NMEA 2000 GPS Heading Sensor
Installation Guide

532997-1_B

HUMMINBIRD®

Accessory Manual

Thank You!

Thank you for choosing Humminbird®, the #1 name in marine electronics. Humminbird has built its reputation by designing and manufacturing top-quality, thoroughly reliable marine equipment. Your Humminbird accessory is designed for trouble-free use in even the harshest marine environment. In the unlikely event that your Humminbird accessory does require repairs, we offer an exclusive Service Policy. For complete details, see the separate warranty card included with your accessory. We encourage you to read this operations manual carefully in order to get full benefit from all the features and applications of your Humminbird product.

Contact Humminbird Technical Support through our Help Center at **https://humminbird-help.johnsonoutdoors.com/hc/en-us**.

⚠ WARNING
This device should not be used as a navigational aid to prevent collision, grounding, boat damage, or personal injury. When the boat is moving, water depth may change too quickly to allow time for you to react. Always operate the boat at very slow speeds if you suspect shallow water or submerged objects.
The electronic chart in your Humminbird unit is an aid to navigation designed to facilitate the use of authorized government charts, not to replace them. Only official government charts and notices to mariners contain all of the current information needed for the safety of navigation, and the captain is responsible for their prudent use.
Compass Safe Distance: Do NOT install the Heading Sensor near ferrous metals or near anything that may create a magnetic field or interference. The Heading Sensor must be installed at least 3 feet (1m) from other magnetic or ferrous materials on the boat.
Humminbird is not responsible for the loss of data files (waypoints, routes, tracks, groups, recordings, etc.) that may occur due to direct or indirect damage to the unit's hardware or software. It is important to back up your control head's data files periodically. Data files should also be saved to your PC before restoring the unit's defaults or updating the software. See your Humminbird online account at **humminbird.johnsonoutdoors.com**.
Disassembly and repair of this electronic unit should only be performed by authorized service personnel. Any modification of the serial number or attempt to repair the original equipment or accessories by unauthorized individuals will void the warranty.

ENVIRONMENTAL COMPLIANCE STATEMENT: It is the intention of Johnson Outdoors Marine Electronics, Inc. to be a responsible corporate citizen, operating in compliance with known and applicable environmental regulations, and a good neighbor in the communities where we make or sell our products.

WEEE DIRECTIVE: EU Directive 2002/96/EC "Waste of Electrical and Electronic Equipment Directive (WEEE)" impacts most distributors, sellers, and manufacturers of consumer electronics in the European Union. The WEEE Directive requires the producer of consumer electronics to take responsibility for the management of waste from their products to achieve environmentally responsible disposal during the product life cycle.

WEEE compliance may not be required in your location for electrical & electronic equipment (EEE), nor may it be required for EEE designed and intended as fixed or temporary installation in transportation vehicles such as automobiles, aircraft, and boats. In some European Union member states, these vehicles are considered outside of the scope of the Directive, and EEE for those applications can be considered excluded from the WEEE Directive requirement.

This symbol (WEEE wheelie bin) on product indicates the product must not be disposed of with other household refuse. It must be disposed of and collected for recycling and recovery of waste EEE. Johnson Outdoors Marine Electronics, Inc. will mark all EEE products in accordance with the WEEE Directive. It is our goal to comply in the collection, treatment, recovery, and environmentally sound disposal of those products; however, these requirements do vary within European Union member states. For more information about where you should dispose of your waste equipment for recycling and recovery and/or your European Union member state requirements, please contact your dealer or distributor from which your product was purchased.

ROHS STATEMENT: Product designed and intended as a fixed installation or part of a system in a vessel may be considered beyond the scope of Directive 2002/95/EC of the European Parliament and of the Council of 27 January 2003 on the restriction of the use of certain hazardous substances in electrical and electronic equipment.

CE **EU DECLARATION OF CONFORMITY:** Hereby, Humminbird declares that this device is in compliance with the essential requirements and other relevant provisions of Directive 2014/53/EU. The declaration of conformity may be consulted at https://humminbird.johnsonoutdoors.com/us/european-union-declarations-conformity-radio-equipment-rohs-and-ce.

This product has been so constructed that the product complies with the requirement of Article 10(2) as it can be operated in at least one Member State as examined and the product is compliant with Article 10(10) as it has no restrictions on putting into service in all EU member states.

NOTES

Some features discussed in this manual require a separate purchase. Every effort has been made to clearly identify those features. Please read the manual carefully in order to understand the full capabilities of your model.

The illustrations in this manual may not look the same as your product, but your unit will function in the same way.

To purchase accessories, visit our Web site at **humminbird.johnsonoutdoors.com** or Contact Humminbird Technical Support through our Help Center at **https://humminbird-help.johnsonoutdoors.com/hc/en-us**.

