



# 4" GPS Speedometer with Depth Sounder

# IS0376

Rev. B ecn 10202 09/2015

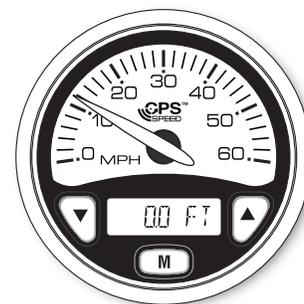
The GPS Speedometer is a drop in replacement for your current speedometer and can be made to match your existing instrument dash.

GPS information is gathered from a GPS antenna. The GPS Speedometer uses a highly accurate 48 channel GPS receiver.

Speed data is shown by an analog pointer. This pointer is driven by a digital stepper motor for increased accuracy and minimized pointer bounce during vessel operation.

Depth, Trip Log and Settings functions are displayed in the LCD. The Depth Sounder includes audible and visual alarms for Deep Water and Shallow Water conditions and a programmable Keel Offset. Depth can be read in Feet, Fathoms and Meters.

*All data displayed on the GPS Speedometer is for reference only and should not be trusted as a sole navigation source.*



Scale may vary depending on model.

## Caution

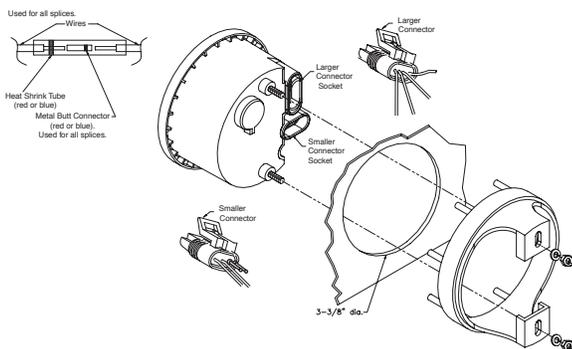
Disconnect the battery during installation. Tighten nuts on the back clamp only slightly more than you can tighten with your fingers. Six inch-pounds of torque is sufficient. Overtightening may result in damage to the instrument and may void your warranty.

Be certain wire insulation is not in danger of melting from engine or exhaust heat or interfering with moving mechanical parts. For best results, use stranded, insulated wire not lighter than 18AWG that is approved for marine use.

## Parts

QTY	Description
1	GPS Speedometer
1	Mounting Bracket (BC0102)
1	GPS108 GPS Antenna
1	HN0357 - Depth Sounder harness
1	HN0353 - GPS Antenna harness
	#8 Brass Hardware (5/16")

## Installation



1. Cut a 3 3/8" (85 mm) diameter hole in the dash allowing a clearance of 3" (80 mm) for wires. Mount the GPS Speedometer with the backclamp supplied. Use the supplied washers and nuts and tighten
2. Mount the GPS antenna.

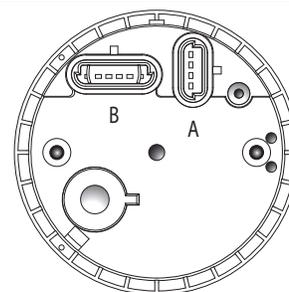
Note: Although the antenna can be hidden behind the instrument panel, for best results mount the antenna with a view to the sky.

7. Connect the wire from "B" - pin B (Black) to the ground wire of the transducer.
8. Plug the "A" Packard (GPS Antenna) connector into the "A" slot on back of the Speedometer.
9. Plug the "B" Packard (Depth Sounder) connector into the "B" slot on back of the Speedometer.
10. Reconnect the battery.

## Wiring Diagram

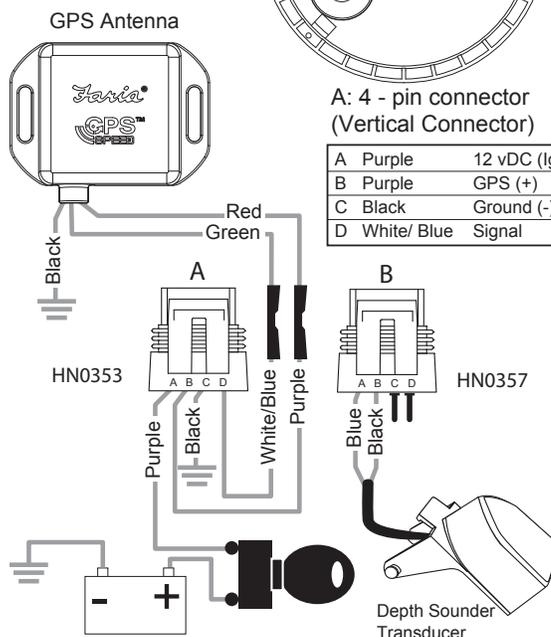
B: 4 - pin connector

A	Blue	Depth Signal
B	Black	Depth Ground
C	N/C	(Not Connected)
D	N/C	(Not Connected)



