surface.

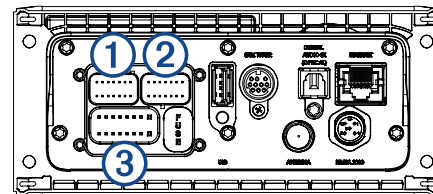
Before you mount the device, you must select a mounting location, and determine what screws and other mounting hardware are needed for the surface.

- 1 Place the black box device in the mounting location, and mark the location of the pilot holes.
- 2 Drill a pilot hole for one corner of the device.
- 3 Loosely fasten the device to the mounting surface with one corner, and examine the other three pilot-hole marks.
- 4 Mark new pilot-hole locations if necessary, and remove the device from the mounting surface.
- 5 Drill the remaining pilot holes.
- 6 Secure the device to the mounting location.

Connection Considerations

For the stereo to function correctly, you must connect it to power, to speakers, and to input sources. You should carefully plan the layout of the stereo, speakers, input sources, optional NMEA 2000® network, and optional FUSION PartyBus™ devices or network before making any connections.

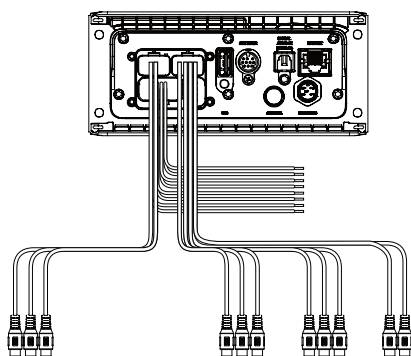
Port Identification



Item	Description
①	Connects the stereo to the wiring harness for zone 3.
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 for the device.
USB	Connects the stereo to a USB source.

Item	Description
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).
DIGITAL AUDIO IN (OPTICAL)	Connects the stereo to an optical digital audio source, such as TV or DVD player.
ETHERNET	Connects the stereo to another FUSION PartyBus stereo, zone stereo, or network (<i>FUSION PartyBus Networking</i> , page 5).
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</i> , page 4). Connects to an NRX series remote control directly (<i>Configuring an Optional Wired NRX Remote Control</i> , page 4).

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 a 12 Vdc power source capable of supplying 15 A. You should connect this wire before connecting the yellow wire. All accessories connected to the stereo must share a common ground location (<i>Connecting to Power</i> , page 3).
Power (+)	Yellow	Connects to the positive terminal of a 12 Vdc power source capable of supplying 15 A.
Ignition	Red	Connects to a separately-switched, 12 Vdc connection, such as an ignition bus, to turn the stereo on and off. If you are not using a switched 12 Vdc connection, you must connect this to the same source as the yellow (power) wire.
Amplifier on	Blue	Connects to optional external amplifiers, enabling them to turn on when the stereo turns on.
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	

Wire or RCA Connector Function	Bare Wire Color or RCA Label Name	Notes
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.
Zone 3 line out (left) Zone 3 line out (right) Zone 3 subwoofer out	ZONE 3	Provides output to an external amplifier, and is associated with the volume control for zone 3. Each subwoofer cable provides a single mono output to a powered subwoofer or subwoofer amplifier.

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.

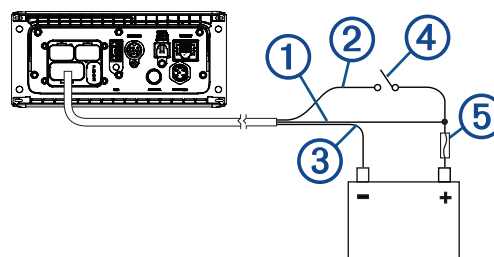
You should connect the red ignition wire to the same battery through the ignition or another manual switch to turn the stereo on and off. If you are not routing the red wire through the ignition or another manual switch, you can connect the red wire to the yellow wire, and connect them both to the positive (+) 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 mm²) wire. For extensions longer than 1 m (3 ft.), use 12 AWG (3.31 mm²) wire. If it is necessary to extend the red wire, use 22 AWG (0.33 mm²) 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