The procedures and features described in this manual are subject to change without notice. This manual was written in English and may have been translated to another language. Humminbird is not responsible for incorrect translations or discrepancies between documents.

Table of Contents

Overview

The Humminbird NMEA 2000 GPS Heading Sensor Accessory Kit includes the following:

- Sensor with dual-band GPS receiver, compass, and NMEA 2000® interface. Cable length is 20 ft (6m)
- NMEA 2000 direct cable
- SAE power cable
- Stem
- Hardware kit for stem or deck mounting
- Installation guide

NOTE

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The AS GPS HS N2K is compatible with the following Humminbird fish finders:

- XPLORE Series™
- APEX Series™
- SOLIX Series™
- HELIX G4N™

The following functionality will be supported by your fish finder when it is connected to the Sensor:

- View current position and track
- View precision speed and heading from your GPS receiver
- Mark tracks and waypoints
- Travel a route and navigate from one waypoint to the next
- NMEA 2000 plug-and-play interface
- Track vessel pitch and roll (attitude)

How GPS and Trackplotting Work

Your Humminbird uses GPS to determine your position and display it on a grid.

GPS uses a constellation of satellites that continually send radio signals to the earth. The GPS receiver on your boat receives signals from satellites that are visible to it. Based on time differences between each received signal, the GPS receiver determines its distance to each satellite. With distances known, the GPS receiver mathematically triangulates its own position. With up to 10 updates per second, the GPS receiver then calculates its velocity and bearing.

GPS has highly accurate position capabilities, typically within +/– 2.5 to 10 meters, depending on your conditions and your Humminbird model. This means that 95% of the time, the GPS receiver will read a location within +/– 2.5 to 10 meters of your actual position.

Your dual-band GPS receiver also uses information from WAAS (the Wide Area Augmentation System), EGNOS (the European Geostationary Navigation Overlay Service), and GLONASS, Galileo, BeiDou, QZSS, and IRNSS satellites if they are available in your area.

How the Heading Sensor Works

The magnetic compass is one of the first known instruments for navigation. It relies on the earth's magnetic field to align a magnetic pointer towards North, also known as Magnetic North.

The fish finder will display the heading from the internal compass in digital format. The Heading is the direction the boat is pointing, where 000° is North, 090° is East, 180° is South, and 270° is West.

Due to wind and waves, the boat is often traveling in a slightly different direction than its heading. The direction of travel, or Course Over Ground, is provided by the GPS receiver. You can use the compass Heading with the GPS Course Over Ground and Bearing to navigate a route.

A compass' Magnetic North is affected by the local variations in the earth's magnetic field around the globe. Nautical charts will often provide the magnetic declination, or magnetic variation, for a local area so that you can confirm that Magnetic North matches True North. If you have trailered the boat to a new location, the compass' operation may also be affected by a different magnetic zone. The Humminbird fish finder compensates for magnetic declination and also allows you to make additional adjustments from the menu system.

How NMEA 2000 Works

NMEA 2000 is a plug-and-play communication standard used in the maritime industry for connecting engines, instruments, and sensors on boats. The plug-and-play interface allows multiple devices to communicate with each other within the same network without causing interference between devices.

NMEA 2000 Messages (PGN)

The following NMEA 2000 input/output messages are available when NMEA 2000 is turned on and the AS GPS HS N2K Sensor is detected and selected as a source.

Message (PGN)	Description
126028	NMEA Group Function
126464	PGN List
126992	System Date/Time
126993	Heartbeat
126996	Product Information
126998	Configuration Information
127250	Heading Information
127251	Rate of Turn
127252	Heave
127257	Attitude
127258	Magnetic Variation
129025	Position Rapid Update
129026	COG, SOG
129027	Position High Precision
129029	Position
129539	GNSS DOPs
129540	GNSS SATs

Installation Overview

Installation Preparation

Use the following instructions to install the Sensor accessory on your boat.

Read the instructions in this guide completely to understand the installation requirements before starting the installation.

Supplies: In addition to the hardware included with your accessory kit, you will need a drill, electrical tape, and an awl or pencil. Depending on your installation requirements, you might also need to purchase NMEA 2000 network components.

1. Choose the Mounting Location

It is important to consider the following information when you choose a mounting location for the Sensor:

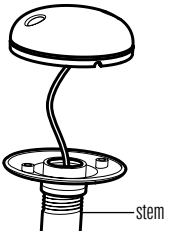
- **Interference:** Do NOT mount the Sensor close to a VHF antenna or within the active area of a radar. Do NOT install it near ferrous metals or near anything that can create a magnetic field. Hardware and cables that handle large currents, such as batteries and power cables, are also examples of equipment that may cause interference.
- **Reception:** Mount the Sensor in an area that has full exposure to the sky. The effective area of reception is 5˚ above the horizon.
- **Surface:** Whether the Sensor Cable will be routed down through the mounting surface or to the side, or if you're using a stem mount, the mounting surface will influence how you install the Sensor. For details, see ***Section 2: Install the Sensor***.
- **Cables:** Test run the Sensor Cable from the chosen mounting location to the fish finder or the NMEA 2000 backbone (see ***Section 3: Connect to the Fish Finder***).

