GARMIN

AIS 800 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.

⚠ 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.

FCC Compliance

NOTICE

In the USA, it is prohibited under FCC regulations to enter incorrect or improper data, and it is prohibited for any person other than the manufacturer or the installing dealer to input MMSI number.

It is a violation of the rules of the FCC to input an MMSI number that has not been properly assigned to the user, or to otherwise input any inaccurate data in this device.

Assigning Data to the Device

You must program the AIS 800 device with a valid vessel MMSI number before installing the device on your boat. The device operates in silent mode without a valid MMSI number. In silent mode, the device receives AIS signals, but does not transmit position data. You can program the device to transmit static vessel data including the vessel name, call sign, type, and dimensions, which can include the location of your boat's GPS antenna.

Installing the AIS 800 Software on Your Computer

1. Go to www.garmin.com/AIS800, select **Software**, and download the .zip file to your computer.
2. Connect the included USB cable to your computer and the USB port on the AIS 800 device.

   NOTE: While you program with the USB cable, you may need to disconnect all other cables from the AIS 800 device to prevent a ground loop between the computer and your vessel power.
3. Double-click the .exe file, and follow the on-screen instructions.

Programming the AIS 800

Before the device can be used on a boat, it must be programmed with a unique MMSI number and with additional vessel-specific static data. The MMSI number must be programmed by an authorized marine electronics dealer or installer.

Before you can program the device, you must install the AIS 800 software on your computer (*Installing the AIS 800 Software on Your Computer*, page 1).

1. In the program, select the **Static data** tab.
2. In the **Connection and Status** window, select a **COM** port from the drop-down list.
3. Select **Connect**.
4. Enter your ship name, call sign, dimensions, vessel type, and MMSI number (*Assigning an MMSI Number to the AIS 800*, page 1).
5. Select **Save data to AIS 800**.

   NOTE: The data is lost if the AIS 800 device is turned off. You must select Save data to AIS 800 to permanently save your data.
6. Select **File** > **Exit**.

Assigning an MMSI Number to the AIS 800

1. Launch the AIS 800 setup software.
2. In the **Connection and Status** window, select a **COM** port from the drop-down list.
3. Select **Connect**.
4. In the **Static Data** window, enter your nine-digit MMSI number in the **MMSI Number** field.

   NOTICE

   You cannot change the MMSI number after you assign the MMSI number to your boat. If you assign an incorrect MMSI number, you must return the device to the manufacturer for a factory reset.
5. Select **Save data to AIS 800**.

Tools Needed

- Drill
- Drill bits appropriate for the surface and hardware
- Phillips screwdriver
- Pencil

Mounting 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. 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.

- You must mount the device in a location where it will not be submerged.
- You must mount the device in a location with adequate ventilation where it will not be exposed to extreme temperatures.

For optimal internal GPS reception:

- You should mount the device in a location where it is above the water line when the ship is in the water.
- You should mount the device as far as possible, at least 20 cm (7.9 in.), from cables, electronics, metal objects, and other potential sources of GPS interference.
- If you mount the device in a boat with a metal hull, you must connect the device to an external GPS antenna (sold separately).
- If possible, you should mount the device horizontally, with the face of the device pointing upward or vertically with the LEDs facing upward. The GPS is most sensitive in these positions.

VHF Antenna Mounting and EME Exposure

⚠ WARNING

Radio operators with cardiac pacemakers, life-support machines, or electrical medical equipment should not be exposed to excessive radio-frequency (RF) fields, because the RF field may interfere with the function of their medical equipment.

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⚠ CAUTION

This device generates and radiates radio frequency (RF) electromagnetic energy (EME). Failure to observe these guidelines may expose people to RF radiation absorption exceeding the maximum permissible exposure (MPE).

Garmin® declares a MPE radius of 2.48 m (97.64 in.) for this system, which was determined using 5 W output to an omni-directional, 6 dBi gain antenna. The antenna should be installed to maintain a distance of 2.48 m (97.64 in.) between the antenna and all people.

Mounting the Device

NOTICE

If you are mounting the device in fiberglass, when drilling the pilot holes, it is recommended to 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.