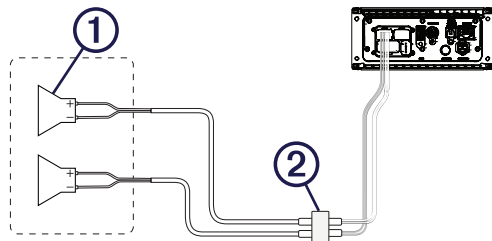
You can group speakers in one area into a speaker zone. This enables you to control the audio level of the zones individually. For example, you could make the audio quieter in the cabin and louder on deck.

Up to two pairs of speakers can be connected per channel of each zone, in parallel. One zone can support no more than four speakers using the on-board amplifier.

Zones 1 and 2 are powered by the on-board amplifier. Zone 3 is available as a line-level output only. To use the RCA line output and the RCA subwoofer output for zone 3, 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.

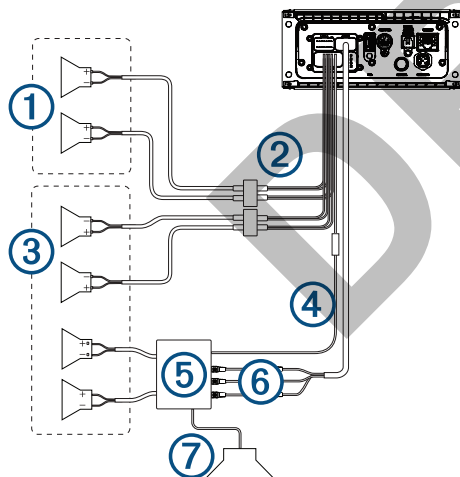
Single-Zone System Wiring Example



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.



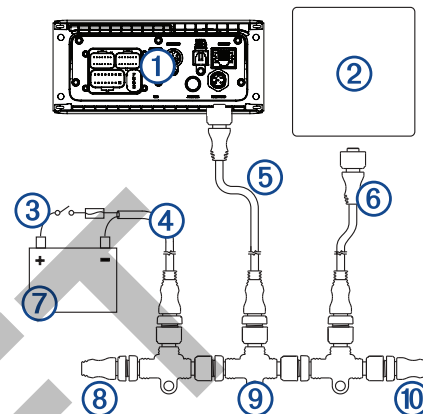
①	Zone 1 speakers
②	Water-tight connection
③	Zone 2 speakers
④	Amplifier-on signal wire You must connect this wire to each amplifier connected to a zone line out.
⑤	Powered amplifier connected to the zone 2 line out
⑥	Zone 2 line out and subwoofer out Each subwoofer cable provides a single mono output 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, disconnect it from the stereo.
- 2 Connect the cable from the SiriusXM tuner module to the SXM TUNER port on the back of the stereo.
- 3 Follow the instructions provided with the SiriusXM tuner module and antenna to complete the SiriusXM installation.
- 4 If necessary, reconnect the USB source.
- 5 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

Configuring an Optional Wired NRX Remote Control

NOTICE

The stereo is configured by default to work with a NMEA 2000 network, and the NRX POWER option should be enabled only when an optional wired NRX remote control is connected directly to the stereo. Enabling this option when the stereo is connected to a NMEA 2000 network may damage other devices on the NMEA 2000 network.

For the best results, it is recommended that you use a FUSION PartyBus remote control, such as an Apollo ERX400, but this stereo is compatible with an NRX remote control for limited control.

If you connect an optional wired NRX remote control directly to the stereo, and not through a NMEA 2000 network, additional configuration is needed.

- 1 Select **SETTINGS > POWER OPTIONS**.
- 2 Select an option:
 - If you connected both your stereo and your optional wired remote to a NMEA 2000 network, make sure the **NRX POWER** option is not selected. This enables the optional remote to receive power from the NMEA 2000 network.
 - If you connected the optional wired remote directly to the stereo through the NMEA 2000 connector, select the **NRX POWER** option. This enables the stereo to supply power to the optional remote.