NOTE

To purchase drop cables or other related accessories, visit our Web site at **humminbird.johnsonoutdoors.com** or contact Humminbird Technical Support through our Help Center at **https://humminbird-help.johnsonoutdoors.com/hc/en-us**.

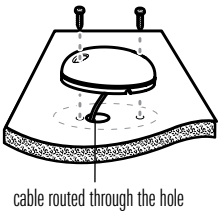
2. Install the Sensor

There are three different options to mount the sensor. Proceed to the section that matches the type of mounting location you will be using, as follows:



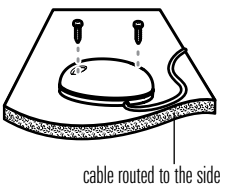
Stem Mount with 1" - 14 Thread

The sensor will be mounted on a stem or antenna pole. ***Proceed to Section A***.



Access Under the Mounting Deck

The sensor will be deck mounted and the cable can be routed down through the mounting surface. ***Proceed to Section B.***



NO Access Under the Mounting Deck

The sensor will be deck mounted and the cable must routed to the side because there is not space for a cable through or underneath the mounting location. ***Proceed to Section C.***

A. Stem Mount with 1"-14 Thread

Use the following instructions to stem mount the Sensor:

⚠ CAUTION

Do NOT mount the Sensor to a stem mount or antenna pole that contains ferrous metals.

NOTE

It is important to review the mounting considerations and test run the cable route as indicated in Section 1 before proceeding with the installation.

1. **If you have a pre-existing stem mount**, skip to step 2.

   If you need to mount the antenna pole (stem), mark the chosen mounting location and drill a 5/8" (15.9 mm) hole for the cable and cable connector.

   If you have purchased hardware to stem mount your Sensor, follow the instructions included with that hardware to attach the stem to the boat.

2. Screw the sensor base onto the stem first, making sure that the stem pipe does not protrude from the sensor base. (This adds protection to the cable when it is pulled through the pipe stem.) Deburr the pipe edges to reduce cable abrasion.

3. Route the Sensor cable through the stem and through the planned cable route.

4. Position the sensor so the arrow on the cover is pointed straight toward the front of the boat in the direction of travel. The arrow should be parallel with the keel.

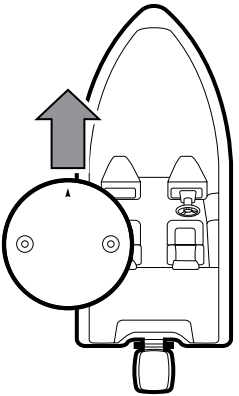
NOTE

Failure to align the sensor correctly will result in incorrect compass readings.

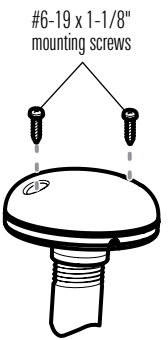
5. Attach the Sensor to its base using the included #6-19 x 1-1/8" screws. **Hand tighten only.**

NOTE
If you use mounting hardware other than the provided screws, the hardware must be non-ferrous brass or nickel to prevent magnetic interference.
Do not over-tighten.

Positioning the Arrow on the Compass



Attaching the Sensor to the Base



B. Access Under Mounting Location

Use the following instructions to deck mount the Sensor and route the cable down through the mounting surface:

NOTE

It is important to review the mounting considerations and test run the cable route as indicated in Section 1 before proceeding with the installation.

1. Mark the mounting location and drill a 5/8" (15.9 mm) hole for the cable and cable connector.
2. Route the Sensor Cable through the planned cable route.
3. Cover the cable hole with the Sensor.

   Position the sensor so the arrow on the cover is pointed straight toward the front of the boat in the direction of travel. The arrow should be parallel with the keel.

NOTE

Failure to align the sensor correctly will result in incorrect compass readings.

4. Make sure the Sensor is flush against the surface, and mark the two mounting holes with a pencil or awl.
5. Move the Sensor to the side and drill two pilot holes, using a 5/32" (4 mm) bit.

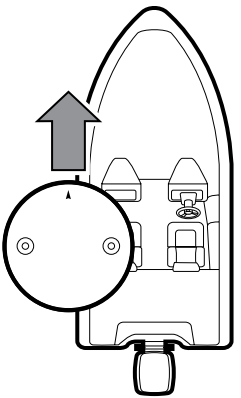
NOTE

Apply marine-grade silicone caulk or sealant to both screw and drilled holes as needed to protect your boat from water damage.