A: 4 - pin connector (Vertical Connector)

A	Purple	12 vDC (Ignition)
B	Purple	GPS (+)
C	Black	Ground (-)
D	White/Blue	Signal



## Wire Connections

1. Connect the wire from "A" - pin A (Purple) to the 12 vDC side of the ignition.
2. Connect the wire from "A" - pin B (Purple) to the Red wire from the GPS antenna.
3. Connect the wire from "A" - pin C (Black) with connector to the electrical ground, generally available in several locations at or near the instrument panel.
4. Connect the wire from "A" - pin D (White/Blue) to the Green wire from the GPS antenna.
5. Connect the (Black) wire from the GPS antenna to the electrical ground, generally available in several locations at or near the instrument panel.
6. Connect the wire from "B" - pin A (Blue) to the signal wire of the transducer.

Made in the USA

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## Operation

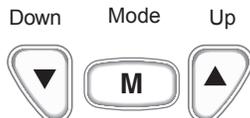
### GPS Speedometer

1. After turning on the power the speedometer will attempt to acquire the GPS satellites. The pointer will move to 5 MPH.
2. Once the Speedometer has a GPS Lock on the satellites the Pointer will read current speed.

Note: If starting from a cold start (reapplying power) the GPS Speedometer may require the speedometer to be moving over ground before the speed is updated. Once the GPS Speedometer has reacquired the satellite normal operations should resume.

### Description

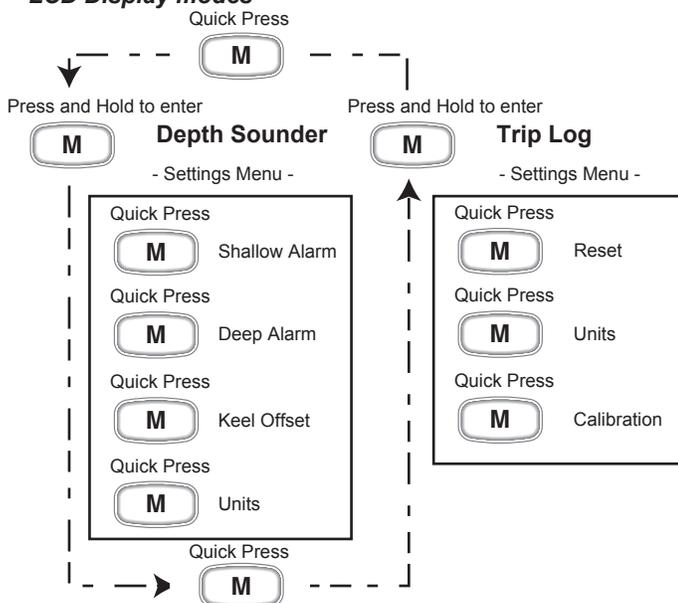
The GPS Speedometer has three push buttons;



The buttons; "Up," "Down," and "Mode", control the modes of operation. The "Mode" button is used to change the function of the LCD display and to access submenus and adjustable settings. The "Down" and "Up" buttons are used to modify the settings.

In the normal operation mode, pressing the "Mode" button for a short period of time causes the display to cycle between the Depth Sounder display and the Trip Log display. Pressing and holding the "Mode" button causes the display to change to the "settings" submenu.

### LCD Display modes



When the settings menus have been selected, pressing the "Mode" button for a short period of time causes the display to cycle through the setting options. Within each setting selection, pressing the "Down" and "Up" buttons causes the affected setting to change. The instrument will automatically record the new settings as you adjust them.

When in a setting menu, pressing and holding the "Mode" button returns to main function.

### Lighting

In normal operating mode the instrument lighting can be

adjusted by pressing the "Up" and "Down" buttons.

### Full Scale Adjustment

The Speedometer full scale deflection setting can be changed using the Setup Mode. Use this option only if you have reason to believe that your setting is wrong. Setting an incorrect value in this menu can result in extremely inaccurate performance of the speedometer. To access the Setup Mode, press and hold both the "Up" and "Down" buttons while turning on the instrument.

The display will show "\*\*SETUP\*\*".



Briefly pressing the "Mode" button will change the display to the setting menu. The LCD will flash "S SCALE", then show the current speedometer scale selection. Use the "Up" or "Down" buttons to modify the setting.



Adjust the Full Scale reading to match dial. The instrument will automatically record the new setting as you modify it.