FUSION PartyBus Networking

The FUSION PartyBus networking feature allows you to connect multiple compatible stereos together on a network, using a combination of wired or wireless connections.

The Apollo WB670 stereo does not have built-in Wi-Fi® technology. To use the wireless functions of the network, you must connect the stereo to the network using a wired ethernet connection.

A compatible stereo, such as the Apollo WB670 stereo, can be grouped with other compatible stereos connected to the network. Grouped stereos can share sources and control media playback on all of the stereos in the group, which allows for a synchronized audio experience across the vessel. You can quickly create, edit, and break up groups as needed from any compatible stereo on the network.

Compatible stereos and remote controls can also adjust the volume of the available speaker zones of any stereo on the network. Stereos do not need to be in a group to adjust the volume of other connected stereos.

You should refer to the installation instructions provided with your stereo when constructing the FUSION PartyBus network.

You can connect up to eight FUSION PartyBus stereos on a network wirelessly.

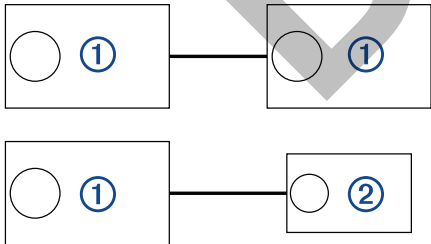
Wired Networking Considerations

When you are planning your network installation, observe the following considerations for all wired connections.

- Wired connections are more reliable than wireless connections. When planning your network, you should use network cables to connect FUSION PartyBus devices to the network when possible.
- You must connect devices using standard Cat5e or Cat6 network cables with RJ45 connectors.
- You can use one network cable to directly connect two compatible devices.
- You may need to use wired network switches and wired or wireless network routers when you connect more than two compatible stereos to a network.
- If you install a router on the network, it should be configured to be a DHCP server by default. See your router instructions for more information.
- If you do not install a router on the network, you can configure one FUSION PartyBus device to be a DHCP server, although it is not necessary. All connected devices will communicate properly as DHCP clients.

Wired Network Example for Direct Connections

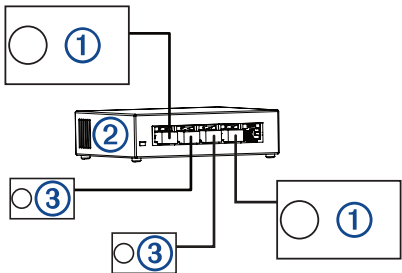
No network setting changes are needed when connecting two devices together directly.



①	FUSION PartyBus stereo
②	FUSION PartyBus zone stereo or remote control

Wired Network Example with a Switch or Router

You must use wired network switches, a wired network router, or both to connect more than two FUSION PartyBus devices.



①	FUSION PartyBus stereo
②	Wired network switch or wired network router
③	FUSION PartyBus zone stereo or remote control

Constructing a Network

You should have a basic understanding of networking when building a network for FUSION PartyBus devices.

These instructions guide you through the basics of building and configuring a network, and should apply to most situations. If you need to perform advanced networking tasks, such as assigning static IP addresses to devices on the network or configuring advanced settings on a connected router, you may need to consult a networking professional.

- 1 Determine the installation location of the FUSION PartyBus devices you want to connect to the network.
NOTE: Wired connections are more reliable than wireless connections. When planning your network, you should run network cables instead of using wireless connections when possible.
- 2 Determine the installation location of any needed network routers or switches.
- 3 Route Cat5e or Cat6 network cable to the installation locations of the stereos, switches, and router.
- 4 Connect the network cables to the stereos, switches, and router.

NOTICE

Do not completely install the stereos yet. You should test the network before you install the stereos.