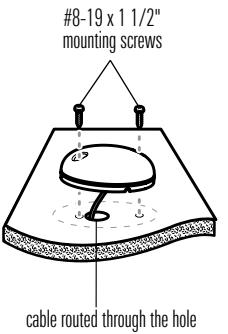
6. Align the Sensor's screw holes over the pilot screw holes and attach with the #8-19 x 1 1/2" Phillips head screws. **Hand tighten only.**

NOTE
If the mounting surface is thin or made of a light-weight material, you may need to add reinforcing material below the mounting surface in order to support the Sensor.
If you use mounting hardware other than the provided screws, the hardware must be non-ferrous brass or nickel to prevent magnetic interference.

Positioning the Arrow on the Compass



Attaching the Sensor to the Mounting Surface



C. No Access Under Mounting Location

Use the following instructions to deck mount the Sensor and route the cable to the side if there is not space for a cable underneath the mounting location.

NOTE

It is important to review the mounting considerations and test run the cable route as indicated in Section 1 before proceeding with the installation.

1. Route the cable from the Sensor to the fish finder.
   - The Sensor has two wire routing notches. Use the cable notch closest to the intended cable route.
   - If holes are required to route the cable, they must be 5/8" (15.9 mm) to allow for the cable connector.
2. With the cable routed, position the Sensor in the planned mounting location.

   Position the sensor so the arrow on the cover is pointed straight toward the front of the boat in the direction of travel. The arrow should be parallel with the keel.

NOTE

Failure to align the sensor correctly will result in incorrect compass readings.

3. Make sure the Sensor is flush against the surface, and mark the two mounting holes with a pencil or awl.
4. Move the Sensor to the side and drill the two 5/32" (4 mm) pilot holes.

NOTE

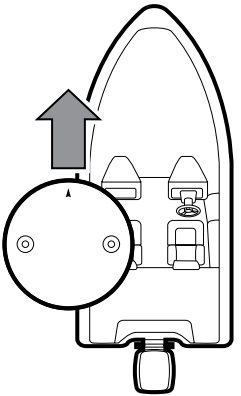
Apply marine-grade silicone caulk or sealant to both screw and drilled holes as needed to protect your boat from water damage.

5. Align the Sensor's screw holes over the pilot screw holes and attach with the #8-19 x 1 1/2" Phillips head screws. **Hand tighten only.**

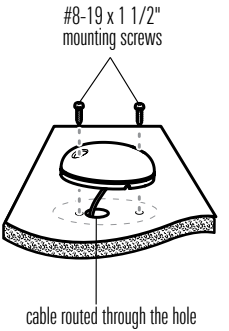
NOTE

Use included hardware. All hardware must be non-ferrous brass or nickel to prevent magnetic interference.

Positioning the Arrow on the Compass



Attaching the Sensor to the Mounting Surface



3. Connect to the Fish Finder

There are two different options to connect the Sensor to your Fish Finder. You can connect the Sensor to your existing NMEA 2000 backbone, or you can connect the Sensor directly to your fish finder, which requires an external power source.

NOTE

Connecting the Sensor directly to the fish finder requires using the included NMEA 2000 Direct Cable and SAE Power Cable, that must be connected to a 12-volt DC power source, such as a battery. A switch and a 1-amp fuse should be utilized in this circuit.

Proceed to the section as follows:

A: Connect to an existing NMEA 2000 Network

OR

B: Connect directly to the Fish Finder

⚠ CAUTION

It is important to finish all installation connections before powering on the fish finder.

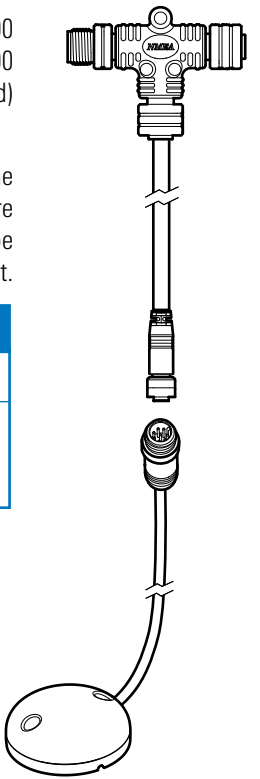
A. Connect to NMEA 2000 Network

Use the following instructions to connect the Sensor to an existing NMEA 2000 network. The Sensor will be powered by the NMEA 2000 backbone.

NOTE

Confirm all NMEA 2000 devices (NMEA 2000 Backbone, T-connectors, Drop Cable, etc.) are properly installed and connected to power. See the NMEA (National Marine Electronics Association) Web site at nmea.org for information about manufacturers of NMEA 2000 certified products and proper NMEA 2000 network installation.