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

NOTE: Mounting hardware is included with the device, but it may not be suitable for the mounting surface.

1. Place the device in the mounting location and mark the location of the pilot holes.
2. Using a bit appropriate for the surface and the mounting hardware, drill a pilot hole for one corner of the device.
3. Loosely fasten the device to the surface with one corner and examine the other three pilot-hole marks.
4. Mark new pilot-hole locations if necessary.
5. Remove the device from the mounting surface.
6. Drill the appropriate pilot holes for the other three marks.
7. Secure the device to the mounting location.

Connection Considerations

Connecting the Wiring Harness to Power

1. Route the wiring harness to the power source and to the device.
2. Connect the red wire to the positive (+) battery terminal, and connect the black wire to the negative (-) battery terminal.

Connecting a VHF Antenna

1. Mount the VHF antenna (sold separately) according to the installation instructions provided with the antenna.

   NOTE: You can purchase a VHF extension cable. Go to buy.garmin.com or contact your Garmin dealer.
2. Connect the VHF antenna to the VHF ANT port on the AIS 800 device.

Connecting the Device to a Remote GPS Antenna

This device must receive GPS information for proper functionality. The device includes an internal GPS antenna. If your mounting location does not provide good GPS reception, you can install a remote GPS antenna (not included) and connect it to the device.

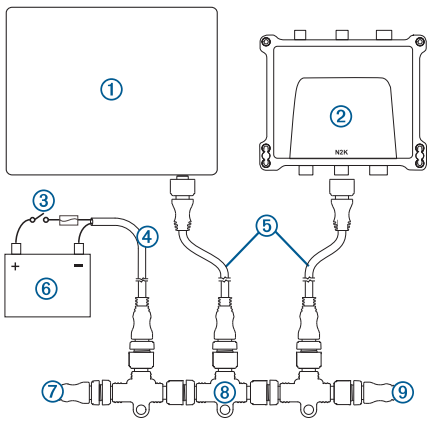
1. Follow the instructions provided with your external GPS antenna to install it on your boat correctly.
2. Route the GPS antenna cable to the back of your device, away from sources of electrical interference.
3. Connect the GPS antenna cable to the GPS ANT port on your device.

NMEA 2000® Device Connections

NOTICE

If you are installing a NMEA 2000 power cable, you must connect it to the boat ignition switch or through another in-line switch. NMEA 2000 devices will drain your battery if the NMEA 2000 power cable is connected to the battery directly.

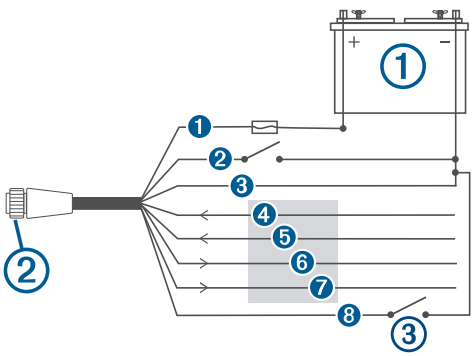
If you are unfamiliar with NMEA 2000, you should read the "NMEA 2000 Network Fundamentals" chapter of the *Technical Reference for NMEA 2000 Products*. Go to www.garmin.com/manuals.



Item	Description
①	Compatible NMEA 2000 chartplotter or other device
②	AIS 800 device
③	Ignition or in-line switch
④	NMEA 2000 power cable
⑤	NMEA 2000 drop cable
⑥	12 Vdc power source
⑦	NMEA 2000 terminator or backbone cable
⑧	NMEA 2000 T-connector
⑨	NMEA 2000 terminator or backbone cable

NMEA® 0183 Device Connections

This diagram illustrates two-way connections for both sending and receiving data. You can also use this diagram for one-way communication. To receive information from a NMEA 0183 device, refer to items ❹, ❺, and ❽ when connecting the Garmin device. To transmit information to a NMEA 0183 device, refer to items ❻ and ❼ when connecting the Garmin device.



