GARMIN

GARMIN SIGNAL™ RM 100
Remote Station

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.

Failure to install this device according to these instructions could result in personal injury, damage to the vessel or device, or poor product performance.

⚠ CAUTION

For the best possible performance and to avoid potential injury, damage to the device, or damage to your vessel, installation by a qualified marine installer is recommended.

To avoid possible personal injury, 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 to avoid damaging the vessel.

Installation Considerations

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 (*Specifications*, page 7). 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, you should observe these considerations.

- To avoid interference from the radio and fist mic hanger with a magnetic compass, you must observe the compass-safe distance listed in the product specifications (*Specifications*, page 7).
- You should mount the fist mic within arm's reach of the device, so that you can reach both the device and the fist mic without moving.
- The mounting location must not be covered by metal objects or surfaces that may interfere with the wireless connection between the device and the fist mic.
- You should install at least one station in a location that allows you to operate the radio while you drive the boat.
- You should consider connecting the device and the fist mic to the same circuit, so that both devices are always turned on and off together.
- If you are upgrading from a different model, you may be able to reuse the existing cutout (*Retrofit Kit Considerations*, page 2).
- The mounting location must have approximately 115 mm (4 $^{1}/_{2}$ in.) of space behind the mounting surface, to minimize strain on the cables and connectors on the back of the device.
- If you are flush-mounting the device, the mounting surface material must be strong enough to support the weight of the device and protect it from excessive vibration or shock.
- If necessary, you can bail-mount the device using the bail-mount kit (sold separately). You can purchase the bail-mount kit from your Garmin® dealer or you can go to garmin.com/SignalVHF-Accessories.
- If you are installing the device in a location that may be exposed to water, you must mount it within 45 degrees of the horizontal plane so that water does not gather near the connectors on the back of the device.

You should add a drip loop to all connected cables to allow water to drip off of the cables and avoid damage to the device.

NOTE: If you are a boat builder, contact your Garmin representative for guidance before planning your build.

Retrofit Kit Considerations

You can install the Garmin Signal™ VHF radio into the existing cutout for a Garmin® VHF 210/215 radio using the retrofit kit (sold separately).

You can purchase the retrofit kit from your Garmin dealer, or you can go to garmin.com/SignalVHF-Accessories.

The retrofit kit is also compatible with other cutout dimensions (*Retrofit Compatibility Chart*, page 2).

Retrofit Compatibility Chart

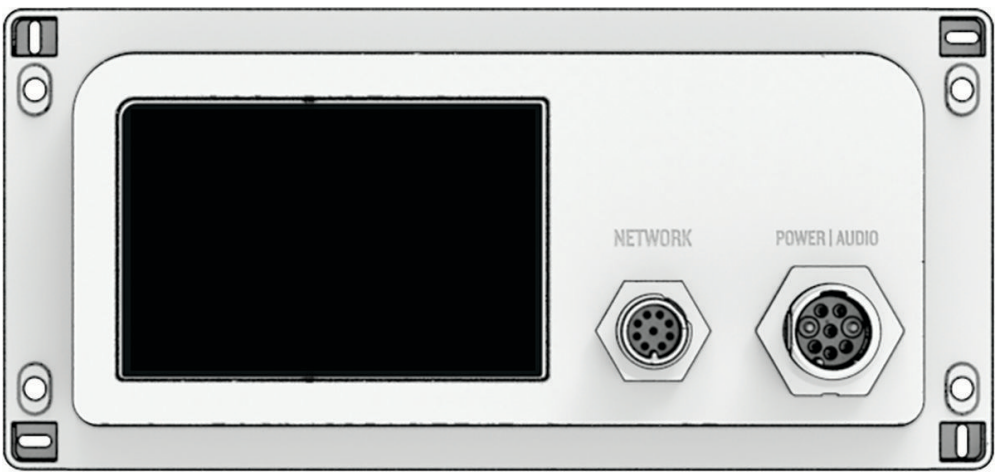
You can use the table below to determine whether you can flush-mount the Garmin Signal™ VHF radio into an existing dash cutout.

In some cases, such as replacing a Garmin® VHF 110/115 radio, you must download and print the retrofit kit template and use it as a guide to enlarge the existing cutout before you can install the Garmin Signal VHF radio using the retrofit kit (sold separately).