1. Make sure there is an open NMEA 2000 T-connector (not included) on your NMEA 2000 backbone. Connect a drop cable (not included) to the NMEA 2000 T-connector.
2. Insert the Sensor's NMEA 2000 Cable into the NMEA 2000 drop cable. The connectors are keyed to prevent reversed installation, so be careful not to force the connector into the port.



NOTE

The AS GPS HS (N2K) operating voltage is 9-16 VDC.

To purchase drop cables, data T-connectors or other accessories, visit our Web site at **humminbird.johnsonoutdoors.com**.

B. Connect to Fish Finder

⚠ CAUTION

This NMEA 2000 Direct Cable is NOT intended for use with a NMEA 2000 backbone. It should ONLY be used with the AS GPS HS N2K and a compatible Humminbird fish finder. The input voltage for the SAE power cable is a nominal marine vessel voltage of 12 V DC.

Use the following instructions to connect the Sensor directly to the fish finder. The Sensor requires an external power source, which is connected using the included NMEA 2000 direct cable and the SAE power cable.

1. Insert the Sensor's NMEA 2000 Cable into the NMEA 2000 Direct Cable. The connectors are keyed to prevent reversed installation, so be careful not to force the connector into the port.
2. Connect the NMEA 2000 connector on the Direct Cable to the NMEA 2000 port on the fish finder. The connectors are keyed to prevent reversed installation, so be careful not to force the connector into the port.

NOTE

To connect to a HELIX G4N, you must use an additional adapter cable. Connect the NMEA 2000 connector on the Direct Cable to the AS QD NMEA 2000 adapter cable (not included). Connect the other end of the AS QD NMEA 2000 adapter cable to the NMEA 2000 port on the HELIX G4N.

3. Connect the SAE connector on the NMEA 2000 Direct Cable to the SAE Power cable.

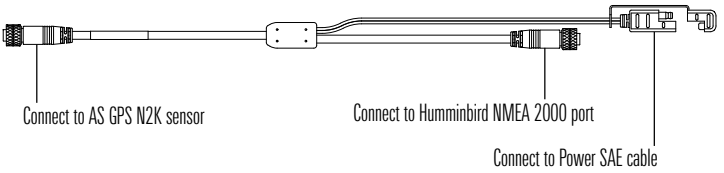
NOTE

This step is not necessary if you are connecting the Sensor to a Humminbird ICE unit. The Humminbird ICE unit already has an SAE Power Cable connected to the battery. Connect the SAE connector on the Direct Cable to one of the open SAE ports on the ICE unit.

4. **Power:** Route the SAE power cable to the main switch or fuse panel (usually located near the console), or connect to a battery switch (not included).

⚠ CAUTION

A switch and fuse or circuit breaker must be used to protect electronic devices and ensure safe and reliable operation.



5.a **Main Switch/Fuse Panel:** If a fuse terminal is available, use crimp-on type electrical connectors (not included) that match the terminal on the fuse panel. Attach the black wire to ground (–), and the red wire to positive (+) 12 VDC power. Install a 1 Amp fuse (not included) for protection of the unit.

OR

5.b **Battery Switch:** Install the battery switch (not included) using the instructions provided with it. You will also need to obtain and install an inline fuse holder and a 1 Amp fuse (not included) for the protection of the unit. Attach the black wire to ground (-) and the red wire to positive (+) 12 VDC power.

⚠ CAUTION

If you are unable to obtain a battery switch and are forced to connect the power cable directly to the battery, be aware that this will drain the battery. Humminbird recommends connecting to a power source/battery via a switch and fuse/circuit protection device.

It is important to finish all installation connections before powering on the fish finder.

4. Power on and Confirm GPS Reception

Follow the instructions below to power on your Humminbird fish finder and verify GPS reception.

XPLORE/APEX/SOLIX Series

Confirm GPS Connection

1. Press the POWER key.
2. Press the HOME key.
3. Review the top, right corner of the status bar.


Compass: The selected compass/heading sensor is on and heading data is being received


Detected and Active: If a sensor is active and receiving, the GPS icon will be white.


Connected but not Detected or Active: If a sensor is not detected on the network, or not receiving, it will be completely gray.


Connected but not Receiving: If a sensor is detected, but is not receiving, the icon will be partially gray. In this illustration, the GPS receiver is detected, but it doesn't have a GPS fix. This feature will vary with the type of icon represented.

4. If the sensors are active, your system is ready for use on the water.
    - For additional system status, select Home > Settings > System > System Info.
    - If the icon is not displaying in the system status bar, check the installation of the accessory and the cable connection to the fish finder.

Review GPS Reception

1. Press the HOME key.
2. Select Tools.
3. Select the GPS tool.
   - Under GPS (1), select Satellites.
   - Under GPS (1), select Signal Strength.