Pressing and holding the "Mode" button sets the instrument to normal operation.

Note: This is normally a factory setting that needs no adjustment. The setting adjust the "full scale" operating range of the speedometer to match the dial on the instrument. Using the "Up" and "Down" buttons, adjust the setting to match the maximum reading on the speedometer dial.

The speedometer is a digital instrument with the appearance of an analog instrument. The speedometer is designed to be operated from a "pulsed input" sensor. A digitally controlled stepper motor moves the pointer to display speed using a linear dial. The instrument and stepper motor provide excellent accuracy.

### Trip Log



The Trip Log is similar to the trip odometer in an automobile. The distance traveled, as recorded by the speedometer, is displayed.



The Trip Log may be reset to zero, the units of measure changed, or the calibration adjusted using the sub menus.

Pressing and holding the "Mode" button while the Trip Log is displayed will change the display to the "settings" menu.

### Trip Log "Settings" menu

There are three items in the Trip Log "Settings" menu; Reset, Units, and Calibration. Briefly pressing the "Mode" button cycles through the menu items.

The instrument will automatically record the new settings as you adjust them.

### Reset the Trip Log



While in the Trip Log settings menu, use the "Up" and "Down" buttons to select "RESET". Press the "Up" and "Down" together to reset the Trip Log to zero.

### Units



While in the Trip Log settings menu, use the "Up" and "Down" buttons to select "UNITS". Press the "Up" or "Down" button to select the units of measurement for the Trip Log.

Select between miles (MI)



and nautical miles (NM).



### Calibration



Do not use this mode to calibrate the Speedometer. The Speedometer uses a live GPS signal and requires no calibration.

**Warning: Trying to calibrate this speedometer with this calibration system can create problems with the speedometer portion of this instrument.**

## Depth Sounder



The depth can be displayed in feet, meters, or fathoms. Audible and visual alarms can be set to warn of shallow or deep water conditions.

A "keel offset" setting allows the operator to adjust for the difference in the location of the Depth transducer compared to the deepest part of the boats hull. The various settings are accessed by pressing and holding the "Mode" button while the Depth Sounder is displayed.



### Depth Sounder "Settings" menu

There are four items in the Depth Sounder "Settings" menu; Shallow Alarm, Deep Alarm, Keel Offset, and Units. Briefly pressing the "Mode" button cycles through the menu items.

The instrument will automatically record the new settings as you adjust them.

### Shallow Alarm



Pressing the "Up" or "Down" button changes the setting for the Shallow Alarm.

Setting the Shallow Alarm to zero turns off the alarm. To have this alarm indicate the depth of water under the deepest part of the hull, the Keel Offset must be properly set.

### Deep Alarm



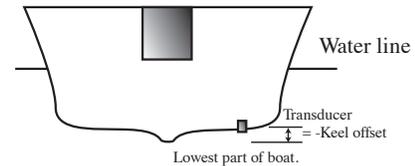
Pressing the "Up" or "Down" button changes the setting for the Deep Alarm Setting Deep Alarm to zero turns off the alarm.

### Keel Offset



Pressing the "Up" or "Down" button changes the setting for the Keel Offset.

Negative numbers indicate that the Depth Sounder transducer is located ABOVE the deepest part of the hull (typical). Allow the worst case boat loading when adjusting the Keel Offset as this setting affects the Shallow Alarm.



### Units



Pressing the "Up" or "Down" button cycles the units of measurement for the Depth Sounder between feet (FT),



meters (m),



and fathoms (FA).



### Loss of Signal

When the Speedometer loses signal from the transducer the LCD display will flash the following:



## Calibration



You should not need this mode to calibrate the Speedometer. The Speedometer uses a live GPS signal and requires no calibration.

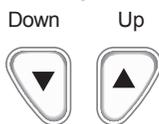
**Warning: Trying to calibrate this speedometer with this calibration system can create problems with the speedometer portion of this instrument.**

### Fine Adjustment Calibration

Use this calibration if you find your GPS Speedometer disagrees slightly with your other speed sensing equipment. You can adjust the pointer movement so that the speed indicated matches the speed indicated on other devices.

There are two methods of calibration;

1) A GPS or radar gun can be used to obtain a fixed speed. While holding the boat at the selected speed press the "Up" or "Down" buttons to adjust the speedometer pointer reading to match the GPS or radar gun indicated speed.



2) The Trip Log can be set to zero and then a course of known distance run, such as between two buoys or by using a GPS. At the end of the run access the Calibration menu item.

Press the "Up" or "Down" buttons to adjust the recorded Trip Log distance to match the known distance. This will calibrate both Trip Log and the Speedometer.