Cutout Dimensions	Compatibility
Smaller than 138 mm x 62 mm	Compatible. You can use the included mounting template to enlarge the cutout.
From 138 mm x 62 mm to 157.20mm x 66.50 mm	Compatible. You must use the Garmin Signal VHF radio retrofit kit (sold separately), and use the retrofit template to enlarge the cutout. Go to garmin.com/manuals/SignalVHF to download the retrofit kit template.
From 157.20 mm x 66.50 mm to 178 mm x 82 mm	Compatible. You must use the Garmin Signal VHF radio retrofit kit (sold separately). You do not need to modify the existing cutout.
Larger than 178 mm x 82 mm	Not compatible. You cannot use the equipment provided with the Garmin Signal VHF radio or the retrofit kit to install the radio in an opening this large.

You can purchase the retrofit kit from your Garmin dealer, or you can go to garmin.com/SignalVHF-Accessories.

Device Connections



Label	Description
POWER | AUDIO	Combined power and audio cable connector
NETWORK	Garmin BlueNet™ network connector

Garmin BlueNet™ Connection

NOTICE

The Garmin Signal™ RM 100 remote station does not operate without a connection to a Garmin Signal VHF 400/220 head unit.

You must connect the Garmin Signal RM 100 remote station directly to a Garmin Signal VHF 400/220 head unit using the Garmin BlueNet port on the head unit and the remote station, or through a Garmin BlueNet network on your boat.

For more information on Garmin BlueNet technology, you can go to garmin.com/manuals/BlueNet.

Networking Considerations

This device uses Garmin BlueNet™ networking technology, and is compatible with both Garmin BlueNet devices and Garmin® Marine Network devices.

Before connecting this device to your network, observe these considerations.

- If your boat is equipped with a Garmin BlueNet chartplotter, you should connect the Garmin Signal™ VHF radio head unit and remote stations to any open network ports on the Garmin BlueNet chartplotter or the Garmin BlueNet 20 switch, using Garmin BlueNet cables.
- If your boat is equipped with a Garmin BlueNet chartplotter and uses a Garmin BlueNet 30 gateway to connect Garmin Marine Network devices, you should connect the Garmin Signal VHF radio head unit and remote stations to the Garmin BlueNet side of your network, if possible, for the best performance and to best support future updates.
- If your boat is equipped with only Garmin Marine Network devices, you must use a Garmin Marine Network adapter cable to connect the Garmin Signal VHF radio head unit and each remote station to your network. You can purchase a Garmin Marine Network adapter cable from your local Garmin dealer (part number 010-12531-01) or you can go to garmin.com/accessories/GMNAdapterCable.

NOTICE

A Garmin Signal VHF radio remote station connected to the Garmin Marine Network side of a hybrid network cannot communicate with a Garmin Signal VHF radio head unit connected to the Garmin BlueNet side of the network. You must connect all Garmin Signal VHF radio devices to the same side of the network.

For more information and best practices for building your marine network, go to garmin.com/manuals/BlueNet.

Power and Audio Connections

The power and audio cable bundles together the wires for connecting the Garmin Signal™ VHF radio to external audio equipment and the power supply.

Wire Color	Connection
Red	Power supply (+)
Black	Power supply (−)
White	External speaker (+)
White and black	External speaker (−)
Gray	Not used
Gray and black	Not used

Audio Connections

NOTICE

You must turn off the device before making any audio connections. Connecting audio equipment while the device is turned on may cause damage to the 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.

You can connect an external speaker to play incoming VHF transmissions. You can purchase a suitable external speaker for the Garmin Signal™ VHF radio from your Garmin® dealer, or you can go to garmin.com/SignalVHF-Accessories.

Connecting to Power

⚠ WARNING

When connecting the power cable, do not remove the inline fuse holder. To prevent the possibility of personal injury or product damage caused by fire or overheating, the appropriate fuse must be in place as indicated in the product specifications. Connecting the power cable without the appropriate fuse in place voids the product warranty.

You should connect the red wire to the power source through the ignition or another manual switch to turn the device on and off.