GPS (1) Satellite Sky Chart

Select GPS Source

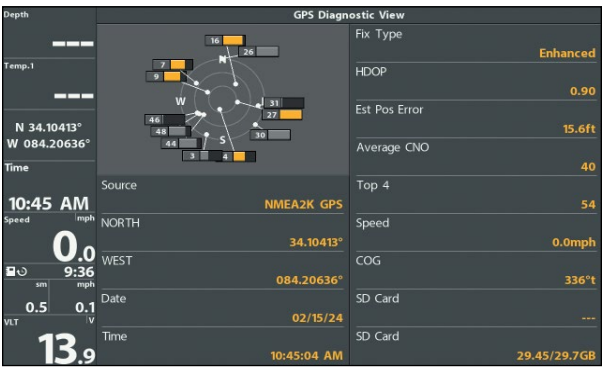
When the Sensor is connected to the fish finder, it will be assigned as the primary source GPS (1). Use the following instructions to change the GPS source.

1. Press the HOME key.
2. Select Tools.
3. Select the GPS tool.
4. Under GPS Source, select GPS (1) or GPS (2).
5. Select Auto-Configure. Tap the on/off button.

   To manually select a GPS source, turn Auto-Configure off, and select a GPS receiver from the list.

1. Press the POWER/LIGHT key.
2. When the Title screen is displayed, press the MENU key to access the Start-Up Options Menu.
3. If a functioning transducer is connected, Normal operation will be selected automatically, and your Fishing System can be used on the water. See your control head operations manual for more information.
4. Press the VIEW key repeatedly until the GPS Diagnostic View is displayed on the screen. Confirm that External GPS is displayed and the Fix Type indicates Enhanced or 3D.
   - If the GPS Diagnostic View is not displayed in the rotation, press the MENU key twice to open the Main Menu. Select the Views tab > GPS Diagnostic View > Visible.
   - If it is connected and detected, the Sensor will also be displayed in the Accessory Test screen.

GPS Diagnostic View



5. Confirm NMEA 2000 Connection

When the Sensor is connected to the Humminbird, it will be detected automatically. You can also manually select equipment and set the data offset.

XPLORE/APEX/SOLIX Series

View Connected Systems

Use the NMEA 2000 Devices dialog box to review the NMEA 2000 GPS connection.

1. Press the HOME key.
2. Select Settings.
3. Select System.
4. Select NMEA 2000.
5. Select NMEA 2000 Devices.

Manually Turn on the NMEA 2000 Network

1. Press the HOME key.
2. Select Settings.
3. Select NMEA 2000.
4. Tap the on/off button, or press the ENTER key, to turn it on.

Select NMEA 2000 Data Sources

When equipment is connected to the control head, the equipment and its data will be detected automatically. Use the instructions in this section to manually select devices to use on the NMEA 2000 network.

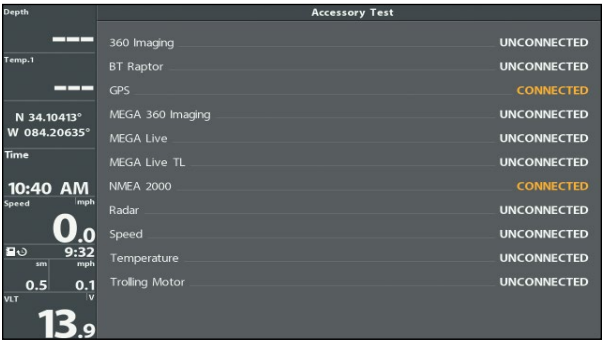
1. From the NMEA 2000 menu, select NMEA 2000 Devices.
2. Select Auto-Select. Tap the on/off button, or press the ENTER key, to turn it off.
3. Select devices to add to the NMEA 2000 network. (check mark = included, blank = not included)

Set Data Offsets

1. From the NMEA 2000 menu, select Data Offsets.
2. Select a device.
3. Tap the on/off slider, or press the ENTER key, to turn it off.
4. Press and hold the slider, or press and hold the ENTER key, to set the offset amount.

Use the Accessory Test View to review GPS and NMEA 2000 connection.

Accessory Test View



1. Press and hold the VIEW key.
2. Select System > Accessory Test.
3. Confirm NMEA 2000 network is connected.

Manually Turn on the NMEA 2000 Network

1. Main Menu (Custom User Mode): Press the MENU key twice. Select the Data Sources tab.
2. Select NMEA 2000 Network.
3. Press the RIGHT or LEFT Cursor keys to turn the NMEA 2000 Network on or off.

Select NMEA 2000 Data Sources

1. Main Menu: Press the MENU key twice. Select the Data Sources tab.
2. Select the Data Sources menu option. Press the RIGHT Cursor key to open the NMEA2K Sources menu.
3. Press the DOWN or UP Cursor key to select a source group.
4. Press the RIGHT Cursor key to open the submenu for that source.