Item	Description
①	Power source
②	Power/NMEA 0183 cable
③	Silent-mode switch (optional, not included)

Wire	Garmin Wire Color	Garmin Wire Function
❶	Red	Power
❷	Yellow	ACC on
❸	Black	Power ground
❹	Purple	RxA (+)
❺	Gray	RxB (-)
❻	Blue	TxA (+)
❼	Brown	TxB (-)
❽	Green	Silent-mode (receive only),optional

Appendix

Specifications

Dimensions (W x H x D)	175 x 142.3 x 54.5 mm (6.9 x 5.6 x 2.1 in.)
Weight	414 g (0.9 lbs.)
Operating temperature range	From -15° to 55°C (from 5° to 131°F)
Storage temperature range	From -20° to 75°C (from -4° to 167°F)
Water rating	IEC 605290 IPX7[1]
Power input	12 to 24 Vdc, 2 A max.
Current draw	12 Vdc: less than 400 mA 24 Vdc: less than 250 mA
Fuse	5 A, 125 V fast-acting
NMEA 2000 LEN	2
Transmit power	5 W (1 W remote switchable by authorities)
Antenna port impedance	50 ohm
Wireless frequency/protocol	162 MHz @ 37 dBm nominal
Compass-safe distance	40 cm (15 3/4 in.)

NMEA 2000 PGN Information

Type	PGN	Description
Receive	059392	ISO acknowledgment
	059904	ISO request
	060928	ISO address claim
	126208	NMEA: Command, request, acknowledge group function
	126992	System time
Transmit	059392	ISO acknowledgment
	060928	ISO address claim
	126208	NMEA: Command, request, acknowledge group function
	126464	PGN list
	126996	Product information
	129038	AIS class A position report
	129039	AIS class B position report
	129040	AIS class B extended position report
	129041	AIS aids to navigation (AtoN) report
	129794	AIS class A static and voyage related data
	129795	AIS addressed binary message
	129797	AIS binary broadcast message
	129798	AIS SAR aircraft position report
	129802	AIS safety related broadcast message
	129809	AIS class B "CS" static data report, part A
	129810	AIS class B "CS" static data report, part B

Status LEDs

LED	State	Description
VHF TX	Solid	A connected VHF radio is transmitting.
Error	Solid	The device has encountered a critical error. You can connect the device to a computer, and use the AIS 800 setup software to view detailed information about the warning condition.
SRM	Flashing	Reserved for future use.
Warning	Solid	The device detects a warning condition. You can connect the device to a computer, and use the AIS 800 setup software to view detailed information about the warning condition.
RX Only	Solid	The device is in silent mode or not ready to transmit. **NOTE:** The AIS 800 device does not transmit without a GPS signal or an MMSI number, when the AIS base station commands a quiet time, or when the device encounters a critical error.
TX	Flashing	The device is sending an AIS message.
RX	Flashing	The device is receiving an AIS message.
Power	Solid	The device is ready to transmit and receive.
VHF TX, Error, Warning, and Power.	Solid	When these four LEDs are illuminated, the device is connected only to a computer for programming by a USB cable.

NMEA 0183 Sentences Supported

Sentence	Definition
ACA	AIS Regional Channel Assignment Message
ALR	Set alarm state
GGA	Glocal positioning system fix data
RMC	Recommended minimum specific GNSS data
SSD	AIS ship static data
TXT	Text transmission, general purpose
VDM	AIS VHF data-link message
VDL	AIS VHF data-link own-vessel report
VER	Version
VSD	AIS voyage static data

Testing for Interference from LED Lights

LED lighting from sources such as navigation lights, searchlights, floodlights, interior and exterior lights, and adornments can interfere with your AIS 800 device. Radio interference can cause poor reception, jam radio signals, and create a safety hazard in emergency situations. You should test for LED interference before mounting the VHF antenna.

[1] 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.

NOTICE

If your LED lights interfere with the AIS 800 device, you must mount the VHF antenna farther away from the LED lights, or use non-jamming lights.

1. Turn off all LED lights.
2. Turn on your chartplotter and AIS 800 device.
3. Observe the moving AIS targets on the chartplotter screen for at least one minute.
4. Turn on all LED lights.
5. Observe the moving AIS targets on the chartplotter screen for at least one minute.

   If most of the moving AIS targets disappear from the screen, the LED lights interfere with the AIS 800 device reception.

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