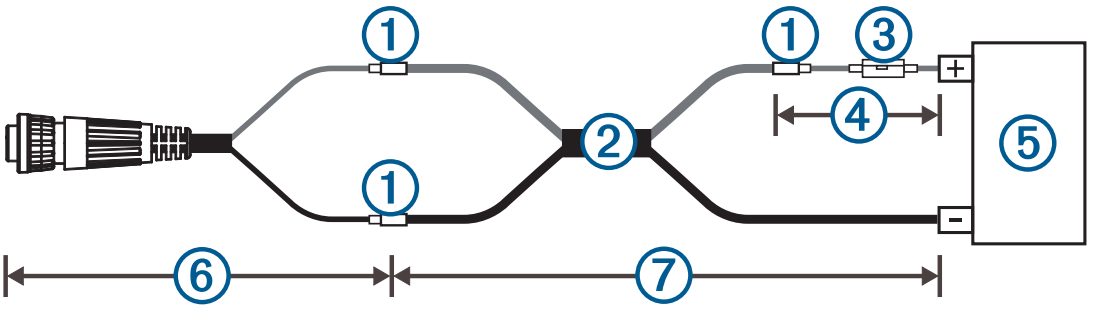
1 Route the power cable to the power source.

If necessary, you can extend the power cable (*Power Cable Extensions*, page 4).

2 Connect the red power wire to the ignition or another manual switch, and connect the switch to the positive (+) battery terminal if necessary.
3 Connect the black wire to the negative (−) battery terminal or to ground.

Power Cable Extensions

If necessary, you can extend the power cable using the appropriate wire gauge. You must always use marine-grade connectors or solder and water-resistant heat-shrink tubing when extending the power wires.



1	Splice
2	Extension wires (16 AWG)
3	Fuse (10 A, 32 V (blade type))
4	20 cm (7 7/8 in.) portion of the original red wire containing the inline fuse
5	Power source
6	180 cm (70 7/8 in.) portion of the original power cable
7	18 m (60 ft.) maximum extension

Flush Mounting the Device

NOTICE

Be careful when cutting the hole to flush mount the device. 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 device after it is mounted.

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

Before cutting or drilling to flush mount the device, make sure there is at least approximately 115 mm (4 1/2 in.) of space behind the mounting surface to minimize strain on the cables and connectors on the back of the device.

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

1 Trim the template and make sure it fits in the location where you want to mount the device.
2 Affix the template to the mounting location using adhesive tape.
3 Using a 10 mm (3/8 in.) drill bit, drill one or more starting holes on the corners of the cutout line indicated on the template.
4 Using a jigsaw or rotary tool, cut the mounting surface along the solid line indicated on the template.
5 Remove the template from the mounting surface and discard it.
6 Place the device in the cutout to test the fit.
7 If necessary, use a file and sandpaper to refine the size of the cutout.
8 After the device fits correctly in the cutout, mark the locations of the pilot holes for the four mounting screws, using the device as a template.
9 Remove the device from the cutout.

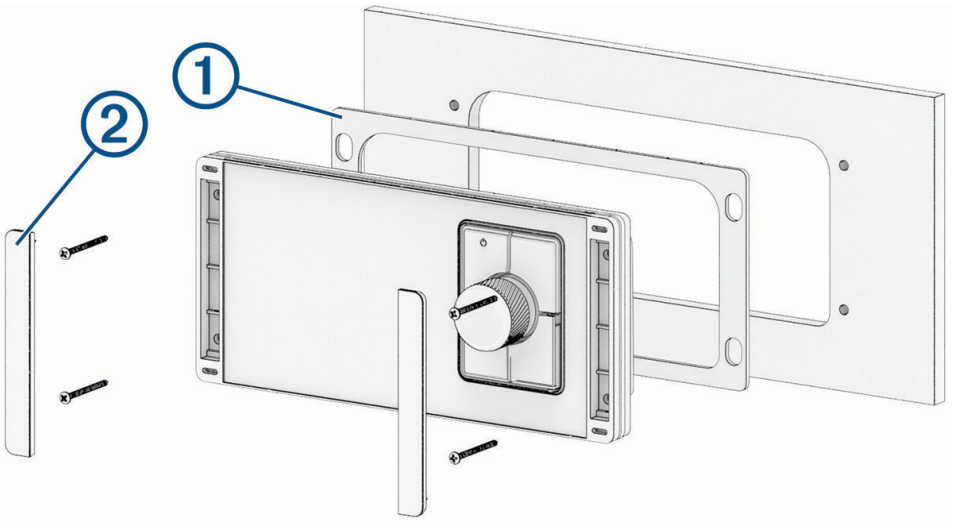
NOTICE

Do not drill the pilot holes into the mounting surface through the mounting holes on the device, to avoid damaging the device.

10 Using a 2 mm ($^{3}/_{32}$ in.) drill bit, drill the pilot holes.

11 Select an option:

- If you are installing the device in a dry location, peel off the adhesive backing liner from the included foam gasket ① and install it on the back of the device.