5. Press the DOWN or UP Cursor key to select a data source. Press the RIGHT Cursor key or CHECK/INFO key to select the data source.
6. Press the EXIT key to return to the NMEA2K Sources menu.
7. Repeat steps 3 – 6 to select another data source.

Set Data Offsets

Use the Data Offsets menu to adjust digital readouts by the amount you set.

1. Main Menu: Press the MENU key twice. Select the Data Sources tab.
2. Select Data Offsets. Press the RIGHT Cursor key to open the Data Offsets menu.
3. Select a data option. (Depth Adjustment, Heading Adjustment, NMEA 2K Heading Adjustment, Temp(Water) Adjustment, STW Adjustment)
4. Press the RIGHT or LEFT Cursor keys to adjust the setting.

6. Customize the NMEA 2000 Instrument View

The NMEA 2000 Instrument View presents a full screen view of gauges and data boxes. It automatically displays a default data set, or you can select the data readouts and sources for the gauges and data boxes. You can also choose to hide the data boxes.

To customize data items displayed within the NMEA 2000 Instrument View, see the instructions below.

XPLORE/APEX/SOLIX Series

Customize Data Box Readouts

Use the following instructions to change the data boxes displayed in a data bar.

Edit Data Boxes

1. With an Instrument View displayed on-screen, tap the Menu icon in the Top Bar.
2. Select Edit Instrument.
3. Select the gauge or data box.
4. Change the Type of Data: Select Data Type. Select a category and a data type from the menus.
5. Change the Displayed Range: Select Data Limits. Select a range from the list.

6. Set the Warning(s) Threshold: Select a warning (if available), and tap the on/off button to turn it on. Press and hold the slider to set the warning threshold.
7. Close: Press and hold the EXIT key.

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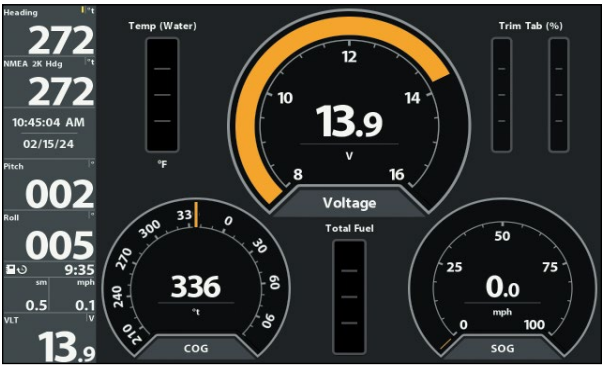
You can select the data that will be displayed in each box. Use the Edit Data Boxes menu to set your standard digital readouts. Use the Edit Navigation Data Boxes menu to set the digital readouts that will be displayed during navigation.

Edit Data Boxes



1. NMEA 2000 X-Press Menu: With the NMEA 2000 Instrument View displayed on screen, press the MENU key once.
2. Select Edit Data Boxes or Edit Navigation Data boxes. Press the RIGHT Cursor key.
3. Select a Data Box (Data Box 1, 2, 3, etc.).
4. Select a digital readout. Hide: To hide the data boxes, select Data Box. Use the LEFT Cursor key to select Off.

7. Confirm the Heading Sensor Operation

It is important to confirm that the Heading Sensor is installed correctly by reviewing the heading digital readout.

NOTE

This procedure should be performed at slow speeds, in calm, open water, in a large area that is far from shallow water, boats, or other obstacles.

XPLORE/APEX/SOLIX Series

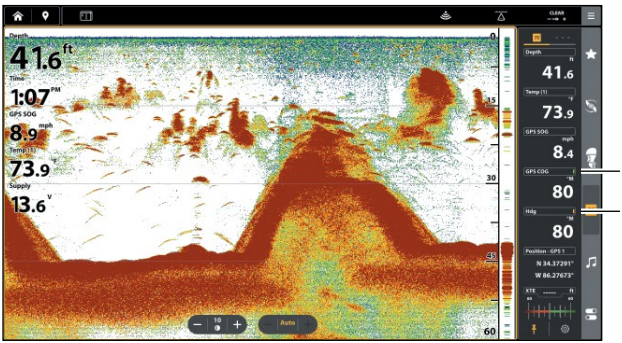
1. Press the HOME key.
2. Select Settings > User Preferences > Units > Compass > Magnetic North.
3. With a Sonar View displayed on-screen, navigate the boat in a straight line, in calm, open water at 4.5 mph. Compare the Heading digital readout on the screen with the Course (COG) digital readout. The readouts should be within approximately 5° of each other.