- 5 Turn on all devices connected to the network, including wireless devices.
- 6 If you are using a network router (wired or wireless), consult the documentation provided with your router to configure the router as the DHCP server, if necessary.
All stereos should use their default configuration (DHCP CLIENT).
- 7 Test the network by viewing the list of FUSION PartyBus devices from the **CONTROL** screen on each device on the network and select an option:
 - If any FUSION PartyBus devices are not available to the network, troubleshoot the network (*Network Troubleshooting*, page 5).
 - If all FUSION PartyBus devices are available to the network, complete the installation for each stereo, if necessary.

Network Troubleshooting

If you cannot see or connect to FUSION PartyBus devices on the network, check the following:

- If you have a router connected to the network, verify that the router is configured as a DHCP server, and that all connected FUSION PartyBus devices are configured as DHCP or Wi-Fi clients.
- If you do not have a router connected to the network, verify that all FUSION PartyBus devices are configured as DHCP clients, or only one device is configured as a DHCP server (optional)
- Verify that all FUSION PartyBus devices, network switches, routers, and wireless access points are connected to the network and turned on.
- Verify that wireless FUSION PartyBus devices are connected to a wireless router or wireless access point on the network.
- If you configured static IP addresses, verify that every device has a unique IP address, that the first three sets of numbers in the IP addresses match, and that the subnet masks on every device are identical.

- If you have made configuration changes that might be causing networking issues, reset all network settings to factory default on all of the connected FUSION PartyBus devices.

Stereo Information

Specifications

Weight	750 g (26.5 oz.) PLACEHOLDER - MEASUREMENT NEEDED
Water rating	IEC 60529 IPX6 and IPX7 ¹
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 700 mA
Current (off, standby mode enabled)	50 mA
Current (off, standby mode disabled)	35 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 @ from 11.77 dBm nominal ANT 2.4 GHz @ from 6.92 dBm nominal
Compass-safe distance	15 cm (6 in.)

On-board, Class D amplifier

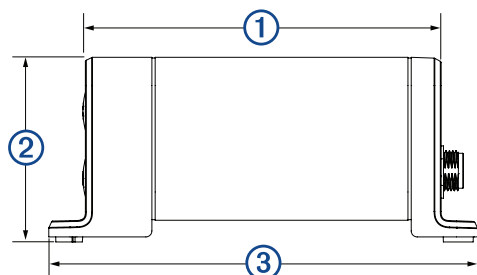
Output music power per channel	4 x 70 W max. 2 ohm
Total output peak power	280 W max.
Output power per channel	4 x 43 W RMS at 14.4 Vdc input, 2 ohm, 10% THD ² 4 x 26 W RMS at 14.4 Vdc input, 4 ohm, 10% THD ²
Line output level (max.)	5.5 V (peak to peak)
Aux input level (typical)	1 V RMS

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

Stereo Dimension Drawings

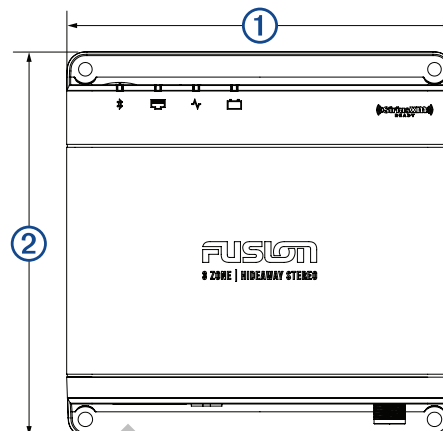
Side Dimensions



①	21 mm (0.83 in.)
②	102 mm (4.0 in.)

③	68 mm (2.68 in.)
④	49 mm (1.93 in.)

Top Dimensions



①	157 mm (6.18 in.)
②	130 mm (5.10 in.)
③	21 mm (0.83 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 not formatted to the NTFS file system. 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.

If the stereo is connected to a FUSION PartyBus network with a Wi-Fi router, you can also update the software using the FUSION-Link™ remote control app on your compatible Apple® or Android™ device. To download the app and update the device software, go to the Apple App StoreSM or the Google Play™ store.

¹ The device 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.

² The stereo may limit the output power to prevent the amplifier from overheating, and to maintain the audio dynamics.

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