- If you are installing the device in a location that is exposed to water, do not install the included foam gasket.

  You must apply silicone-based marine sealant to the mounting surface immediately before securing the device to the mounting surface.

12 If you will not have access to the back of the device after you mount it, connect all necessary cables to the device (*Device Connections*, page 2).

NOTE: Make sure the weather cap is installed on any unused connectors, to prevent corrosion of the metallic contacts.

13 If you did not install the self-adhesive gasket on the device, apply silicone-based marine sealant to the mounting surface around the cutout.

NOTICE

You should apply marine sealant only if you did not install the self-adhesive gasket. Using sealant and the gasket together may reduce water resistance.

14 Place the device in the cutout.

15 Secure the device to the mounting surface using the included screws.

NOTICE

Do not overtighten the screws. Overtightening the screws may damage the device or the mounting surface.

16 Press the screw covers ② into place, over the sides of the device.

Installing the Fist Mic

NOTICE

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

The fist mic connects to the radio wirelessly and is paired with the radio at the factory. If you need to pair the fist mic again, see the *Owner's Manual* at garmin.com/manuals/SignalVHF for instructions.

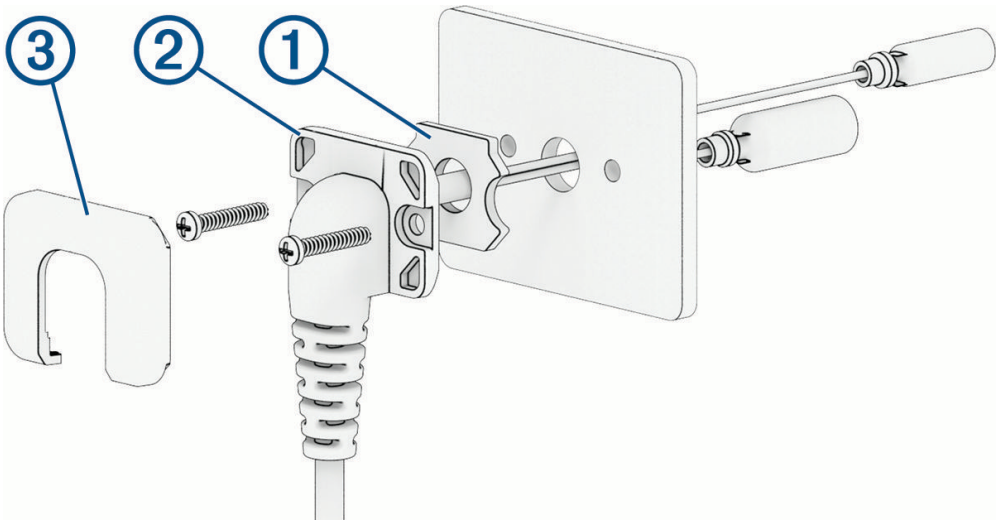
The fist mic power cable has a built-in cable gland that connects to the bulkhead to provide strain relief and allow for the wire connections to be protected behind the mounting surface.

1 Using a 10 mm ($^{3}/_{8}$ in.) drill bit, drill the cable pass-through hole through the mounting surface.

2 Route power cable from the power supply and out through the cable pass-through hole.

3 Select an option:

- If you are installing the device in a dry location, feed the fist mic cable through the self-adhesive gasket ①, peel off the adhesive backing liner, and affix the gasket to the inside of the cable gland ②.



NOTE: You should examine the shape of the gasket and make sure its orientation is correct. The gasket and the inside of the cable gland have matching features to ensure a good seal.

- If you are installing the device in a location that is exposed to water, do not install the self-adhesive gasket.

  You must apply silicone-based marine sealant to the mounting surface immediately before securing the cable gland to the mounting surface.

4 Connect the red and black wires from the fist mic to the corresponding wires from the power supply.

TIP: You should connect the device and the fist mic to the same circuit, so that both devices are always turned on and off together.

5 Feed the fist mic cable into the mounting surface and place the cable gland flush against the surface.

6 Mark the location of the pilot holes for the mounting screws.

7 Remove the cable gland from the mounting surface, and drill the pilot holes using a 2 mm ($^{3}/_{32}$ in.) drill bit.

NOTICE

Do not drill the pilot holes through the mounting holes on the cable gland, to avoid damaging it.

8 If you did not install the self-adhesive gasket on the cable gland, apply silicone-based marine sealant to the mounting surface around the cable pass-through hole.