   Adjust: To adjust the zero point of the Heading Sensor, select Settings > NMEA 2000 > Data Offsets. Select Heading Adjustment. Tap the on/off button, or press the ENTER key, to turn it on. Press and hold the slider, or press and hold the ENTER key, to adjust the setting.

   If the procedure failed: If the Heading digital readout is significantly different than the COG, the Heading Sensor might be installed in a location with too much magnetic interference. Check the installation location and possible magnetic disturbances in the area.

Confirming the Heading Digital Readout (Chart View)

Confirming the Heading Digital Readout (Sonar View)



1. Press the MENU key twice to open the Main Menu.
2. Select Navigation tab > North Reference > Magnetic.
3. Press the EXIT key.
4. Select Setup tab > Select Readouts.

NOTE

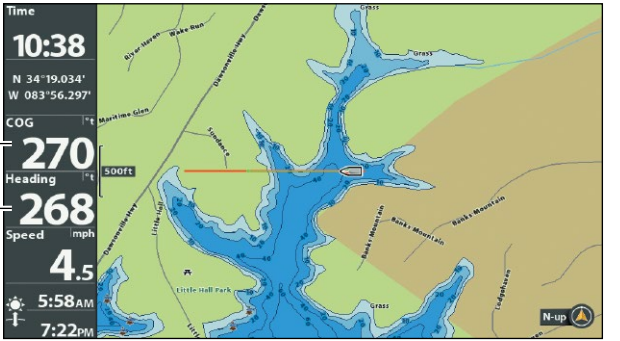
If the Select Readouts menu option does not appear under the Setup tab, change the User Mode to Advanced. Select Main Menu > Setup tab > User Mode > Advanced.

5. Select a Readout position and use the RIGHT or LEFT Cursor keys to select Heading. Select another Readout position and select Course.
6. Press the EXIT key until the Main Menu is closed.
7. Press the VIEW key until the Sonar View is displayed on the screen.
8. Navigate the boat in a straight line, in calm, open water at 4.5 mph. Compare the Heading digital readout on the screen with the Course (COG) digital readout. The readouts should be within approximately 5° of each other.

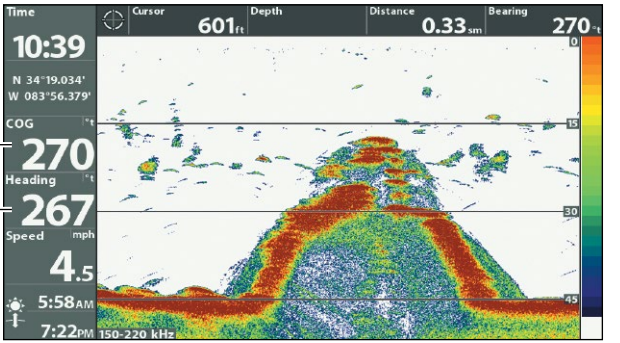
   Adjust: To adjust the zero point of the Heading Sensor, select Main Menu > Navigation tab > Heading Offset. Press the RIGHT or LEFT Cursor keys to adjust the setting.

   If the procedure failed: If the Heading digital readout is significantly different than the COG, the Heading Sensor might be installed in a location with too much magnetic interference. Check the installation location and possible magnetic disturbances in the area.

Confirming the Heading Digital Readout (Chart View)



Confirming the Heading Digital Readout (Sonar View)



Update Software

You will need an SD or microSD card (depending on your Humminbird model).

1. Install a formatted SD or microSD card into the computer card slot.
2. Go to **humminbird.johnsonoutdoors.com**, and click Support > Software Updates.
3. Scroll down to Accessories and Mapping. The available software updates are listed as downloads under each accessory product.
    - Confirm your Humminbird model is listed in the software description.
    - Read the notices and instructions, and select Download.
    - Follow the on-screen prompts to save the software file to the SD or microSD card.
4. Insert the SD or microSD card (with the software file) into the fish finder card slot.
5. Power on your Humminbird fish finder.
6. **XPLORE/APEX/SOLIX:** Press the HOME key and select Tools. Select the Software Updates tool. Any available software updates will be listed. Scroll to AS GPS HS N2K, and select Install Now.

   HELIX: The software will be automatically detected. The fish finder will display a dialog box to indicate that it has detected the software.

NOTE

It may take several minutes for the fish finder to update, and you will briefly lose GPS output as the update completes.

7. When the software update is complete, remove the SD or microSD card from the fish finder card slot.

Contact Humminbird

Contact Humminbird Technical Support through our Help Center at **https://humminbird-help.johnsonoutdoors.com/hc/en-us** or in writing to the address below:

Humminbird Service Department
678 Humminbird Lane
Eufaula AL 36027 USA

Social Media Resources:

Facebook.com/HumminbirdElectronics

X.com (@humminbirdfish)

Instagram.com/humminbirdfishing

YouTube.com/humminbirdtv