NOTICE

You should apply marine sealant only if you did not install the self-adhesive gasket. Using sealant and the gasket together may reduce water resistance.

9 Feed the fist mic cable into the mounting surface again and place the cable gland flush against the surface.

10 Secure the cable gland to the mounting surface using the included screws.

NOTICE

Do not overtighten the screws. Overtightening the screws may damage the device or the mounting surface.

11 Snap the screw cover ③ over the screw heads on the cable gland.

Installing the Fist Mic Hanger

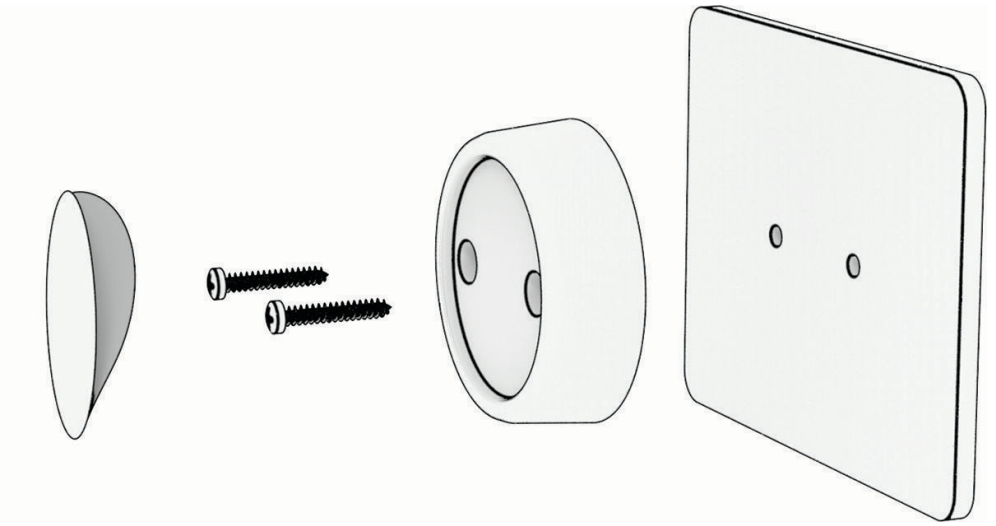
⚠ WARNING

The fist mic hanger contains a magnet. Under certain circumstances, magnets may cause interference with some medical devices, including pacemakers and insulin pumps. Keep the fist mic hanger away from such medical devices.

NOTICE

To avoid interference with a magnetic compass, you must observe the compass-safe distance listed in the product specifications (*Specifications*, page 7).

1 Using the fist mic hanger as a template, mark the locations of the pilot holes.



2 Remove the fist mic hanger, and drill the pilot holes using a 2 mm ($^{3}/_{32}$ in.) drill bit.

NOTICE

You must remove the fist mic hanger from the mounting surface before drilling the pilot holes. Drilling the pilot holes through the mounting holes on the fist mic hanger may damage the fist mic hanger.

3 Secure the fist mic hanger to the mounting surface using the included screws.

4 Affix the self-adhesive screw cover to the fist mic hanger.

Specifications

Specification	Measurement
Dimensions (H x W x D)	Remote station: 75 x 160 x 29 mm (3.0 × 6.3 × 1.2 in.) Fist mic: 100 × 60 × 31 mm (3.9 × 2.4 × 1.2 in.)
Weight	Remote station: 240 g (0.53 lbs.) Fist mic: 245g (0.54 lbs.)
Operating temperature range	From −20° to 55°C (from −4° to 131°F)
Water rating	Remote station: IEC 60529 IPX6 and IPX7[1] Fist mic: IEC 60529 IPX7[2]
Compass-safe distance	Remote station: 70 cm (27 $^{9}/_{16}$ in.) Fist mic and fist mic hanger: 40 cm (15 $^{3}/_{4}$ in.)
Operating voltage	From 9.6 to 32 Vdc
Current draw @ 12 V	Remote station: 400 mA, 1.8 A maximum Fist mic: 90 mA, 0.9 A maximum
Maximum fist mic speaker output power	5 W RMS, <1% THD
Maximum external speaker output power	15 W RMS, <1% THD, 4 Ω
Wireless frequency and output power	2400 – 2480 MHz: < 10dBm

[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 device withstands incidental exposure to water of up to 1 m for up to 30 min. For more information, go to www.garmin.com/waterrating.

Remote station M/N: A04937

Fist mic M/N: A04936